411 108th AVENUE NE, SUITE 1800 BELLEVUE, WA 98004-5571 T. 425.458.6200 F. 425.458.6363 www.parametrix.com

> July 24, 2009 PMX No. 555-3747-003 (03/02)

Mr. Richard H. Morck, P.E. Landmarc Technologies, Inc. 14816 439th Place SE North Bend, WA 98045-9248

Re: December 2008 and March 2009 Leachate Sampling Results, Newcastle Demolition Landfill

Dear Rick:

This report summarizes the results of the leachate sampling conducted on December 30, 2008 and March 16, 2009 at the Newcastle Demolition Landfill. The landfill was formerly owned and operated by Coal Creek Development Corporation, and accepted demolition and inert waste until 1992. It was formally closed in June 1993 and has since been developed as a golf course by Newcastle Golf LLC.

Sampling of leachate from the pump station was conducted per the request of the Health Department to evaluate potential impacts of an overflow event that occurred in the December 2007 to January 2008 timeframe. There are two inflows into the pump station. One is the original leachate collection pipe that was installed around 1987 to control leachate seeps on King Co. Parks property to the east. The flow from this system is seasonal, low to non-existent in summer, higher in winter and spring. The second inflow to this system was added in 2001 when the golf course development occurred. The drainage behind the new retaining wall along 155th Ave. SE. was directed into the leachate manhole because of the concern that this drainage might be impacted by percolation through waste in-place along that boundary. At the time, this was expected to be a very small flow just relieving pore pressure behind the short retaining wall. It is this second inflow that, unexpectedly, substantially increased flows into the manhole. This flow is very sensitive to precipitation, therefore the two leachate sampling events were selected to approximate the seasonal flow conditions when retaining wall inflow is present similar to when the overflow occurred. The December 30, 2008 sampling was not linked to a particular rainfall event. The March 16, 2009 sample was collected after one inch of rainfall had been recorded in the preceding three days at the SeaTac airport.

Samples were collected by Parametrix personnel from the leachate vault directly into containers provided by the laboratory. The samples were delivered directly to Analytical Resources, Inc. (ARI) in Seattle, Washington for analysis. Samples were analyzed for volatile organic compounds, semivolatile organic compounds, chloride, nitrite, nitrate, ammonia, sulfate, hardness (calcium and magnesium), dissolved iron, dissolved manganese, dissolved zinc, chemical oxygen demand (COD), total organic carbon (TOC), and total dissolved solids (TDS).

The analytical results for the leachate samples are summarized in Table 1. The laboratory reports and chain-ofcustody forms are presented in Attachment A.

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Mr. Richard H. Morck, P.E. July 24, 2009 Page 2

Please contact me at (425) 458-6320 or <u>lgilbert@parametrix.com</u> if you have questions regarding this report. Sincerely,

PARAMETRIX

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Lisa A. Gilbert, LHG Project Hydrogeologist

cc: Yolanda Pon, Public Health– Seattle & King County (two copies)Bob Jaffe, Preston Gates and Ellis

TABLES

Analyte Units 12/30/08 12/30/08 3/16/09 Conventionals mg/L 1190 953 Chloride mg/L 48.3 0.428 N-Ammonia mg-N/L 0.179 0.428 N-Nitrate mg-N/L 0.179 0.428 N-Nitrate mg-N/L 0.179 0.428 Sulfate mg-N/L 0.179 0.428 Sulfate mg/L 64.0 19.1 Total Organic Carbon mg/L 21.2 19.1 Hardness mg/L 21.2 10 Calcium μg/L 2.0 2.0 Cadmium μg/L 2.0 2.0 Calcium μg/L 2.0 32900 Lead μg/L 2.0 2.0 Copper μg/L 3.0 32900 Lead <			Leachate	Trip Blank	Leachate
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N-Nutrite mg-N/L 0.010 U 0.179 0.428 Sulfate mg/L 98.0 77.9 Chemical Oxygen Demand mg/L 64.0 48.3 Total Organic Carbon mg/L 21.2 19.1 Hardness mg/L 21.2 10 Beryllium µg/L 2 U 2 U Antimony µg/L 1 U 1 U Gadium µg/L 2 U 5 U Cadmium µg/L 2 U 5 U Copper µg/L 3 5 U Copper µg/L 4440 32900 Lead µg/L 10 U 100 Marganese µg/L 10 U 100 Marganese µg/L 10 U 10 U Silver µg/L 10 U 10 U Silver <t< td=""><td>N-Nitrate</td><td>mg-IN/L</td><td>0.179</td><td></td><td>0.428</td></t<>	N-Nitrate	mg-IN/L	0.179		0.428
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Hardiness Ingle CaUOS S90 760 Total Metals	Hardness	mg/L mg/L CaCO2	21.2		19.1
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Bromomethane $\mu g/L$ 0.2 U 0.2 U 1.0 U Winyl Chloride $\mu g/L$ 0.5 U 0.5 U 1.0 U Vinyl Chloride $\mu g/L$ 0.2 U 0.2 U 0.2 U Chloroethane $\mu g/L$ 0.2 U 0.2 U 0.2 U Methylene Chloride $\mu g/L$ 0.5 U 0.5 U 0.5 U Acetone $\mu g/L$ 3.0 U 3.0 U 3.0 U 0.2 U Carbon Disulfide $\mu g/L$ 0.2 U 0.2 U 0.2 U $1,1$ -Dichloroethene $\mu g/L$ 0.2 U 0.2 U 0.2 U $1,1$ -Dichloroethene $\mu g/L$ 0.2 U 0.2 U 0.2 U $1,1$ -Dichloroethene $\mu g/L$ 0.2 U 0.2 U 0.2 U $1,2$ -Dichloroethene $\mu g/L$ 0.2 U 0.2 U 0.2 U $1,2$ -Dichloroethane $\mu g/L$ 0.2 U 0.2 U 0.2 U $1,2$ -Dichloroethane $\mu g/L$ 0.2 U 0.2 U 0.2 U $1,1,1$ -Trichloroethane $\mu g/L$ 0.2 U 0.2 U 0.2 U $1,1,1$ -Trichloroethane $\mu g/L$ 0.2 U 0.2 U 0.2 U $1,1,1$ -Trichloroethane $\mu g/L$ 0.2 U 0.2 U 0.2 U $1,2$ -Dichloropropane $\mu g/L$ 0.2 U 0.2 U 0.2 U $1,2$ -Dichloropropane $\mu g/L$ 0.2 U 0.2 U 0.2 U <	Chloromothono	ug/l	0.2.11	0.2.11	1011
Vinyl Chloride µg/L 0.3 0 0.3 0 1.0 0 Vinyl Chloride µg/L 0.2 U 0.2 U 0.2 U Methylene Chloride µg/L 0.5 U 0.5 U 0.5 U Acetone µg/L 0.0 U 0.0 U 0.0 U 0.2 U Carbon Disulfide µg/L 0.2 U 0.2 U 0.2 U 0.2 U 1,1-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U 0.2 U 1,1-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U 0.2 U 1,1-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U 0.2 U 1,1-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U trans-1,2-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U cis-1,2-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 2-Butanone µg/L 0.2 U 0.2 U 0.2 U 0.2 U 1,1,1-Trichloroethane µg/L 0.2 U 0.2 U 0.2 U 0.2 U	Bromomothano	µg/∟ ug/l	0.2 0	0.2 0	1.0 0
Chloroethane µg/L 0.2 U 0.2 U 0.2 U 0.2 U Methylene Chloride µg/L 0.5 U 0.5 U 0.5 U 0.5 U Acetone µg/L 3.0 U 3.0 U 5.0 U 0.2 U 0.2 U Carbon Disulfide µg/L 0.2 U 0.2 U 0.2 U 0.2 U 0.2 U 1,1-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U 0.2 U 0.2 U 1,1-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U 0.2 U 0.2 U 1,1-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U 0.2 U 0.2 U trans-1,2-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U 0.2 U cis-1,2-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 0.2 U 1,2-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 0.2 U 2-Butanone µg/L 0.2 U 0.2 U 0.2 U 0.2 U 1,1,1-Trichloroethane µg/L 0.2 U 0.2 U 0.2 U 0.2 U Vinyl Acetate µg/L	Vinyl Chloride	µg/∟ ug/l	0.3 0	0.3 0	0.2 11
Methylene Chloride µg/L 0.2 0 0.2 0 0.2 0 Methylene Chloride µg/L 0.5 U 0.5 U 0.5 U Acetone µg/L 3.0 U 3.0 U 5.0 U Carbon Disulfide µg/L 0.2 U 0.2 U 0.2 U 1,1-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U 1,1-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 1,1-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U trans-1,2-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U cis-1,2-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U chloroform µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 2-Butanone µg/L 0.2 U 0.2 U 0.2 U 0.2 U 1,1,1-Trichloroethane µg/L 0.2 U 0.2 U 0.2 U Vinyl Acetate µg/L 0.2 U 0.2 U 0.2 U Vinyl Acetate µg/L 0.2 U 0.2 U 0.2 U	Chloroethane	µg/L µg/l	0.2 0	0.2 0	0.2 0
Acetone µg/L 3.0 U 3.0 U 5.0 U Carbon Disulfide µg/L 0.2 U 0.2 U 0.2 U 1,1-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U trans-1,2-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U cis-1,2-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 1,1-Trichloroethane µg/L 0.2 U 0.2 U 0.2 U 1,1,1-Trichloroethane µg/L 0.2 U 0.2 U 0.2 U Carbon Tetrachloride µg/L 0.2 U 0.2 U 0.2 U Vinyl Acetate µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropane µg/L 0.2 U 0.2 U 0.2 U <	Methylene Chloride	µg/L µg/l	0.2 0	0.2 0	0.5 11
Carbon Disulfide µg/L 0.0 0 0.0 0 0.0 0 1,1-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U 1,1-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U 1,1-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U trans-1,2-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U cis-1,2-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U Chloroform µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 2-Butanone µg/L 0.2 U 0.2 U 0.2 U 1,1,1-Trichloroethane µg/L 0.2 U 0.2 U 0.2 U Carbon Tetrachloride µg/L 0.2 U 0.2 U 0.2 U Vinyl Acetate µg/L 0.2 U 0.2 U 0.2 U U Null Acetate µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropane µg/L 0.2 U 0.2 U 0.2 U		μg/L μg/l	3011	3011	501
1,1-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U 1,1-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 1,1-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U trans-1,2-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U cis-1,2-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U Chloroform µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 2-Butanone µg/L 0.2 U 0.2 U 0.2 U 1,1,1-Trichloroethane µg/L 0.2 U 0.2 U 0.2 U Carbon Tetrachloride µg/L 0.2 U 0.2 U 0.2 U Vinyl Acetate µg/L 1.0 U 1.0 U 1.0 U Bromodichloromethane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropene µg/L 0.2 U 0.2 U 0.2 U </td <td>Carbon Disulfide</td> <td>µg/L µg/l</td> <td>0.00</td> <td>0.2 U</td> <td>0.00</td>	Carbon Disulfide	µg/L µg/l	0.00	0.2 U	0.00
1,1 - Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 1,1 - Dichloroethane µg/L 0.2 U 0.2 U 0.2 U trans-1,2-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U cis-1,2-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U Chloroform µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 2-Butanone µg/L 0.2 U 0.2 U 0.2 U 1,1,1-Trichloroethane µg/L 0.2 U 0.2 U 0.2 U Carbon Tetrachloride µg/L 0.2 U 0.2 U 0.2 U Vinyl Acetate µg/L 1.0 U 1.0 U 1.0 U Bromodichloromethane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropene µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropene µg/L 0.2 U 0.2 U 0.2 U	1 1-Dichloroethene	µg/L µg/l	0.2 U	0.2 U	0.2 U
1,1 Diction octume µg/L 0.2 0 0.2 0 0.2 0 trans-1,2-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U cis-1,2-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U Chloroform µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 2-Butanone µg/L 0.2 U 0.2 U 0.2 U 1,1,1-Trichloroethane µg/L 0.2 U 0.2 U 0.2 U Carbon Tetrachloride µg/L 0.2 U 0.2 U 0.2 U Vinyl Acetate µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropene µg/L 0.2 U 0.2 U 0.2 U	1 1-Dichloroethane	µg/∟ ug/l	0.2 0	0.2 0	0.2 0
cis-1,2-Dichloroethene µg/L 0.2 U 0.2 U 0.2 U Chloroform µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 2-Butanone µg/L 0.2 U 0.2 U 0.2 U 1,1,1-Trichloroethane µg/L 0.2 U 0.2 U 0.2 U Carbon Tetrachloride µg/L 0.2 U 0.2 U 0.2 U Vinyl Acetate µg/L 0.2 U 0.2 U 0.2 U Bromodichloromethane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropane µg/L 0.2 U 0.2 U 0.2 U cis-1,3-Dichloropropene µg/L 0.2 U 0.2 U 0.2 U Trichloroethene µg/L 0.2 U 0.2 U 0.2 U	trans-1 2-Dichloroethene	µg/∟ ug/l	0.2 U	0.2 U	0.2 U
Chloroform µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 2-Butanone µg/L 2.5 U 2.5 U 0.2 U 1,1,1-Trichloroethane µg/L 0.2 U 0.2 U 0.2 U Carbon Tetrachloride µg/L 0.2 U 0.2 U 0.2 U Vinyl Acetate µg/L 0.2 U 0.2 U 0.2 U Bromodichloromethane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropane µg/L 0.2 U 0.2 U 0.2 U 1,3-Dichloropropene µg/L 0.2 U 0.2 U 0.2 U Trichloroethene µg/L 0.2 U 0.2 U 0.2 U	cis-1 2-Dichloroethene	µg/= ug/l	021	020	020
1,2-Dichloroethane µg/L 0.2 U 0.2 U 0.2 U 2-Butanone µg/L 2.5 U 2.5 U 0.2 U 0.2 U 1,1,1-Trichloroethane µg/L 0.2 U 0.2 U 0.2 U 0.2 U Carbon Tetrachloride µg/L 0.2 U 0.2 U 0.2 U 0.2 U Vinyl Acetate µg/L 0.2 U 0.2 U 0.2 U 0.2 U Bromodichloromethane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropane µg/L 0.2 U 0.2 U 0.2 U cis-1,3-Dichloropropene µg/L 0.2 U 0.2 U 0.2 U Trichloroethene µg/L 0.2 U 0.2 U 0.2 U	Chloroform	µg/L µg/l	0.2 U	0.2 U	0.2 U
2-Butanone µg/L 2.5 U 2.5 U 5.0 U 1,1,1-Trichloroethane µg/L 0.2 U 0.2 U 0.2 U Carbon Tetrachloride µg/L 0.2 U 0.2 U 0.2 U Vinyl Acetate µg/L 1.0 U 1.0 U 1.0 U Bromodichloromethane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropane µg/L 0.2 U 0.2 U 0.2 U cis-1,3-Dichloropropene µg/L 0.2 U 0.2 U 0.2 U Trichloroethene µg/L 0.2 U 0.2 U 0.2 U	1 2-Dichloroethane	µg/L ug/l	0.2 U	0.2 U	0.2 U
1,1,1-Trichloroethane µg/L 0.2 U 0.2 U 0.2 U Carbon Tetrachloride µg/L 0.2 U 0.2 U 0.2 U Vinyl Acetate µg/L 1.0 U 1.0 U 1.0 U Bromodichloromethane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropane µg/L 0.2 U 0.2 U 0.2 U cis-1,3-Dichloropropene µg/L 0.2 U 0.2 U 0.2 U Trichloroethene µg/L 0.2 U 0.2 U 0.2 U	2-Butanone	µg/L ug/l	25 U	25 U	5.0 U
Carbon Tetrachloride µg/L 0.2 U 0.2 U 0.2 U Vinyl Acetate µg/L 1.0 U 1.0 U 1.0 U Bromodichloromethane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropane µg/L 0.2 U 0.2 U 0.2 U cis-1,3-Dichloropropene µg/L 0.2 U 0.2 U 0.2 U Trichloroethene µg/L 0.2 U 0.2 U 0.2 U	1 1 1-Trichloroethane	µg/L ug/l	021	021	0.00
Vinyl Acetate µg/L 1.0 U 1.0 U 1.0 U Bromodichloromethane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropane µg/L 0.2 U 0.2 U 0.2 U cis-1,3-Dichloropropene µg/L 0.2 U 0.2 U 0.2 U Trichloroethene µg/L 0.2 U 0.2 U 0.2 U	Carbon Tetrachloride	ua/l	0.2 []	0.2 []	0.2 11
Bromodichloromethane µg/L 0.2 U 0.2 U 0.2 U 1,2-Dichloropropane µg/L 0.2 U 0.2 U 0.2 U cis-1,3-Dichloropropene µg/L 0.2 U 0.2 U 0.2 U Trichloroethene µg/L 0.2 U 0.2 U 0.2 U	Vinvl Acetate	µ9/⊏ µa/l	1011	1011	101
1,2-Dichloropropane µg/L 0.2 U 0.2 U 0.2 U cis-1,3-Dichloropropene µg/L 0.2 U 0.2 U 0.2 U Trichloroethene µg/L 0.2 U 0.2 U 0.2 U	Bromodichloromethane	µ9/⊏ µa/l	0211	0211	0211
cis-1,3-Dichloropropene µg/L 0.2 U 0.2 U 0.2 U Trichloroethene µg/L 0.2 U 0.2 U 0.2 U	1.2-Dichloropropane	μ <u>α</u> /L	0.2 11	0.2 U	0.2 U
Trichloroethene µg/L 0.2 U 0.2 U 0.2 U	cis-1.3-Dichloropropene	µa/L	0.2 U	0.2 U	0.2 U
· · · ·	Trichloroethene	μg/L	0.2 Ū	0.2 Ū	0.2 U

Leachate Results, 2008 - 2009, Newcastle Demolition Landfill

		Leachate	Trip Blank	Leachate
Analyte	Units	12/30/08	12/30/08	3/16/09
Dibromochloromethane	µg/L	0.2 U	0.2 U	0.2 U
Volatile Organics (continued)				
1,1,2-Trichloroethane	µg/L	0.2 U	0.2 U	0.2 U
Benzene	µg/L	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	µg/L	0.2 U	0.2 U	0.2 U
2-Chloroethylvinylether	µg/L	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	0.2 U	0.2 U	0.2 U
4-Methyl-2-Pentanone (MIBK)	µg/L	2.5 U	2.5 U	5.0 U
2-Hexanone	µg/L	2.5 U	2.5 U	5.0 U
Tetrachloroethene	µg/L	0.2 U	0.2 U	0.2 U
1,1,2,2-Tetrachloroethane	µg/L	0.2 U	0.2 U	0.2 U
Toluene	µg/L	0.2 U	0.2 U	0.2 U
Chlorobenzene	µg/L	1.1	0.2 U	1.6
Ethylbenzene	µg/L	0.2 U	0.2 U	0.2 U
Styrene	µg/L	0.2 U	1.6	0.2 U
Trichlorofluoromethane	µg/L	0.2 U	0.2 U	0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	0.2 U	0.2 U	0.2 U
m,p-Xylene	µg/L	0.4 U	0.4 U	0.4 U
o-Xylene	µg/L	0.2 U	0.2 U	0.2 U
	-			

Leachate Results, 2008 - 2009, Newcastle Demolition Landfill

U = Compound undetected at the specified detection limit **Bold** values for detections of volatiles only.

ATTACHMENT A

LABORATORY REPORTS AND CHAIN-OF-CUSTODY FORMS



Analytical Resources, Incorporated

Analytical Chemists and Consultants

1 April 2009

RECEIVED

Lisa Gilbert Parametrix, Inc. 411 108th Avenue NE Bellevue, WA 98004-5571

APR 02 2009

PARAMETRIX BELLEVILE, WASHINGTON

RE: Project No. Newcastle LF ARI Job No: OQ84

Dear Lisa:

Please find enclosed the original Chain-of-Custody documentation and the final reports for the sample from the project referenced above. Analytical Resources, Inc. (ARI) accepted one water sample in good condition on March 16, 2009. The sample was analyzed for dissolved VOAs total metals, hardness and conventional parameters as requested.

No analytical complications were noted.

As always, a copy of this report and all raw data will remain on file at ARI. If you have questions, or require further information, please contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

1.0M

Mark D. Harris Project Manager 206/695-6210 <markh@arilabs.com>

enclosures

cc: File OQ84 MDH/mdh

	Analytical Resources, Incorporated	4611 South 134th Place, Suite 100 Tukwila. WA 98168	206-695-6200 206-695-6201 (fax)	Notes/Comments	; <	6H bH								Received by: Signature)	Printed Name:	Company:	Date & Time:	ti Arrithman December This arrested
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Chain of Custody Rec	ARI Assigned Number:	ARI Client Company:	Client Contact:	Client Project Name:	Client Project #: に、、、シスソス・カロン	Sample ID	leachate							Comments/Special Instructions				l imits of l iability: ABI will parfor

Lines or Learning. Any will period an equesied services in accordance will appropriate memodology following Arti standard operating Procedures and the Arti Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or cosigned agreement between ARI and the Client. Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated Analytical Chemists and Consultants	Cooler Receipt Form
ARI Client: Para Metrix	Project Name: New Castle LF
COC No(s):	Delivered by: Fed-Ex UPS Courier trand Delivered Other:
Assigned ARI Job No: 0 0 8 4	Tracking No:
Preliminary Examination Phase:	
Were intact, properly signed and dated custody seals attached to the	outside of to cooler? YES
Were custody papers included with the cooler?	
Were custody papers properly filled out (ink, signed, etc.)	Юминики Полики Поли
Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistr	y) 8.8
If cooler temperature is out of compliance fill out form 00070F	Temp Gun ID#: 101886
Cooler Accepted by:D	ate: 31609 Time: 1330
Complete custody forms and	attach all shipping documents

Log-In Phase:

			-
Was a temperature blank included in the cooler?		YES	NØ
What kind of packing material was used? Bubble Wrap Wet Ice Gel Packs Baggies Foam Block	k Paper O	ther:	
Was sufficient ice used (if appropriate)?	NA	YEG	NO
Were all bottles sealed in individual plastic bags?		YES	NO)
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		1 ED	NO
Did the number of containers listed on COC match with the number of containers received?		YES	Ø
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	FB	NO
Were all VOC vials free of air bubbles?	NA	VEZ.	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Samples Logged by: M.MDate:3/16/09Time:	1357		

** Notify Project Manager of discrepancies or concerns **

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC
· · · · · · · · · · · · · · · · · · ·			
Additional Notes, Discrepan (OC reads Yo. () Found in Woler	cies, & Resolutions: Ontainers as 6 b	ut 9 containens	w ev e
By: MM	Date: 3/16/2009		
Small Air Buobles Peak	outbles' LARGE Air Bubbles S	Small → "sm"	
Zimm 2-2	man 1 > 4 mun P	eabubbles → "pb"	
	• • • • • •		
	L	Jarge - Ig.	
		leadspace → "hs"	

PRESERV Page	ATION VERIFICATI 1 of 1	CO NO	3/16/	60					ANALYTI TESOUR	CAL				E.	LRI J	ob No:	0Q84					
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Inquiry	Number: NONE - Decnosted: 02/	16/00	~											>	'TSR :	03/16/	60,					
Contact	: Gilbert, Lisa	-0/0T	n																			
client:	Parametrix, Inc													щ	roje	ct #:	55-374	7-003	-			
Logged]	MM : Yc													щ	roje	ct: NEV	VCASTLE	ΓE				
Sample :	Set Used: Yes-48	1												U	ampl	e Site						
Validat	able Package: No													U)	DG N	:0						
Deliver;	ables:													<i>R</i> 4	unaly	tical I	rotoco	l: In	1-hous	U		
HOGNUM		CN	WAD	CHN Ū	COD	FOG	MET	PHEN	SOHd	TKN	NO23	TOC	S2	DMET DC	Ŋ		ADJUST	ED L(OT	AMOUNT		
AKT ID	CLIENT ID	>12	>12	27 V	27 V	۲ <u>5</u>	~2 ~	\$2	^2	۲ 2	<2>	2 2 2	6 <	FLT FI	E,	ARAMETER	TO	INN	MBER	ADDED	DATE/BY	
09-6682 0084A	LEACHATE			Sol	202		JCT JCS				04	Jes										
				2			~					>					-				-	

Checked By <u>AM</u> Date <u>3/16/2000</u>



ARI Job No: 0Q84

Parameter: Volatiles-SW8260B

Matrix: Water

Holding Time: 14 Days Preserved, 7 Days Unpreserved

Client Sample ID	ARI Sample ID	Date Sampled	Date Received	Date Extracted	Date Analyzed
LEACHATE	OQ84A	03/16/09	03/16/09	03/16/09	03/16/09
Method Blank	MB031609	N/A	N/A	03/16/09	03/16/09
Lab Control	LCS031609	N/A	N/A	03/16/09	03/16/09
Lab Control Dup	LCSD031609	N/A	N/A	03/16/09	03/16/09



ARI Job No: 0084

Parameter: Total Dissolved Solids-EPA 160.1

Matrix: Water

Holding Time: 7 Days

Client	ARI	Date	Date	Date	Date
Sample ID	Sample ID	Sampled	Received	Extracted	Analyzed
LEACHATE	OQ84A	03/16/09	03/16/09	N/A	03/23/09
Method Blank	MB032309	N/A	N/A	N/A	03/23/09
Lab Control	LCS032309	N/A	N/A	N/A	03/23/09
LEACHATE	OQ84ADP	03/16/09	03/16/09	N/A	03/23/09



ARI Job No: 0Q84

Parameter: Chloride-EPA 325.2

Matrix: Water

Holding Time: 28 Days

Date Reported: 03/31/09

Client Sample ID	ARI Sample ID	Date Sampled	Date Received	Date Extracted	Date Analyzed
LEACHATE	OQ84A	03/16/09	03/16/09	N/A	03/27/09
Method Blank	MB032709	N/A	N/A	N/A	03/27/09
Standard Ref.	SRM032709	N/A	N/A	N/A	03/27/09

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ARI Job No: 0Q84

Parameter: N-Ammonia-EPA 350.1M

Matrix: Water

Holding Time: 28 Days

Client	ARI	Date	Date	Date	Date
Sample ID	Sample ID	Sampled	Received	Extracted	Analyzed
LEACHATE	OQ84A	03/16/09	03/16/09	N/A	03/30/09
Method Blank	MB033009	N/A	N/A	N/A	03/30/09
Standard Ref.	SRM033009	N/A	N/A	N/A	03/30/09
LEACHATE	OQ84ADP	03/16/09	03/16/09	N/A	03/30/09
LEACHATE	OQ84AMS	03/16/09	03/16/09	N/A	03/30/09



ARI Job No: 0Q84

Parameter: N-Nitrate-Calculated

Matrix: Water

Holding Time: 48 Hours

Client	ARI	Date	Date	Date	Date
Sample ID	Sample ID	Sampled	Received	Extracted	Analyzed
LEACHATE	OQ84A	03/16/09	03/16/09	N/A	03/18/09



ARI Job No: 0084

Parameter: N-Nitrite-EPA 353.2

Matrix: Water

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Holding Time: 48 Hours

Client	ARI	Date	Date	Date	Date
Sample ID	Sample ID	Sampled	Received	Extracted	Analyzed
LEACHATE	OQ84A	03/16/09	03/16/09	N/A	03/18/09
Method Blank	MB031809	N/A	N/A	N/A	03/18/09
Standard Ref.	SRM031809	N/A	N/A	N/A	03/18/09
LEACHATE	OQ84ADP	03/16/09	03/16/09	N/A	03/18/09
LEACHATE	OQ84AMS	03/16/09	03/16/09	N/A	03/18/09



ARI Job No: 0Q84

Parameter: Nitrate + Nitrite-EPA 353.2

Matrix: Water

Holding Time: 48 Hours (unpreserved) 28 Days (preserved)

Client Sample ID	ARI Sample ID	Date Sampled	Date Received	Date Extracted	Date Analyzed
LEACHATE	0Q84A	03/16/09	03/16/09	N/A	03/18/09
Method Blank	MB031809	N/A	N/A	N/A	03/18/09
Standard Ref.	SRM031809	N/A	N/A	N/A	03/18/09
LEACHATE	OQ84ADP	03/16/09	03/16/09	N/A	03/18/09
LEACHATE	OQ84AMS	03/16/09	03/16/09	N/A	03/18/09



ARI Job No: 0Q84

Parameter: Sulfate-EPA 375.2

Matrix: Water

Holding Time: 28 Days

Client	ARI	Date	Date	Date	Date
Sample ID	Sample ID	Sampled	Received	Extracted	Analyzed
LEACHATE	OQ84A	03/16/09	03/16/09	N/A	03/19/09
Method Blank	MB031909	N/A	N/A	N/A	03/19/09
Standard Ref.	SRM031909	N/A	N/A	N/A	03/19/09
LEACHATE	OQ84ADP	03/16/09	03/16/09	N/A	03/19/09
LEACHATE	OQ84AMS	03/16/09	03/16/09	N/A	03/19/09



ARI Job No: 0Q84

Parameter: Chemical Oxygen Demand-EPA 410.4

Matrix: Water

Holding Time: 28 Days

Client Sample ID	ARI Sample ID	Date Sampled	Date Received	Date Extracted	Date Analyzed
LEACHATE	OQ84A	03/16/09	03/16/09	N/A	03/18/09
Method Blank	MB031809	N/A	N/A	N/A	03/18/09
Standard Ref.	SRM031809	N/A	N/A	N/A	03/18/09



ARI Job No: 0Q84

Parameter: Total Organic Carbon-EPA 415.1

Matrix: Water

Holding Time: 28 Days

Client	ARI	Date	Date	Date	Date
Sample ID	Sample ID	Sampled	Received	Extracted	Analyzed
LEACHATE	OQ84A	03/16/09	03/16/09	N/A	03/19/09
Method Blank	MB031909	N/A	N/A	N/A	03/19/09
Standard Ref.	SRM031909	N/A	N/A	N/A	03/19/09
LEACHATE	OQ84ADP	03/16/09	03/16/09	N/A	03/19/09
LEACHATE	OQ84AMS	03/16/09	03/16/09	N/A	03/19/09



ARI Job No: 0Q84

Parameter: ICP Total Metals-6010B

Matrix: Water

Holding Time: 6 Months

Client Sample ID	ARI Sample ID	Date Sampled	Date Received	Date Extracted	Date Analyzed
LEACHATE	OQ84A	03/16/09	03/16/09	03/17/09	03/24/09
Method Blank	MB031709	N/A	N/A	03/17/09	03/24/09
Lab Control	LCS031709	N/A	N/A	03/17/09	03/24/09



ARI Job No: 0Q84

Parameter: GFA Total Antimony-7041

Matrix: Water

Holding Time: 6 Months

Client Sample ID	ARI Sample ID	Date Sampled	Date Received	Date Extracted	Date Analyzed
LEACHATE	OQ84A	03/16/09	03/16/09	03/17/09	03/24/09
Method Blank	MB031709	N/A	N/A	03/17/09	03/24/09
Lab Control	LCS031709	N/A	N/A	03/17/09	03/24/09



ARI Job No: 0Q84

Parameter: GFA Total Arsenic-7060A

Matrix: Water

Holding Time: 6 Months

Client	ARI	Date	Date	Date	Date
Sample ID	Sample ID	Sampled	Received	Extracted	Analyzed
LEACHATE	OQ84A	03/16/09	03/16/09	03/17/09	03/24/09
Method Blank	MB031709	N/A	N/A	03/17/09	03/24/09
Lab Control	LCS031709	N/A	N/A	03/17/09	03/24/09



ARI Job No: 0Q84

Parameter: GFA Total Lead-7421

Matrix: Water

Holding Time: 6 Months

Client Sample ID	ARI Sample ID	Date Sampled	Date Received	Date Extracted	Date Analyzed
LEACHATE	OQ84A	03/16/09	03/16/09	03/17/09	03/23/09
Method Blank	MB031709	N/A	N/A	03/17/09	03/23/09
Lab Control	LCS031709	N/A	N/A	03/17/09	03/23/09



ARI Job No: 0Q84

Parameter: GFA Total Selenium-7740

Matrix: Water

Holding Time: 6 Months

Client Sample ID	ARI Sample ID	Date Sampled	Date Received	Date Extracted	Date Analyzed
LEACHATE	OQ84A	03/16/09	03/16/09	03/17/09	03/25/09
Method Blank	MB031709	N/A	N/A	03/17/09	03/25/09
Lab Control	LCS031709	N/A	N/A	03/17/09	03/25/09



ARI Job No: 0Q84

Parameter: GFA Total Thallium-7841

Matrix: Water

Holding Time: 6 Months

Client Sample ID	ARI Sample ID	Date Sampled	Date Received	Date Extracted	Date Analyzed
LEACHATE	OQ84A	03/16/09	03/16/09	03/17/09	03/23/09
Lab Control	LCS031709	N/A N/A	N/A	03/17/09	03/23/09

ARI Data Reporting Qualifiers

Effective 11/22/04

Inorganic Data

- U Indicates that the target analyte was not detected at the reported concentration
- * Duplicate RPD is not within established control limits
- B Reported value is less than the CRDL but \geq the Reporting Limit
- N Matrix Spike recovery not within established control limits
- NA Not Applicable, analyte not spiked
- H The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
- L Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

- U Indicates that the target analyte was not detected at the reported concentration
- * Flagged value is not within established control limits
- B Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
- J Estimated concentration when the value is less than ARI's established reporting limits
- D The spiked compound was not detected due to sample extract dilution
- NR Spiked compound recovery is not reported due to chromatographic interference
- E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.
- S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
- NA The flagged analyte was not analyzed for
- NS The flagged analyte was not spiked into the sample
- M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
- Y The analyte reporting limit is raised due to a positive chromatographic interference. The compound is not detected above the raised limit but may be present at or below the limit
- C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
- P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method SW8260B Sample ID: MB-031609 Page 1 of 1

METHOD BLANK

Lab Sample ID: MB-031609 LIMS ID: 09-6682 Matrix: Water Data Release Authorized: Reported: 03/18/09

Instrument/Analyst: NT10/JZ Date Analyzed: 03/16/09 14:52 QC Report No: OQ84-Parametrix, Inc. Project: NEWCASTLE LF 555-3747-003 Date Sampled: NA Date Received: NA

Sample Amount: 10.0 mL Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	2.5	< 2.5	υ
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	Ũ
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	υ
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	υ
100-41-4	Ethylbenzene	0.2	< 0.2	υ
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.2	< 0.2	U
108-38-3	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U

Reported in $\mu g/L$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	92.3%
d8-Toluene	100웅
Bromofluorobenzene	1098
d4-1,2-Dichlorobenzene	101%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method SW8260B Page 1 of 1

Sample ID: LEACHATE SAMPLE

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Lab Sample ID: OQ84A LIMS ID: 09-6682 Matrix: Water Data Release Authorized: Reported: 03/18/09

Instrument/Analyst: NT10/JZ Date Analyzed: 03/16/09 16:22 QC Report No: OQ84-Parametrix, Inc. Project: NEWCASTLE LF 555-3747-003 Date Sampled: 03/16/09 Date Received: 03/16/09

Sample Amount: 10.0 mL Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	υ
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	0.2	
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	2.5	2.8	
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	Ũ
79-01-6	Trichloroethene	0.2	< 0.2	Ũ
124-48-1	Dibromochloromethane	0.2	< 0.2	Ũ
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	Ũ
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	υ
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	1.6	
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.2	< 0.2	U
108-38-3	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U

Reported in μ g/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	89.4%
d8-Toluene	101%
Bromofluorobenzene	1118
d4-1,2-Dichlorobenzene	1018



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method SW8260B Page 1 of 2

Sample ID: LCS-031609 LAB CONTROL SAMPLE

Lab Sample ID: LCS-031609 LIMS ID: 09-6682 Matrix: Water Data Release Authorized: Reported: 03/18/09

Instrument/Analyst LCS: NT10/JZ LCSD: NT10/JZ Date Analyzed LCS: 03/16/09 13:52 LCSD: 03/16/09 14:22 QC Report No: OQ84-Parametrix, Inc. Project: NEWCASTLE LF 555-3747-003 Date Sampled: NA Date Received: NA

Sample Amount LCS: 10.0 mL LCSD: 10.0 mL Purge Volume LCS: 10.0 mL LCSD: 10.0 mL

Analyte LCS Added-LCS Recovery LCSD Added-LCS Recovery RPD Chloromethane 10.2 10.0 102% 10.0 10.0 100% 2.0% Bromomethane 10.0 10.0 100% 10.1 10.0 101% 1.0% Chloromethane 10.3 10.0 103% 10.1 10.0 101% 2.0% Methylene Chloride 9.4 10.0 99.2% 49.4 50.0 98.8% 0.4% Carbon Disulfide 11.1 10.0 111% 11.0 10.0 80.0% 1.1% 1.1-Dichloroethene 9.9 10.0 99.0% 9.8 10.0 96.0% 1.1% 1.1-Dichloroethene 9.9 10.0 99.0% 9.8 10.0 96.0% 1.1% 1.1-Dichloroethene 9.9 10.0 95.0% 9.4 10.0 96.0% 1.1% 1.1-Dichloroethane 9.3 10.0 95.0% 9.4 10.0 94.0% 1.1%			Spike	LCS		Spike	LCSD	
	Analyte	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	RPD
Bromomethane 10.0 10.0 100% 10.1 10.0 10.1 10.0 10.1 10.0 10.1 10.0 10.1 10.0 10.1 10.0 10.1 10.0 10.1 10.0 10.1 10.0 10.1 10.0 10.1 10.0 10.1 2.0% Methylene Chloride 9.4 10.0 94.0% 9.5 10.0 95.0% 1.1% Acetone 49.6 50.0 99.2% 49.4 50.0 98.8% 0.4% Carbon Disulfide 11.1 10.0 99.0% 9.8 10.0 95.0% 1.1% 1.1-Dichloroethane 9.9 10.0 99.0% 9.8 10.0 95.0% 1.1% 1.2-Dichloroethane 9.5 10.0 95.0% 9.5 10.0 95.0% 1.1% 1.2-Dichloroethane 8.8 10.0 95.0% 9.5 10.0 91.0% 3.4% 2.2-bichloroethane 9.5 10.0 95.0% 9.6 10.0	Chloromethane	10.2	10.0	102%	10.0	10.0	100%	2.0%
vinyl Chloride10.110.0101%10.010.010.0%1.0%Chloroethane10.310.094.0%9.510.095.0%1.1%Methylene Chloride9.410.094.0%9.510.095.0%1.1%Acetone49.650.099.2%49.450.098.8%0.4%Carbon Disulfide11.110.0111%11.00.10%0.9%1.0%1.1-Dichloroethane9.910.099.0%9.810.098.0%1.0%1.1-Dichloroethane9.910.099.0%9.810.098.0%1.0%1.1-Dichloroethane9.910.099.0%9.810.098.0%1.0%Chloroform9.310.095.0%9.510.095.0%1.1%1.2-Dichloroethane8.810.083.0%9.110.091.0%3.4%2-Butanone48.250.096.4%50.350.0101%4.3%1.1,1-Trichloroethane9.910.095.0%9.610.096.0%1.0%Vinyl Acetate9.510.095.0%9.610.096.0%1.1%1.2-Dichloropethane9.410.094.0%9.210.092.0%1.1%Cabon Tetrachloride10.210.0102%10.110.0101%1.0%Vinyl Acetate9.510.095.0%9.610.092.0%1.1%Trichloropoppene9.2 <td< td=""><td>Bromomethane</td><td>10.0</td><td>10.0</td><td>100%</td><td>10.1</td><td>10.0</td><td>101%</td><td>1.0%</td></td<>	Bromomethane	10.0	10.0	100%	10.1	10.0	101%	1.0%
Chloroethane 10.3 10.0 103% 10.1 10.0 101% 2.0% Methylene Chloride 9.4 10.0 94.0% 9.5 10.0 95.0% 1.1% Actone 49.6 50.0 99.2% 49.4 50.0 98.8% 0.4% Carbon Disulfide 11.1 10.0 111% 11.0 10.0 95.0% 1.1% 1.1-Dichloroethene 9.9 10.0 99.0% 9.8 10.0 95.0% 1.1% trans-1,2-Dichloroethene 9.5 10.0 95.0% 9.5 10.0 95.0% 0.0% Chloroform 9.3 10.0 95.0% 9.5 10.0 95.0% 0.0% 1,2-Dichloroethane 8.8 10.0 88.0% 9.1 10.0 91.0% 3.4% 2.sutanone 48.2 50.0 95.0% 9.6 10.0 96.0% 1.1% Carbon Tetrachloride 10.2 10.0 10.2 10.1 10.0 101% 1.0% Vinyl Acctate 9.4 10.0 94.0% 9.2 1	Vinyl Chloride	10.1	10.0	101%	10.0	10.0	100%	1.0%
Methylene Chloride 9.4 10.0 94.0% 9.5 10.0 95.0% 1.1% Acatone 49.6 50.0 99.2% 49.4 50.0 98.8% 0.4% Carbon Disulfide 11.1 10.0 111% 11.0 10.0 98.8% 0.4% 1,1-Dichloroethane 9.9 10.0 99.0% 9.8 10.0 96.0% 1.1% trans-1,2-Dichloroethane 9.9 10.0 99.0% 9.8 10.0 96.0% 1.1% cis-1,2-Dichloroethane 9.3 10.0 93.0% 9.4 10.0 91.0% 0.0% 1.1% 1,2-Dichloroethane 8.8 10.0 88.0% 9.1 10.0 91.0% 3.4% 2-Butanone 48.2 50.0 96.4% 50.3 50.0 10.1% 3.4% 1,2-Dichloroethane 9.9 10.0 92.0% 9.8 10.0 92.0% 1.0% Carbon Tetrachloride 10.2 10.0 92.0% 9.6 10.0 92.0% 2.2% J_2-Dichloropropane 9.2 10.0	Chloroethane	10.3	10.0	103%	10.1	10.0	101%	2.0%
Acctone 49.6 50.0 99.2% 49.4 50.0 98.8% 0.4% Carbon Disulfide 11.1 10.0 111% 11.0 10.0 99.0% 1.1-Dichloroethane 9.4 10.0 94.0% 9.5 10.0 98.0% 1.0% 1.1-Dichloroethane 9.4 10.0 99.0% 9.8 10.0 98.0% 1.0% cis-1,2-Dichloroethane 9.5 10.0 95.0% 9.5 10.0 96.0% 9.4 10.0 94.0% 1.1% 1/2-Dichloroethane 8.8 10.0 93.0% 9.4 10.0 94.0% 1.1% 1/2-Dichloroethane 8.8 10.0 93.0% 9.4 10.0 94.0% 1.1% 1/2-Dichloroethane 9.9 10.0 99.0% 9.8 10.0 94.0% 1.0% Carbon Tetrachloride 10.2 10.0 102% 10.1 10.0 101% 1.0% Vinyl Acetate 9.5 10.0 94.0% 9.3 10.0 93.0% 1.1% Trichloroethane 9.4 10.0	Methylene Chloride	9.4	10.0	94.0%	9.5	10.0	95.0%	1.1%
Carbon Disulfide11.110.011.%11.010.011.0%0.9%1,1-Dichloroethane9.910.099.0%9.810.098.0%1.0%1,1-Dichloroethane9.910.099.0%9.810.098.0%1.0%trans-1,2-Dichloroethane9.510.095.0%9.510.095.0%1.1%trans-1,2-Dichloroethane9.510.095.0%9.510.095.0%0.0%Chloroform9.310.093.0%9.410.094.0%1.1%1,2-Dichloroethane8.810.096.0%9.110.091.0%3.4%2-Butanone48.250.096.4%50.350.0101%4.3%1,1-Trichloroethane9.910.099.0%9.810.098.0%1.0%Vinyl Acetate9.510.095.0%9.610.096.0%1.0%Sromodichloromethane9.410.094.0%9.310.093.0%1.1%J_2-Dichloropropane9.210.092.0%9.110.091.0%6.2%Dibromochloromethane8.710.092.0%9.110.091.0%6.2%Dibromochloromethane8.710.092.0%9.110.091.0%1.1%Benzene9.410.094.0%9.310.093.0%1.1%Chloroethane8.710.092.0%9.110.091.0%1.1%L2-Choroethane </td <td>Acetone</td> <td>49.6</td> <td>50.0</td> <td>99.28</td> <td>49.4</td> <td>50.0</td> <td>98.8%</td> <td>0.4%</td>	Acetone	49.6	50.0	99.28	49.4	50.0	98.8%	0.4%
1,1-Dichloroethane9,910.099.0%9.810.098.0%1.0%1,1-Dichloroethane9.410.099.0%9.510.095.0%1.1%trans-1,2-Dichloroethane9.510.095.0%9.510.095.0%0.08chloroform9.310.093.0%9.410.094.0%1.1%1,2-Dichloroethane8.810.088.0%9.110.094.0%1.1%1,1-Trichloroethane8.810.080.0%9.810.098.0%1.0%2-Butanone48.250.096.4%50.350.0101%4.3%2-Butanone48.210.099.0%9.810.098.0%1.0%Carbon Tetrachloride10.210.0102%10.110.0101%1.0%Vinyl Acetate9.410.094.0%9.310.093.0%1.1%Bromodichloromethane9.410.094.0%9.310.093.0%1.1%Trichloroethane8.710.092.0%9.110.094.0%6.2%Dibchoropropane9.410.092.0%9.110.091.0%1.1%Trichloroethane8.710.093.0%9.310.093.0%1.1%Trichloroethane9.210.092.0%9.110.091.0%1.1%Trichloroethane8.710.093.0%9.110.091.0%2.2%2-Choroethylvinylether <t< td=""><td>Carbon Disulfide</td><td>11.1</td><td>10.0</td><td>1118</td><td>11.0</td><td>10.0</td><td>110%</td><td>0.9%</td></t<>	Carbon Disulfide	11.1	10.0	1118	11.0	10.0	110%	0.9%
1,1-Dichloroethane9.410.094.0%9.510.095.0%1.1%trans-1,2-Dichloroethene9.510.095.0%9.510.095.0%0.0%Chloroform9.310.095.0%9.510.095.0%0.0%Chloroethane8.810.083.0%9.410.094.0%1.1%1,2-Dichloroethane8.810.083.0%9.410.094.0%1.1%1,1-Trichloroethane9.910.096.4%50.350.0101%4.3%1,1,1-Trichloroethane9.910.095.0%9.610.096.0%1.0%Carbon Tetrachloride10.210.0102%10.110.0101%1.0%Vinyl Acetate9.510.095.0%9.610.096.0%1.0%Sromodichloromethane9.410.094.0%9.210.092.0%2.2%1,2-Dichloropropane9.410.094.0%9.310.093.0%1.1%cis-1,3-Dichloropropane9.210.092.0%9.110.091.0%1.1%Trichloroethane9.210.092.0%9.110.091.0%1.1%Dibromochloromethane9.210.092.0%9.110.091.0%1.1%Trichloroethane9.210.093.0%9.110.091.0%1.1%Pibromochloromethane9.210.093.0%9.110.091.0%2.2% <td< td=""><td>1,1-Dichloroethene</td><td>9.9</td><td>10.0</td><td>99.0%</td><td>9.8</td><td>10.0</td><td>98.0%</td><td>1.0%</td></td<>	1,1-Dichloroethene	9.9	10.0	99.0%	9.8	10.0	98.0%	1.0%
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1.1-Dichloroethane	9.4	10.0	94.0%	9.5	10.0	95.0%	1.1%
cis-1, 2-Dichloroethene9.510.095.0%9.510.095.0%9.510.095.0%0.0%Chloroform9.310.093.0%9.410.094.0%1.1%1,2-Dichloroethane8.810.088.0%9.110.091.0%3.4%2-Butanone48.250.096.4%50.350.0101%4.3%1,1.1-Trichloroethane9.910.099.0%9.810.098.0%1.0%Vinyl Acetate9.510.095.0%9.610.096.0%1.0%Bromodichloromethane9.410.094.0%9.210.092.0%2.2%1,2-Dichloropropane9.410.094.0%9.310.093.0%1.1%Trichloroethane8.710.087.0%9.010.091.0%3.4%1,2-Trichloroethane8.710.087.0%9.010.091.0%3.4%1,2-Trichloroethane9.210.092.0%9.110.091.0%1.1%Pibromochloromethane8.710.087.0%9.010.091.0%1.1%Enzene9.310.093.0%9.110.091.0%2.2%2-chloroethylvinylether10.210.0102%9.010.091.0%2.2%2-chloroethane9.310.093.0%9.110.091.0%2.2%2-chloroethane9.310.093.0%9.110.010.0%2.0%	trans-1.2-Dichloroethene	9.9	10.0	99.0%	9.8	10.0	98.0%	1.0%
Chloroform9.310.093.0%9.410.094.0%1.1%1,2-Dichloroethane8.810.088.0%9.110.091.0%3.4%2-Butanone48.250.096.4%50.350.0101%4.3%1,1-Trichloroethane9.910.099.0%9.810.098.0%1.0%Carbon Tetrachloride10.210.0102%10.110.0101%1.0%Vinyl Accatate9.510.095.0%9.610.092.0%2.2%1,2-Dichloropropane9.410.094.0%9.310.093.0%1.1%Cis-1,3-Dichloropropane9.410.094.0%9.310.091.0%1.1%Trichloroethane10.010.0100%9.410.094.0%6.2%Dibromochloromethane8.710.087.0%9.010.094.0%6.2%Dibromochloromethane9.210.092.0%9.110.091.0%1.1%Trichloroethane9.310.093.0%1.1%1.1%11.1%Benzene9.410.094.0%9.310.093.0%1.1%trans-1,3-Dichloropropene9.310.093.0%9.110.091.0%2.2%2-Chloroethylvinylether10.210.010.2%10.010.0%2.0%2-Chloroethylvinylether10.250.030.0%9.110.091.0%2.2%2-Hexanone46.5 <td>cis-1,2-Dichloroethene</td> <td>9.5</td> <td>10.0</td> <td>95.0%</td> <td>9.5</td> <td>10.0</td> <td>95.0%</td> <td>0.0%</td>	cis-1,2-Dichloroethene	9.5	10.0	95.0%	9.5	10.0	95.0%	0.0%
1,2-Dichloroethane8.810.088.0%9.110.091.0%3.4%2-Butanone48.250.096.4%50.350.0101%4.3%1,1,1-Trichloroethane9.910.099.0%9.810.098.0%1.0%Carbon Tetrachloride10.210.0102%10.110.0101%1.0%Vinyl Acetate9.510.095.0%9.610.096.0%1.0%Bromodichloromethane9.410.094.0%9.310.093.0%1.1%cis-1,3-Dichloropropane9.210.092.0%9.110.091.0%3.4%1,2-Dichloropropane9.210.092.0%9.110.091.0%3.4%cis-1,3-Dichloropropene9.210.092.0%9.110.091.0%3.4%1,1,2-Trichloroethane8.710.087.0%9.010.091.0%3.4%1,1,2-Trichloroptopene9.310.093.0%9.110.091.0%1.1%Benzene9.410.094.0%9.310.093.0%1.1%Choroethylvinylether10.210.0102%10.010.091.0%2.2%2-chloroethylvinylether10.210.0102%10.010.091.0%2.2%2-chloroethene9.010.093.0%9.110.091.0%2.0%2-chloroethylvinylether10.210.0102%10.010.010.0%2.0% <td>Chloroform</td> <td>9.3</td> <td>10.0</td> <td>93.0%</td> <td>9.4</td> <td>10.0</td> <td>94.0%</td> <td>1.1%</td>	Chloroform	9.3	10.0	93.0%	9.4	10.0	94.0%	1.1%
2-Butanone48.250.096.4%50.350.0101%4.3%1,1,1-Trichloroethane9.910.099.0%9.810.096.0%1.0%Carbon Tetrachloride10.210.0102%10.110.010.0%1.0%Carbon Tetrachloride9.510.095.0%9.610.096.0%1.0%Bromodichloromethane9.410.094.0%9.210.092.0%2.2%1,2-Dichloropropane9.210.092.0%9.110.091.0%1.1%Trichloroethane10.010.0100%9.410.094.0%9.210.092.0%2.2%Dibromochloromethane9.210.092.0%9.110.091.0%1.1%1.1%Trichloroethane8.710.087.0%9.010.090.0%3.4%1,1,2-Trichloroptopene9.210.092.0%9.110.091.0%1.1%Benzene9.410.094.0%9.310.093.0%1.1%trans-1,3-Dichloropropene9.310.093.0%9.110.091.0%2.2%2-Chloroethylvinylether10.210.0102%10.010.010.0%2.0%Bromoform8.510.085.0%8.810.088.0%3.5%4-Methyl-2-Pentanone (MIBK)51.250.0102%50.250.0100%2.0%1,1,2,2-Tetrachloroethane9.210.092.0% <td>1.2-Dichloroethane</td> <td>8.8</td> <td>10.0</td> <td>88.0%</td> <td>9.1</td> <td>10.0</td> <td>91.0%</td> <td>3.4%</td>	1.2-Dichloroethane	8.8	10.0	88.0%	9.1	10.0	91.0%	3.4%
1,1,1-Trichloroethane9.910.099.0%9.810.098.0%1.0%Carbon Tetrachloride10.210.0102%10.110.0101%1.0%Vinyl Acetate9.510.095.0%9.610.096.0%1.0%Bromodichloromethane9.410.094.0%9.210.092.0%2.2%1,2-Dichloropropane9.410.094.0%9.310.093.0%1.1%cis-1,3-Dichloropropene9.210.092.0%9.110.094.0%6.2%Dibromochloromethane10.010.010.0%87.0%9.010.094.0%6.2%Dibromochloromethane9.210.092.0%9.110.094.0%6.2%Dibromochloromethane9.210.092.0%9.110.094.0%6.2%Dibromochloromethane9.210.092.0%9.110.091.0%1.1%Benzene9.410.094.0%9.310.093.0%1.1%Erase1,3-Dichloropropene9.310.093.0%9.110.091.0%2.2%2-Chloroethylvinylether10.210.0102%10.010.0%2.0%2-chloroethene9.310.093.0%9.110.091.0%2.0%2-chloroethene9.310.010.2%50.250.0100%2.0%2-chloroethene9.210.085.0%8.810.088.0%3.5% <td>2-Butanone</td> <td>48.2</td> <td>50.0</td> <td>96.4%</td> <td>50.3</td> <td>50.0</td> <td>101%</td> <td>4.3%</td>	2-Butanone	48.2	50.0	96.4%	50.3	50.0	101%	4.3%
Carbon Tetrachloride10.210.0102%10.110.0101%1.0%Vinyl Acetate9.510.095.0%9.610.096.0%1.0%Bromodichloromethane9.410.094.0%9.210.092.0%2.2%cis-1,3-Dichloropropane9.410.094.0%9.310.093.0%1.1%cis-1,3-Dichloropropane9.210.092.0%9.110.091.0%1.1%Trichloroethene10.010.0100%9.410.094.0%6.2%Dibromochloromethane8.710.087.0%9.010.090.0%3.4%1,1,2-Trichloroethane9.210.092.0%9.110.091.0%1.1%Benzene9.410.094.0%9.310.093.0%1.1%Erans-1,3-Dichloropropene9.310.093.0%9.110.091.0%2.2%2-Chloroethylvinylether10.210.0102%10.010.0100%2.0%2-chloroethone8.510.085.0%8.810.088.0%3.5%4-Methyl-2-Pentanone (MIBK)51.250.0102%50.250.0100%2.0%2-Hexanone46.550.093.0%47.950.095.8%3.0%1,1,2-Tetrachloroethane9.210.092.0%9.310.093.0%1.1%1,1,2,2-Tetrachloroethane9.210.092.0%9.310.093.0%<	1.1.1-Trichloroethane	9.9	10.0	99.0%	9.8	10.0	98.0%	1.0%
Vinyl Acetate9.510.095.0%9.610.096.0%1.0%Bromodichloromethane9.410.094.0%9.210.092.0%2.2%1,2-Dichloropropane9.410.094.0%9.310.093.0%1.1%cis-1,3-Dichloropropene9.210.092.0%9.110.091.0%1.1%Trichloroethene10.010.0100%9.410.094.0%6.2%Dibromochloromethane8.710.087.0%9.010.090.0%3.4%1,1,2-Trichloroethane9.210.092.0%9.110.091.0%1.1%Benzene9.410.094.0%9.310.093.0%1.1%trans-1,3-Dichloropropene9.310.093.0%9.110.091.0%2.2%2-Chloroethylvinylether10.210.0102%10.010.0%2.0%Bromoform8.510.085.0%8.810.088.0%3.5%4-Methyl-2-Pentanone (MIBK)51.250.0102%50.250.0100%2.0%2-Hexanone9.010.090.0%9.110.091.0%1.1%trachloroethane9.010.090.0%9.110.091.0%1.1%1,1,2,2-Tetrachloroethane9.210.092.0%9.110.091.0%1.1%Chlorobenzene9.210.092.0%9.310.093.0%1.1%Chlorobenzene	Carbon Tetrachloride	10.2	10.0	102%	10.1	10.0	101%	1.0%
Bromodichloromethane9.410.094.0%9.210.092.0%2.2%1,2-Dichloropropane9.410.094.0%9.310.093.0%1.1%cis-1,3-Dichloropropene9.210.092.0%9.110.091.0%1.1%Trichloroethene10.010.0100%9.410.094.0%6.2%Dibromochloromethane8.710.087.0%9.010.090.0%3.4%1,1,2-Trichloroethane9.210.092.0%9.110.091.0%1.1%Benzene9.410.094.0%9.310.093.0%1.1%trans-1,3-Dichloropropene9.310.093.0%9.110.091.0%1.1%trans-1,3-Dichloropropene9.310.093.0%9.110.091.0%2.2%2-Chloroethylvinylether10.210.0102%10.010.0100%2.0%Bromoform8.510.085.0%8.810.088.0%3.5%4-Methyl-2-Pentanone (MIBK)51.250.0102%50.250.0100%2.0%2-Hexanone46.550.093.0%9.110.091.0%1.1%1,1,2,2-Tetrachloroethane8.810.088.0%9.010.091.0%1.1%1,1,2,2-Tetrachloroethane9.210.092.0%9.310.093.0%2.2%Toluene9.210.092.0%9.310.093.0%2.2% </td <td>Vinvl Acetate</td> <td>9.5</td> <td>10.0</td> <td>95.0%</td> <td>9.6</td> <td>10.0</td> <td>96.0%</td> <td>1.0%</td>	Vinvl Acetate	9.5	10.0	95.0%	9.6	10.0	96.0%	1.0%
1,2-Dichloropropane9.410.094.0%9.310.093.0%1.1%cis-1,3-Dichloropropene9.210.092.0%9.110.091.0%1.1%Trichloroethene10.010.010.0%9.410.094.0%6.2%Dibromochloromethane8.710.087.0%9.010.090.0%3.4%1,1,2-Trichloroethane9.210.092.0%9.110.091.0%1.1%Benzene9.410.094.0%9.310.093.0%1.1%Lrans-1,3-Dichloropropene9.310.093.0%9.110.091.0%1.1%2-Chloroethylvinylether10.210.0102%10.010.091.0%2.2%2-Chloroethylvinylether10.210.0102%10.010.088.0%3.5%4-Methyl-2-Pentanone (MIBK)51.250.0102%50.250.0100%2.0%2-Hexanone46.550.093.0%9.110.091.0%2.1%Tetrachloroethene9.010.090.0%9.110.091.0%2.2%Toluene9.210.092.0%9.310.093.0%1.1%Chlorobenzene9.210.092.0%9.310.093.0%2.2%Toluene9.210.092.0%9.310.093.0%2.2%Chlorobenzene9.210.092.0%9.310.093.0%2.2%Styrene	Bromodichloromethane	9.4	10.0	94.0%	9.2	10.0	92.0%	2.2%
1.3-Dichloropropene9.210.092.0%9.110.091.0%1.1%Trichloroethene10.010.0100%9.410.094.0%6.2%Dibromochloromethane8.710.087.0%9.010.090.0%3.4%1,1,2-Trichloroethane9.210.092.0%9.110.091.0%1.1%Benzene9.410.094.0%9.310.093.0%1.1%trans-1,3-Dichloropropene9.310.093.0%9.110.091.0%2.2%2-Chloroethylvinylether10.210.0102%10.010.0100%2.0%Bromoform8.510.085.0%8.810.088.0%3.5%4-Methyl-2-Pentanone (MIBK)51.250.0102%50.250.0100%2.0%2-Hexanone46.550.093.0%9.110.091.0%1.1%1,1,2,2-Tetrachloroethane9.010.090.0%9.110.091.0%1.1%1,1,2,2-Tetrachloroethane9.210.092.0%9.210.093.0%1.1%1,1,2,2-Tetrachloroethane9.210.092.0%9.310.093.0%2.2%Chlorobenzene9.210.092.0%9.210.093.0%2.2%Chlorobenzene9.210.092.0%9.210.093.0%2.2%Styrene9.210.092.0%9.410.093.0%2.2%T	1.2-Dichloropropane	9.4	10.0	94.0음	9.3	10.0	93.0%	1.1%
Trichloroethene10.010.0100%9.410.094.0%6.2%Dibromochloromethane8.710.087.0%9.010.090.0%3.4%1,1,2-Trichloroethane9.210.092.0%9.110.091.0%1.1%Benzene9.410.094.0%9.310.093.0%1.1%trans-1,3-Dichloropropene9.310.093.0%9.110.091.0%2.2%2-Chloroethylvinylether10.210.0102%10.010.0100%2.0%Bromoform8.510.085.0%8.810.088.0%3.5%4-Methyl-2-Pentanone (MIBK)51.250.0102%50.250.0100%2.0%2-Hexanone46.550.093.0%47.950.095.8%3.0%Toluene9.010.090.0%9.110.091.0%1.1%1,1,2,2-Tetrachloroethane8.810.088.0%9.010.090.0%2.2%Toluene9.210.092.0%9.310.093.0%1.1%Chlorobenzene9.210.092.0%9.310.093.0%2.2%Styrene9.210.092.0%9.410.093.0%2.2%Trichlorofluoromethane9.910.092.0%9.410.093.0%2.2%Trichlorofluoromethane9.910.092.0%9.410.094.0%2.2%Trichlorofluoromethane </td <td>cis-1.3-Dichloropropene</td> <td>9.2</td> <td>10.0</td> <td>92.0%</td> <td>9.1</td> <td>10.0</td> <td>91.0%</td> <td>1.1%</td>	cis-1.3-Dichloropropene	9.2	10.0	92.0%	9.1	10.0	91.0%	1.1%
Dibromochloromethane8.710.087.0%9.010.090.0%3.4%1,1,2-Trichloroethane9.210.092.0%9.110.091.0%1.1%Benzene9.410.094.0%9.310.093.0%1.1%trans-1,3-Dichloropropene9.310.093.0%9.110.091.0%2.2%2-Chloroethylvinylether10.210.0102%10.010.091.0%2.0%Bromoform8.510.085.0%8.810.088.0%3.5%4-Methyl-2-Pentanone (MIBK)51.250.0102%50.250.0100%2.0%2-Hexanone46.550.093.0%9.110.091.0%1.1%1,1,2,2-Tetrachloroethane9.010.090.0%9.110.091.0%1.1%1,1,2,2-Tetrachloroethane9.210.092.0%9.310.093.0%1.1%Chlorobenzene9.210.092.0%9.310.093.0%2.2%Styrene9.210.092.0%9.310.093.0%2.2%Styrene9.210.092.0%9.410.093.0%2.2%Trichlorofluoromethane9.910.091.0%9.310.093.0%2.2%Trichlorofluoromethane9.910.099.0%10.010.0%1.0%1.0%1,1,2-Trichloro-1,2,2-trifluoroetha11.010.011.0%11.310.011.3%2.7%<	Trichloroethene	10.0	10.0	100%	9.4	10.0	94.0%	6.2%
1.1, 2-Trichloroethane9.210.092.0%9.110.091.0%1.1%Benzene9.410.094.0%9.310.093.0%1.1%trans-1, 3-Dichloropropene9.310.093.0%9.110.091.0%2.2%2-Chloroethylvinylether10.210.0102%10.010.0100%2.0%Bromoform8.510.085.0%8.810.088.0%3.5%4-Methyl-2-Pentanone (MIBK)51.250.0102%50.250.095.8%3.0%2-Hexanone46.550.093.0%9.110.091.0%1.1%1,1,2,2-Tetrachloroethane9.010.090.0%9.110.091.0%1.1%1,1,2,2-Tetrachloroethane9.210.092.0%9.310.093.0%1.1%Chlorobenzene9.210.092.0%9.310.093.0%1.1%Ethylbenzene9.110.091.0%9.310.093.0%2.2%Styrene9.210.092.0%9.310.093.0%2.2%Trichlorofluoromethane9.910.091.0%9.310.093.0%2.2%Trichlorofluoromethane9.910.099.0%10.010.011.0%1.1%1,1,2-Trichloro-1,2,2-trifluoroetha11.010.0110%11.310.0113%2.7%m nextlene9.910.093.0%10.010.0%1.6%1.6%	Dibromochloromethane	8.7	10.0	87.0%	9.0	10.0	90.0%	3.4%
Benzene9.410.094.0%9.310.093.0%1.1%trans-1,3-Dichloropropene9.310.093.0%9.110.091.0%2.2%2-Chloroethylvinylether10.210.0102%10.010.0100%2.0%Bromoform8.510.085.0%8.810.088.0%3.5%4-Methyl-2-Pentanone (MIBK)51.250.0102%50.250.0100%2.0%2-Hexanone46.550.093.0%47.950.095.8%3.0%Tetrachloroethene9.010.090.0%9.110.091.0%2.2%1,1,2,2-Tetrachloroethane8.810.088.0%9.010.091.0%2.2%Chlorobenzene9.210.092.0%9.310.093.0%1.1%Chlorobenzene9.110.091.0%93.0%1.1%Styrene9.210.092.0%9.310.093.0%2.2%Styrene9.210.092.0%9.410.093.0%2.2%Trichlorofluoromethane9.910.092.0%9.410.094.0%2.2%Trichlorofluoromethane9.910.099.0%10.010.0%1.1%1,1,2-Trichloro-1,2,2-trifluoroetha11.010.0110%11.310.0113%2.7%no93.5%19.020.095.0%1.6%16%16%16%	1.1.2-Trichloroethane	9.2	10.0	92.0%	9.1	10.0	91.0%	1.1%
Linas-1,3-Dichloropropene9.310.093.0%9.110.091.0%2.2%2-Chloroethylvinylether10.210.0102%10.010.0100%2.0%Bromoform8.510.085.0%8.810.088.0%3.5%4-Methyl-2-Pentanone (MIBK)51.250.0102%50.250.0100%2.0%2-Hexanone46.550.093.0%47.950.095.8%3.0%Tetrachloroethene9.010.090.0%9.110.091.0%2.2%Toluene9.210.092.0%9.310.093.0%1.1%Chlorobenzene9.210.092.0%9.310.093.0%1.1%Ethylbenzene9.110.091.0%9.210.092.0%9.210.0Styrene9.210.092.0%9.310.093.0%2.2%Trichlorofluoromethane9.910.099.0%10.010.010.0%1.0%1,1,2-Trichloro-1,2,2-trifluoroetha11.010.0110%11.310.0113%2.7%m p-Xylepe18.720.093.5%19.020.095.0%1.6%	Benzene	9.4	10.0	94.0%	9.3	10.0	93.0%	1.1%
2-Chloroethylvinylether10.210.0102%10.010.0100%2.0%Bromoform8.510.085.0%8.810.088.0%3.5%4-Methyl-2-Pentanone (MIBK)51.250.0102%50.250.0100%2.0%2-Hexanone46.550.093.0%47.950.095.8%3.0%Tetrachloroethene9.010.090.0%9.110.091.0%1.1%1,1,2,2-Tetrachloroethane8.810.088.0%9.010.090.0%2.2%Toluene9.210.092.0%9.310.093.0%1.1%Chlorobenzene9.210.092.0%9.210.093.0%2.2%Styrene9.110.091.0%9.310.093.0%2.2%Trichlorofluoromethane9.910.092.0%9.410.093.0%2.2%Trichloro-1,2,2-trifluoroetha11.010.0110%11.310.0113%2.7%m p-Xylepe18.720.093.5%19.020.095.0%1.6%	trans-1.3-Dichloropropene	9.3	10.0	93.0%	9.1	10.0	91.0%	2.2%
Bromoform8.510.085.0%8.810.088.0%3.5%4-Methyl-2-Pentanone (MIBK)51.250.0102%50.250.0100%2.0%2-Hexanone46.550.093.0%47.950.095.8%3.0%Tetrachloroethene9.010.090.0%9.110.091.0%1.1%1,1,2,2-Tetrachloroethane8.810.088.0%9.010.090.0%2.2%Toluene9.210.092.0%9.310.093.0%1.1%Chlorobenzene9.210.092.0%9.210.092.0%2.2%Styrene9.110.091.0%9.310.093.0%2.2%Trichlorofluoromethane9.910.092.0%9.410.093.0%2.2%Trichloro-1,2,2-trifluoroetha11.010.0110%11.310.0113%2.7%m p-Xylepe18.720.093.5%19.020.095.0%1.6%	2-Chloroethylvinylether	10.2	10.0	102%	10.0	10.0	100%	2.0%
A-Methyl-2-Pentanone (MIBK)51.250.0102%50.250.0100%2.0%2-Hexanone46.550.093.0%47.950.095.8%3.0%Tetrachloroethene9.010.090.0%9.110.091.0%1.1%1,1,2,2-Tetrachloroethane8.810.088.0%9.010.090.0%2.2%Toluene9.210.092.0%9.310.093.0%1.1%Chlorobenzene9.210.092.0%9.210.092.0%9.2Ethylbenzene9.110.091.0%9.310.093.0%2.2%Styrene9.210.092.0%9.410.093.0%2.2%Trichlorofluoromethane9.910.099.0%10.010.010.0%1.0%1,1,2-Trichloro-1,2,2-trifluoroetha11.010.0110%11.310.0113%2.7%m p-Xylepe18.720.093.5%19.020.095.0%1.6%	Bromoform	8.5	10.0	85.0%	8.8	10.0	88.0%	3.5%
2-Hexanone46.550.093.0%47.950.095.8%3.0%Tetrachloroethene9.010.090.0%9.110.091.0%1.1%1,1,2,2-Tetrachloroethane8.810.088.0%9.010.090.0%2.2%Toluene9.210.092.0%9.310.093.0%1.1%Chlorobenzene9.210.092.0%9.210.092.0%0.0%Ethylbenzene9.110.091.0%9.310.093.0%2.2%Styrene9.210.092.0%9.410.093.0%2.2%Trichlorofluoromethane9.910.099.0%10.010.010%1.0%1,1,2-Trichloro-1,2,2-trifluoroetha11.010.0110%11.310.0113%2.7%m p-Xylene18.720.093.5%19.020.095.0%1.6%	4-Methyl-2-Pentanone (MIBK)	51.2	50.0	102%	50.2	50.0	100%	2.0%
Tetrachloroethene 9.0 10.0 90.0% 9.1 10.0 91.0% 1.1% 1,1,2,2-Tetrachloroethane 8.8 10.0 88.0% 9.0 10.0 90.0% 2.2% Toluene 9.2 10.0 92.0% 9.3 10.0 93.0% 1.1% Chlorobenzene 9.2 10.0 92.0% 9.2 10.0 92.0% 0.0% Ethylbenzene 9.1 10.0 91.0% 9.3 10.0 93.0% 2.2% Styrene 9.2 10.0 92.0% 9.3 10.0 93.0% 2.2% Trichlorofluoromethane 9.9 10.0 92.0% 9.4 10.0 94.0% 2.2% 1,1,2-Trichloro-1,2,2-trifluoroetha 11.0 10.0 110% 11.3 10.0 113% 2.7% m p-Xylene 18.7 20.0 93.5% 19.0 20.0 95.0% 1.6%	2-Hexanone	46.5	50.0	93.0%	47.9	50.0	95.8%	3.0%
1,1,2,2-Tetrachloroethane8.810.088.0%9.010.090.0%2.2%Toluene9.210.092.0%9.310.093.0%1.1%Chlorobenzene9.210.092.0%9.210.092.0%0.0%Ethylbenzene9.110.091.0%9.310.093.0%2.2%Styrene9.210.092.0%9.410.094.0%2.2%Trichlorofluoromethane9.910.099.0%10.010.0100%1.0%1,1,2-Trichloro-1,2,2-trifluoroetha11.010.0110%11.310.0113%2.7%m p-Xylene18.720.093.5%19.020.095.0%1.6%	Tetrachloroethene	9.0	10.0	90.0%	9.1	10.0	91.0%	1.1%
Toluene9.210.092.0%9.310.093.0%1.1%Chlorobenzene9.210.092.0%9.210.092.0%0.0%Ethylbenzene9.110.091.0%9.310.093.0%2.2%Styrene9.210.092.0%9.410.094.0%2.2%Trichlorofluoromethane9.910.099.0%10.010.0100%1.0%1,1,2-Trichloro-1,2,2-trifluoroetha11.010.0110%11.310.0113%2.7%m p-Xylene18.720.093.5%19.020.095.0%1.6%	1.1.2.2-Tetrachloroethane	8.8	10.0	88.0%	9.0	10.0	90.0%	2.2%
Chlorobenzene9.210.092.0%9.210.092.0%0.0%Ethylbenzene9.110.091.0%9.310.093.0%2.2%Styrene9.210.092.0%9.410.094.0%2.2%Trichlorofluoromethane9.910.099.0%10.010.0100%1.0%1,1,2-Trichloro-1,2,2-trifluoroetha11.010.0110%11.310.0113%2.7%m p-Xylene18.720.093.5%19.020.095.0%1.6%	Toluene	9.2	10.0	92.0%	9.3	10.0	93.0%	1.1%
Ethylbenzene9.110.091.0%9.310.093.0%2.2%Styrene9.210.092.0%9.410.094.0%2.2%Trichlorofluoromethane9.910.099.0%10.010.0100%1.0%1,1,2-Trichloro-1,2,2-trifluoroetha11.010.0110%11.310.0113%2.7%m p-Xylene18.720.093.5%19.020.095.0%1.6%	Chlorobenzene	9.2	10.0	92.0%	9.2	10.0	92.0%	0.0%
Styrene 9.2 10.0 92.0% 9.4 10.0 94.0% 2.2% Trichlorofluoromethane 9.9 10.0 99.0% 10.0 10.0% 1.0% 1,1,2-Trichloro-1,2,2-trifluoroetha 11.0 10.0 110% 11.3 10.0 113% 2.7% m p-Xylene 18.7 20.0 93.5% 19.0 20.0 95.0% 1.6%	Ethylbenzene	9.1	10.0	91.0%	9.3	10.0	93.0%	2.2%
Trichlorofluoromethane 9.9 10.0 99.0% 10.0 10.0% 1.0% 1,1,2-Trichloro-1,2,2-trifluoroetha 11.0 10.0 110% 11.3 10.0 113% 2.7% m p-Xylene 18.7 20.0 93.5% 19.0 20.0 95.0% 1.6%	Styrene	9.2	10.0	92.0%	9.4	10.0	94.0%	2.2%
1,1,2-Trichloro-1,2,2-trifluoroetha 11.0 10.0 110% 11.3 10.0 113% 2.7% mp-Xylene 18.7 20.0 93.5% 19.0 20.0 95.0% 1.6%	Trichlorofluoromethane	9.9	10.0	99.0%	10.0	10.0	100%	1.0%
$\begin{array}{c} \text{m p-Sylene} \\ 18.7 \\ 20.0 \\ 93.5 \\ 19.0 \\ 20.0 \\ 95.0 \\ 1.6 \\ 1$	1 1 2-Trichloro-1, 2, 2-trifluoroetha	11.0	10.0	110%	11.3	10.0	113%	2.7%
	m n-Xvlene	18.7	20.0	93.5%	19.0	20.0	95.0%	1.6%
o-Xvlene 9.4 10.0 94.0% 9.6 10.0 96.0% 2.1%	o-Xvlene	9.4	10.0	94.0%	9.6	10.0	96.0%	2.1%

Reported in $\mu g/L$ (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

LCS LCSD



ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B Page 2 of 2 Sample ID: LCS-031609 LAB CONTROL SAMPLE

Lab Sample ID: LCS-031609 LIMS ID: 09-6682 Matrix: Water QC Report No: OQ84-Parametrix, Inc. Project: NEWCASTLE LF 555-3747-003

Analyte	Spir LCS Adde	ce 1-LCS Rec	LCS overy	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
	d4-1,2-Dichloroethane	98.1%	89.0%				
	d8-Toluene Bromofluorobenzene d4-1,2-Dichlorobenzene	103% 102% 99.6%	98.7% 101% 98.9%				



Matrix: Water Data Release Authorized: Reported: 03/31/09

Project: NEWCASTLE LF Event: 555-3747-003 Date Sampled: NA Date Received: NA

Analyte	Method	Date	Units	Blank
Total Dissolved Solids	EPA 160.1	03/23/09	mg/L	< 5.0 U
Chloride	EPA 325.2	03/27/09	mg/L	< 1.0 U
N-Ammonia	EPA 350.1M	03/30/09	mg-N/L	< 0.010 U
N-Nitrite	EPA 353.2	03/18/09	mg-N/L	< 0.010 U
Nitrate + Nitrite	EPA 353.2	03/18/09	mg-N/L	< 0.010 U
Sulfate	EPA 375.2	03/19/09	mg/L	< 2.0 U
Chemical Oxygen Demand	EPA 410.4	03/18/09	mg/L	< 5.00 U
Total Organic Carbon	EPA 415.1	03/19/09	mg/L	< 1.50 U



Matrix: Water Data Release Authorized Reported: 03/31/09 Project: NEWCASTLE LF Event: 555-3747-003 Date Sampled: 03/16/09 Date Received: 03/16/09

Client ID: LEACHATE ARI ID: 09-6682 OQ84A

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	03/23/09 032309#1	EPA 160.1	mg/L	13.3	953
Chloride	03/27/09 032709#1	EPA 325.2	mg/L	5.0	21.2
N-Ammonia	03/30/09 033009#1	EPA 350.1M	mg-N/L	0.050	4.86
N-Nitrate	03/18/09	Calculated	mg-N/L	0.010	0.428
N-Nitrite	03/18/09 031809#1	EPA 353.2	mg-N/L	0.010	< 0.010 U
Nitrate + Nitrite	03/18/09 031809#1	EPA 353.2	mg-N/L	0.010	0.428
Sulfate	03/19/09 031909#1	EPA 375.2	mg/L	10.0	77.9
Chemical Oxygen Demand	03/18/09 031809#1	EPA 410.4	mg/L	5.00	48.3
Total Organic Carbon	03/19/09 031909#1	EPA 415.1	mg/L	6.00	19.1

RL Analytical reporting limit

U Undetected at reported detection limit



Matrix: Water Data Release Authorized Reported: 03/31/09 Project: NEWCASTLE LF Event: 555-3747-003 Date Sampled: 03/16/09 Date Received: 03/16/09

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD			
ARI ID: OQ84A Client ID: LEACHATE									
Total Dissolved Solids	EPA 160.1	03/23/09	mg/L	953	905	5.2%			
N-Ammonia	EPA 350.1M	03/30/09	mg-N/L	4.86	4.85	0.2%			
N-Nitrite	EPA 353.2	03/18/09	mg-N/L	< 0.010	< 0.010	NA			
Nitrate + Nitrite	EPA 353.2	03/18/09	mg-N/L	0.428	0.428	0.0%			
Sulfate	EPA 375.2	03/19/09	mg/L	77.9	77.4	0.6%			
Total Organic Carbon	EPA 415.1	03/19/09	mg/L	19.1	18.3	4.3%			





Project: NEWCASTLE LF Event: 555-3747-003 Date Sampled: 03/16/09 Date Received: 03/16/09

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: 0Q84A Client	ID: LEACHAI	E	· · · · · · · · · · · · · · · · · · ·				
N-Ammonia	EPA 350.1M	1 03/30/09	mg-N/L	4.86	10.1	5.00	104.8%
N-Nitrite	EPA 353.2	03/18/09	mg-N/L	< 0.010	0.511	0.500	102.2%
Nitrate + Nitrite	EPA 353.2	03/18/09	mg-N/L	0.428	0.925	0.500	99.48
Sulfate	EPA 375.2	03/19/09	mg/L	77.9	307	200	114.6%
Total Organic Carbon	EPA 415.1	03/19/09	mg/L	19.1	106	80.0	108.6%



Matrix: Water Data Release Authorized: Reported: 03/31/09 Project: NEWCASTLE LF Event: 555-3747-003 Date Sampled: NA Date Received: NA

Analyte	Method	Date	Units	LCS	Spike Added	Recovery
Total Dissolved Solids	EPA 160.1	03/23/09	mg/L	477	500	95.4%



Matrix: Water Data Release Authorized: Reported: 03/31/09

Project: NEWCASTLE LF Event: 555-3747-003 Date Sampled: NA Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Chloride ERA #38084	EPA 325.2	03/27/09	mg/L	5.4	5.0	108.0%
N-Ammonia ERA #15125	EPA 350.1M	03/30/09	mg-N/L	0.511	0.500	102.2%
N-Nitrite ERA #23034	EPA 353.2	03/18/09	mg-N/L	0.504	0.500	100.8%
Nitrate + Nitrite ERA #20034	EPA 353.2	03/18/09	mg-N/L	0.531	0.500	106.2%
Sulfate ERA #37065	EPA 375.2	03/19/09	mg/L	26.7	25.0	106.8%
Chemical Oxygen Demand Thermo Orion #I01	EPA 410.4	03/18/09	mg/L	85.7	90.0	95.2%
Total Organic Carbon ERA #0528-08-02	EPA 415.1	03/19/09	mg/L	20.4	20.0	102.0%



INORGANICS ANALYSIS DATA SHEET TOTAL METALS Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: OQ84MB LIMS ID: 09-6682 Matrix: Water Data Release Authorized Reported: 03/26/09 QC Report No: OQ84-Parametrix, Inc. Project: NEWCASTLE LF 555-3747-003 Date Sampled: NA Date Received: NA

Prep	Prep	Analysis	Analysis					
Meth	Date	Method	Date	CAS Number	Analyte	RL	µg/L	Q
		2041	00/01/00	7440 26 0	70 I '	0	2	77
3005A	03/17/09	7041	03/24/09	/440-36-0	Antimony	2	Ζ	U
7060A	03/17/09	7060A	03/24/09	7440-38-2	Arsenic	1	1	U
3010A	03/17/09	6010B	03/24/09	7440-41-7	Beryllium	1	1	U
3010A	03/17/09	6010B	03/24/09	7440-43-9	Cadmium	2	2	U
3010A	03/17/09	6010B	03/24/09	7440-70-2	Calcium	50	50	U
3010A	03/17/09	6010B	03/24/09	7440-47-3	Chromium	5	5	U
3010A	03/17/09	6010B	03/24/09	7440-50-8	Copper	2	2	U
3010A	03/17/09	6010B	03/24/09	7439-89-6	Iron	50	50	U
3020A	03/17/09	7421	03/23/09	7439-92-1	Lead	1	1	U
3010A	03/17/09	6010B	03/24/09	7439-95-4	Magnesium	50	50	U
3010A	03/17/09	6010B	03/24/09	7439-96-5	Manganese	1	1	U
7470A	03/17/09	7470A	03/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	03/17/09	6010B	03/24/09	7440-02-0	Nickel	10	10	U
7740	03/17/09	7740	03/25/09	7782-49-2	Selenium	2	2	U
3010A	03/17/09	6010B	03/24/09	7440-22-4	Silver	3	3	U
3020A	03/17/09	7841	03/23/09	7440-28-0	Thallium	1	1	U
3010A	03/17/09	6010B	03/24/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL RL-Reporting Limit

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INORGANICS ANALYSIS DATA SHEET TOTAL METALS Page <u>1</u> of 1

Sample ID: LEACHATE SAMPLE

Lab Sample ID: OQ84A LIMS ID: 09-6682 Matrix: Water Data Release Authorized Reported: 03/26/09 QC Report No: OQ84-Parametrix, Inc. Project: NEWCASTLE LF 555-3747-003 Date Sampled: 03/16/09 Date Received: 03/16/09

Prep	Prep	Analysis	Analysis					
Meth	Date	Method	Date	CAS Number	Analyte	RL	µg/L	Q
00057	00/17/00	7041	00/04/00	7440 26 0		2	0	TT
3005A	03/1//09	7041	03/24/09	7440-36-0	Antimony	2	2	0
7060A	03/17/09	7060A	03/24/09	7440-38-2	Arsenic	1	1	U
3010A	03/17/09	6010B	03/24/09	7440-41-7	Beryllium	1	1	U
3010A	03/17/09	6010B	03/24/09	7440-43-9	Cadmium	2	2	U
3010A	03/17/09	6010B	03/24/09	7440-70-2	Calcium	50	239,000	
3010A	03/17/09	6010B	03/24/09	7440-47-3	Chromium	5	5	Ũ
3010A	03/17/09	6010B	03/24/09	7440-50-8	Copper	2	3	
3010A	03/17/09	6010B	03/24/09	7439-89-6	Iron	50	3,290	
3020A	03/17/09	7421	03/23/09	7439-92-1	Lead	1	2	
3010A	03/17/09	6010B	03/24/09	7439-95-4	Magnesium	50	39,900	
3010A	03/17/09	6010B	03/24/09	7439-96-5	Manganese	1	1,000	
7470A	03/17/09	7470A	03/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	03/17/09	6010B	03/24/09	7440-02-0	Nickel	10	10	U
7740	03/17/09	7740	03/25/09	7782-49-2	Selenium	2	2	U
3010A	03/17/09	6010B	03/24/09	7440-22-4	Silver	3	3	U
3020A	03/17/09	7841	03/23/09	7440-28-0	Thallium	1	1	U
3010A	03/17/09	6010B	03/24/09	7440-66-6	Zinc	10	10	U

Calculated Hardness (mg-CaCO3/L): 760

U-Analyte undetected at given RL RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET TOTAL METALS Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: OQ84LCS LIMS ID: 09-6682 Matrix: Water Data Release Authorized: Reported: 03/26/09 QC Report No: OQ84-Parametrix, Inc. Project: NEWCASTLE LF 555-3747-003 Date Sampled: NA Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

	Analysis	Spike	Spike	8	
Analyte	Method	Found	Added	Recovery	Q
Antimony	7041	100	100	100%	
Arsenic	7060A	102	100	102%	
Beryllium	6010B	542	500	108%	
Cadmium	6010B	526	500	105%	
Calcium	6010B	10800	10000	108%	
Chromium	6010B	517	500	103%	
Copper	6010B	519	500	104%	
Iron	6010B	2150	2000	108%	
Lead	7421	99	100	99.0%	
Magnesium	6010B	11000	10000	110%	
Manganese	6010B	528	500	106%	
Mercury	7470A	1.9	2.0	95.0%	
Nickel	6010B	520	500	104%	
Selenium	7740	100	100	100%	
Silver	6010B	500	500	100%	
Thallium	7841	100	100	100%	
Zinc	6010B	510	500	102%	

Reported in µg/L

N-Control limit not met Control Limits: 80-120%