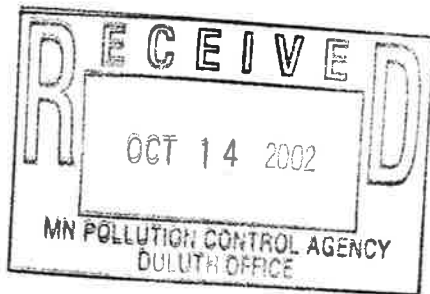


LEGGETTE, BRASHEARS & GRAHAM, INC.

PROFESSIONAL GROUND-WATER AND ENVIRONMENTAL ENGINEERING SERVICES

1113 EAST 14TH STREET
SIOUX FALLS, SD 57104
605-334-6000
FAX 605-334-1850



July 31, 2002

RECEIVED

AUG - 1 2002

MPCA - Brainerd
Baxter, MN

Mr. Jason Chan
Minnesota Pollution Control Agency
1800 College Road South
Baxter, MN 56425

RE: April 2002 Ground-Water Monitoring Event
DeZurik/City of Sartell Hazardous Waste Lagoon #3

Dear Mr. Chan:

Leggette, Brashears & Graham, Inc. (LBG) has completed the April 2002 ground-water monitoring and sampling event at the DeZurik Sanitary Landfill. The purpose of this letter is to summarize and submit the data to the Minnesota Pollution Control Agency (MPCA) on behalf of the City of Sartell. These data were obtained and are reported in accordance with the hazardous waste permit dated September 29, 1994.

Work Completed

On April 29, 2002, LBG collected fluid-level data and ground-water samples from the monitor wells in accordance with the required ground-water monitoring schedule. Figure 1 shows the monitor well locations and Table 1 summarizes the fluid-level measurements and calculated elevations for each well. Figure 1 shows the water-table elevation contours for this monitoring event.

Ground-water samples were collected from the monitor wells on the April sampling schedule. Field sampling data sheets are provided in Appendix I. The samples were submitted to Energy Laboratories in Rapid City, South Dakota for analysis of inorganics, nutrients, and trace metals. A

RAMSEY, NEW JERSEY

ST. PAUL, MINNESOTA

TAMPA, FLORIDA

TRUMBULL, CONNECTICUT

WEST CHESTER, PENNSYLVANIA

CHELMSFORD, MASSACHUSETTS

WHITE PLAINS, NEW YORK

AUSTIN, TEXAS

MADISON, WISCONSIN

HOUSTON, TEXAS

duplicate sample was also submitted to Pace Analytical Services for confirmation. The laboratory analytical reports are provided in Appendix II.

Problems or Delays and Solutions

There were no notable problems or delays during the sampling event. All wells were sampled as specified in the monitoring plan.

Anticipated Work Schedule

The next monitoring and sampling event is scheduled for October 2002.

Sampling and Analytical Results

Figure 1 shows that the indicated ground-water flow direction is generally to the southeast. This is normal for the site. No anomalies in the fluid-level data are apparent.

A summary of the analytical results from the April 2002 event are provided on Table 2. Of the hazardous constituents to which the ground-water protection standards apply (arsenic, barium, cadmium, lead and selenium, Table 3), only arsenic, barium and selenium were detected.

Arsenic was detected in all the wells during the April 2002 sampling event. This is the first time arsenic has been detected in wells P-5R, P-9R, and P-12R; and the first detection since 1998 in P-13 (the background well). The arsenic concentrations are below the Intervention Limit of 0.0125 mg/L. A site-specific Tolerance Limit for arsenic has previously been calculated, but it has been based entirely on the detection limits of the analyses, which are artifacts and not indicative of any real concentrations at the site. Consequently, the calculated Tolerance Limit is of no use in evaluating the current detections of arsenic. Because the arsenic concentrations do not exceed the Intervention Limit and because the arsenic concentrations in the downgradient wells do not exceed the concentrations in the background well, no further action is warranted at this time.

Barium was detected in all the wells during the April 2002 sampling event. The concentrations of barium are below the regulatory limits and the site-specific calculated Tolerance Limit.

Selenium was detected in P-5R at the detection limit of 0.005 mg/L and in P-12R at a concentration of 0.01 mg/L during the April 2002 sampling event. This is the first time selenium has been detected at the site and the concentrations are below the Intervention Limit of 0.011 mg/L. A site-specific Tolerance Limit for selenium has previously been calculated, but it has been based entirely on the detection limits of the analyses, which are artifacts and not indicative of any real concentrations at the site. Consequently, the calculated Tolerance Limit is of no use in evaluating the current detections of selenium. Because the selenium concentrations do not exceed the Intervention Limit and because these are the first historical detections of selenium at the site, no further action is warranted at this time.

Because Energy Laboratories was in the process of completing its Minnesota laboratory certification, it was necessary to send one split sample to a Minnesota certified lab for comparison. The sample from P-5R was sent to Pace Analytical Services for comparison to the Energy Lab results. Comparison of the results show no significant differences between the analyses.

Of that balance of the analytes, none of the concentrations except the dissolved boron concentration exceeded any regulatory limits, where such limits are present. Boron exceeded the HRL of 0.6 mg/L in P-5R. The concentrations of dissolved boron in P-5R, 1.1 mg/L and 0.916 mg/L, are within the historical range for dissolved boron in P-5R and do not warrant any additional action.

Recommendations

No changes to the monitoring program are warranted at this time. The continuation of ground-water monitoring as directed by the MPCA is recommended.

Sincerely,

LEGGETTE, BRASHEARS & GRAHAM, INC.



Melissa Karstens
Environmental Scientist

Reviewed by:



Tim Kenyon, PG
Senior Associate

MK/kak

H:\WP\LANDFILL\Sartell and Dezurik\Dezurik\DeZurik April 2002.RPT.wpd

cc: Ms. Patti Gartland
Mr. Lee Waltz

TABLE 1
Water Elevations
DeZurik Hazardous Waste Lagoon #3

DATE	P-5A	P-5R	P-9R	P-12	P-12R	P-13
4/4/90	1020.83					
6/26/90	1021.79		1020.74	1021.81		1025.77
10/2/90	1023.15		1023.05	1023.31		1026.18
12/18/90	1023.13		1023.25	1023.41		1026.23
4/4/91	1022.69		1022.79	1022.95		1026.14
7/31/91	1024.29		1024.43	1024.5		1026.45
10/31/91	1025.11		1024.97	1025.07		1026.48
4/23/92	1024.22		1024.36	1024.34		1026.46
10/21/92	1024.25		1024.28			
4/20/93	1023.05		1022.94	1023.11		1026
10/27/93	1025.29	1026.14	1025.2		1025.37	1026.98
4/20/94	1024.56	1024.73	1024.56		1024.75	1026.59
7/11/94			1025.52			
10/17/94	1025.38	1025.47	1025.34		1025.44	1027.04
4/11/95	1024.50	1024.79	1025.01		1024.80	1026.75
10/9/95	1025.39	1025.63	1025.52		1025.53	1026.98
4/17/96	1024.70	1024.94	1024.83		1024.97	1026.59
10/15/96	1024.26	1024.40	1024.25		1024.37	1026.47
4/15/97	1024.11	1024.35	1024.22		1024.23	1026.45
10/14/97	1025.8	1026.04	1025.81		1025.91	1027.27
4/13/98	1024.67	1024.84	1024.69		1024.84	1026.44
10/6/98	1024.48	1024.62	1024.47		1024.63	1026.37
4/27/99		1023.63	1023.48		1023.64	1026.1
10/27/99		1023.93	1023.81		1023.93	1026.24
4/25/00		1023	1022.96		1023	1026.22
10/23/00		1022.17	1022.01		1022.18	1026.08
4/18/01		1022.12	1021.97		1022.1	1025.94
7/26/01		1023.92	1023.82		1024.06	1026.21
10/23/01		1023.75	1023.63		1023.79	1026.18
4/29/02		1023.51	1024.30		1023.54	1026.04

blank = not sampled

TABLE 2

DEZURIK HAZARDOUS WASTE LAGOON #3
SARTELL, MINNESOTA

2002 Water Quality Data Summary

Analyte	Units	IL (mg/L)	HRL (mg/L)	P-9R 29-Apr-02	P-13 29-Apr-02	Duplicate (P-13)	P-5R 29-Apr-02	P-5R (Pace DUP)	P-12R 29-Apr-02
Total Organic Carbon	mg/L			1	<1	<1	2		2
Chloride	mg/L			31	32	32	38	34.6	28
Conductivity	umhos/cm			913	795	789	1150	950	898
Chemical Oxygen Demand	mg/L			4	7	1	9	<10	9
pH	su			7.2	7.31	7.26	7.09	7.1	7.23
Total Phenols	mg/L			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sodium	mg/L			14	8	7	44	29	24
Total Dissolved Solids	mg/L			520	430	410	680	717	500
Sulfate	mg/L			70	32	32	160	141	76
Total Cyanide	mg/L			<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
Fluoride	mg/L			<1	<1	<1	<1	0.16	<1
Nitrate as N	mg/L		10	5.2	4.1	5.2	5.8	6.37	5
Dissolved Arsenic	mg/L	0.0125		0.01	0.01	0.01	0.007	<0.01	0.009
Dissolved Barium	mg/L	0.375		0.07	0.04	0.04	0.05	0.054	0.05
Dissolved Boron	mg/L		0.6	0.04	0.04	0.03	1.1	0.916	0.04
Dissolved Cadmium	mg/L			<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.0005
Dissolved Calcium	mg/L			94	97	110	86	137	110
Dissolved Chromium	mg/L	0.03		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dissolved Iron	mg/L			0.02	0.02	0.01	0.04	<0.05	0.02
Dissolved Lead	mg/L			<0.002	<0.002	<0.002	<0.002	<0.006	<0.002
Dissolved Magnesium	mg/L			46	36	39	56	39.9	39
Dissolved Manganese	mg/L		0.1	0.01	0.006	0.006	<0.005	<0.005	0.006
Dissolved Mercury	mg/L	0.011	0.03	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dissolved Selenium	mg/L	0.011	0.03	<0.005	<0.005	<0.005	0.005	<0.015	0.01
Dissolved Zinc	mg/L		2	0.007	0.009	0.008	0.006	<0.02	0.006

Blank = not analyzed
Detections are in **BOLD**

TABLE 3
Summary of Analytical and Statistical Analysis Results
DeZurik Hazardous Waste Lagoon No. 3
(units = µg/L, dissolved)

WELL NUMBER	DATE	ARSENIC	BARIUM	CADMIUM	LEAD	SELENIUM
P-5A	12/27/89	ND	50	ND	ND	ND
P-5A	6/28/90	ND	ND	0.5	5	ND
P-5A	10/4/90	ND	110	ND	ND	ND
P-5A	12/18/90	ND	80	ND	ND	ND
P-5A	4/4/91	ND	60	0.4	ND	ND
P-5A	8/1/91	ND	67	ND	ND	ND
P-5A-1	10/31/91	ND	63	0.32	ND	ND
P-5A-2	10/31/91	ND	60	0.43	ND	ND
P-5A-3	10/31/91	ND	62	0.38	ND	ND
P-5A-4	10/31/91	ND	62	0.55	ND	ND
P-5A	4/23/92	ND	56	ND	ND	ND
P-5A	9/30/92	ND	ND	ND	ND	ND
P-5A	4/20/93	ND	ND	ND	ND	ND
P-5R	10/27/93	ND	78	1.4	ND	ND
P-5R	1/10/94	--	ND	--	--	--
P-5R	4/20/94	ND	ND	ND	ND	<6.02
P-5R	10/17/94	ND	ND	ND	ND	ND
P-5R	4/11/95	ND	ND	ND	ND	ND
P-5R	10/11/95	ND	52	ND	ND	ND
P-5R	4/17/96	ND	ND	ND	ND	ND
P-5R	10/16/96	< 3.0	ND	0.36	< 3.0	< 3.0
P-5R	4/17/97	< 3.0	50	< 0.30	< 3.0	< 3.0
P-5R	10/16/97	<3.0	ND	<0.30	<3.0	<3.0
P-5R	4/13/98	<2	16	<0.2	<1	<3
P-5R	10/6/98	<2	33	<0.2	<1	<3
P-5R	4/27/99	<2	131	<0.2	<1	<1
P-5R	10/27/99	<2	210*	<0.2	<1	<1
P-5R	4/24/00	<2	204	<0.2	<1	<1
P-5R	10/23/00	<2	183	<0.2	<1	<1
P-5R	4/18/01	<10	79	<1	<10	10
P-5R Resample	7/26/01	<5	66	<0.5	<2	<5
P-5R Resample Dup	7/26/01	<5	71	<0.5	<2	<5
P-5R	10/23/01	<5	49	<0.5	<2	<5
P-5R		7	50	<0.5	<2	5
P-9R	4/4/91	ND	ND	ND	ND	ND
P-9R	8/1/91	ND	ND	ND	ND	ND
P-9R-1	10/31/91	ND	ND	ND	ND	ND
P-9R-2	10/31/91	ND	ND	ND	ND	ND
P-9R-3	10/31/91	ND	ND	0.3	ND	ND
P-9R-4	10/31/91	ND	ND	ND	ND	ND
P-9R	4/23/92	ND	ND	0.19	ND	ND
P-9R	9/30/92	ND	ND	ND	ND	ND
P-9R	4/20/93	ND	ND	ND	ND	ND
P-9R	10/27/93	ND	ND	0.7	ND	ND
P-9R	4/20/94	ND	ND	ND	ND	<6.02
P-9R	10/17/94	ND	ND	ND	ND	ND
P-9R	4/11/95	ND	ND	ND	ND	ND
P-9R	10/10/95	ND	ND	ND	ND	ND
P-9R	4/17/96	ND	ND	ND	ND	ND
P-9R	10/16/96	< 3.0	ND	< 0.30	< 3.0	< 3.0
P-9R	4/16/97	< 3.0	53	< 0.30	< 3.0	< 3.0
P-9R	10/15/97	<3.0	61	1.4	<3.0	<3.0
P-9R	4/10/98	<2	17	0.7	2	<3

TABLE 3
Summary of Analytical and Statistical Analysis Results
DeZurik Hazardous Waste Lagoon No. 3
(units = µg/L, dissolved)

WELL NUMBER	DATE	ARSENIC	BARIUM	CADMIUM	LEAD	SELENIUM
P-9R	10/6/98	<2	46	<0.2	<1	<3
P-9R	4/27/99	<2	191	<0.2	1.4	<1
P-9R	10/27/99	<2	126*	0.35	<1	<1
P-9R	4/25/00	<2	99	0.26	<1	<1
P-9R	10/23/00	<2	115	<0.2	<1	<1
P-9R	4/18/01	<10	80	<1	<10	10
P-9R Resample	7/25/01	<5	79	<0.5	<2	<5
P-9R	10/23/01	<5	70	<0.5	<2	<5
P-9R	4/29/02	10	70	<0.5	<2	<5
P-12	4/4/91	ND	ND	ND	ND	ND
P-12	8/1/91	ND	ND	0.32	ND	ND
P-12-1	10/31/91	ND	ND	0.31	ND	ND
P-12-2	10/31/91	ND	ND	0.33	ND	ND
P-12-3	10/31/91	ND	ND	ND	ND	ND
P-12-4	10/31/91	ND	ND	ND	ND	ND
P-12	4/23/92	ND	ND	ND	ND	ND
P-12	9/30/92	ND	ND	ND	ND	ND
P-12	4/20/93	ND	ND	ND	ND	ND
P-12R	10/27/93	ND	ND	13	ND	ND
P-12R	1/10/94	--	--	ND	--	--
P-12R	4/20/94	ND	ND	ND	ND	<6.02
P-12R	10/17/94	ND	ND	ND	ND	ND
P-12R	4/11/95	ND	ND	ND	ND	ND
P-12R	10/10/95	ND	ND	ND	5.2	ND
P-12R	4/17/96	ND	ND	ND	ND	ND
P-12R	10/16/96	<3.0	ND	0.63	<3.0	<3.0
P-12R	4/17/97	<3.0	ND	<0.30	<3.0	<3.0
P-12R	10/16/97	<3.0	ND	<0.30	<3.0	<3.0
P-12R	4/13/98	<2	9	<0.2	<1	<3
P-12R	10/6/98	<2	30	<0.2	<1	<3
P-12R	4/27/99	<2	54	<0.2	<1	<1
P-12R	10/27/99	<2	159*	<0.2	<1	<1
P-12R	4/25/00	<2	135	<0.2	1.1	<1
P-12R	10/24/00	<2	185	<0.2	<1	<1
P-12R	4/18/01	<10	60	<1	<10	<10
P-12R Resample	7/26/01	<5	64	<0.5	<2	<5
P-12R	10/23/01	<5	37	<0.5	<2	<5
P-12R	4/29/02	9	50	<0.5	<2	10
P-13	6/28/90	<3.0	<50	<0.3	<3.0	<3.0
P-13A	6/28/90	<3.0	<50	<0.3	<3.0	<3.0
P-13B	6/28/90	<3.0	<50	<0.3	<3.0	<3.0
P-13C	6/28/90	<3.0	<50	<0.3	<3.0	<3.0
P-13	10/4/90	<3.0	<50	<0.3	<3.0	<3.0
P-13A	10/4/90	<3.0	60	<0.3	<3.0	<3.0
P-13B	10/4/90	<3.0	<50	<0.3	<3.0	<3.0
P-13C	10/4/90	<3.0	<50	<0.3	<3.0	<3.0
P-13A	12/18/90	<3.0	<50	<0.3	<3.0	<3.0
P-13B	12/18/90	<3.0	<50	<0.3	<3.0	<3.0
P-13C	12/18/90	<3.0	<50	<0.3	<3.0	<3.0
P-13D	12/18/90	<3.0	<50	<0.3	<3.0	<3.0
P-13	4/4/91	<3.0	<50	<0.3	<3.0	<3.0
P-13	8/1/91	<3.0	<50	<0.3	<3.0	<3.0

TABLE 3
Summary of Analytical and Statistical Analysis Results
DeZurik Hazardous Waste Lagoon No. 3
(units = µg/L, dissolved)

WELL NUMBER	DATE	ARSENIC	BARIUM	CADMIUM	LEAD	SELENIUM
P-13-1	10/31/91	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13-2	10/31/91	< 3.0	< 50	0.88	< 3.0	< 3.0
P-13-3	10/31/91	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13-4	10/31/91	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13-1	4/23/92	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13-2	4/23/92	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13-3	4/23/92	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13-4	4/23/92	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13	9/30/92	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13-1	10/8-9/92	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13-2	10/8-9/92	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13-3	10/8-9/92	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13A	4/20/93	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13B	4/20/93	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13C	4/20/93	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13D	4/20/93	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13A	10/29/93	< 3.0	< 50	3.3*	< 3.0	< 3.0
P-13B	10/29/93	< 3.0	< 50	5.5*	< 3.0	< 3.0
P-13C	10/29/93	< 3.0	< 50	3.9*	< 3.0	< 3.0
P-13D	10/29/93	< 3.0	< 50	17*	< 3.0	< 3.0
P-13	4/20/94	< 3.0	< 50	< 0.3	< 3.0	< 6.02
P-13A	4/20/94	< 3.0	< 50	< 0.3	< 3.0	< 6.02
P-13B	4/20/94	< 3.0	< 50	0.31	< 3.0	< 6.02
P-13C	4/20/94	< 3.0	< 50	< 0.3	< 3.0	< 6.02
P-13	10/17/94	< 3.0	54	< 0.3	< 3.0	< 3.0
P-13A	10/18/94	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13B	10/18/94	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13C	10/18/94	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13	4/11/95	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13A	4/11/95	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13B	4/11/95	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13C	4/12/95	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13	10/11/95	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13A	10/11/95	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13B	10/11/95	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13C	10/11/95	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13	4/17/96	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13A	4/17/96	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13B	4/17/96	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13C	4/17/96	< 3.0	< 50	< 0.3	< 3.0	< 3.0
P-13	10/16/96	< 3.0	< 50	< 0.30	< 3.0	< 3.0
P-13A	10/16/96	< 3.0	< 50	< 0.30	< 3.0	< 3.0
P-13B	10/17/96	< 3.0	< 50	< 0.30	< 3.0	< 3.0
P-13C	10/17/96	< 3.0	< 50	< 0.30	< 3.0	< 3.0
P-13	4/16/97	< 3.0	< 50	< 0.30	< 3.0	< 3.0
P-13A	4/17/97	< 3.0	< 50	< 0.30	< 3.0	< 3.0
P-13B	4/17/97	< 3.0	< 50	< 0.30	< 3.0	< 3.0
P-13C	4/17/97	< 3.0	< 50	< 0.30	< 3.0	< 3.0
P-13	10/15/97	< 3.0	< 50	< 0.30	< 3.0	< 3.0
P-13A	10/16/97	< 3.0	< 50	< 0.30	< 3.0	< 3.0
P-13B	10/16/97	< 3.0	< 50	< 0.30	< 3.0	< 3.0
P-13C	10/16/97	< 3.0	< 50	< 0.30	< 3.0	< 3.0
P-13A	4/9/98	< 2	< 6	< 0.2	< 1	< 3
P-13B	4/10/98	< 2	< 6	< 0.2	< 1	< 3

TABLE 3
Summary of Analytical and Statistical Analysis Results
DeZurik Hazardous Waste Lagoon No. 3
(units = µg/L, dissolved)

WELL NUMBER	DATE	ARSENIC	BARIUM	CADMIUM	LEAD	SELENIUM
P-13C	4/10/98	2.2	<6	<0.2	<1	<3
P-13D	4/13/98	<2	<6	<0.2	<1	<3
P-13A	10/5/98	<2	27	<0.2	<1	<3
P-13B	10/5/98	<2	101	<0.2	<1	<3
P-13C	10/6/98	<2	180	<0.2	<1	<3
P-13D	10/6/98	<2	135	<0.2	<1	<3
P-13A	4/26/99	<2	66	<0.2	<1	<1
P-13B	4/26/99	<2	178	<0.2	<1	<1
P-13C	4/27/99	<2	114	<0.2	<1	<1
P-13D	4/27/99	<2	151	<0.2	<1	<1
P-13A	10/26/99	<2	95*	<0.2	<1	<1
P-13B	10/27/99	<2	300*	<0.2	<1	<1
P-13C	10/27/99	<2	196*	<0.2	<1	<1
P-13D	10/27/99	<2	229*	<0.2	<1	<1
P-13A	4/24/00	<2	156	<0.2	<1	<1
P-13A	10/23/00	<2	115	<0.2	<1	<1
P-13	4/18/01	<10	43	<1	<10	<10
P-13Dup	4/18/01	<10	43	<1	<10	<10
P-13 Resample	7/26/01	<5	42	<0.5	<2	<5
P-13	10/23/01	<5	38	<0.5	<2	<5
P-13Dup	10/23/01	<5	37	<0.5	<2	<5
P-13	4/29/02	10	40	<0.5	<2	<5
P-13Dup	4/29/02	10	40	<0.5	<2	<5

Regulatory Limits:

MCL:	50	2000	5	15	50
SMCL:	N/A	N/A	N/A	N/A	N/A
HRL:	N/A	2000	4	N/A	30
IL:	12.5	375	1.25	5	11

Background Detection limit**

Background Mean#

Background Standard deviation#

K_{0.95}

Tolerance level##**

3	50	0.3	3	3
3	92	0.3	3	3
1.732	54.762	0.548	1.732	1.732
2.523	2.523	2.523	2.523	2.523
7.4	230	1.7	7.4	7.4

ND Not detected.

-- Not measured.

The Poisson Distribution method was used for calculating the Tolerance Level for background constituents with two or less reported results above the detection limit. For background constituents with three or more results above the detection limit, the arithmetic mean and standard deviation is calculated.

* Data collected are considered suspect and are excluded from the tolerance limit and background mean calculations. As required in the August 1994 Part B Permit Application, the most recent and valid 16 samples were included in the tolerance limit calculation.

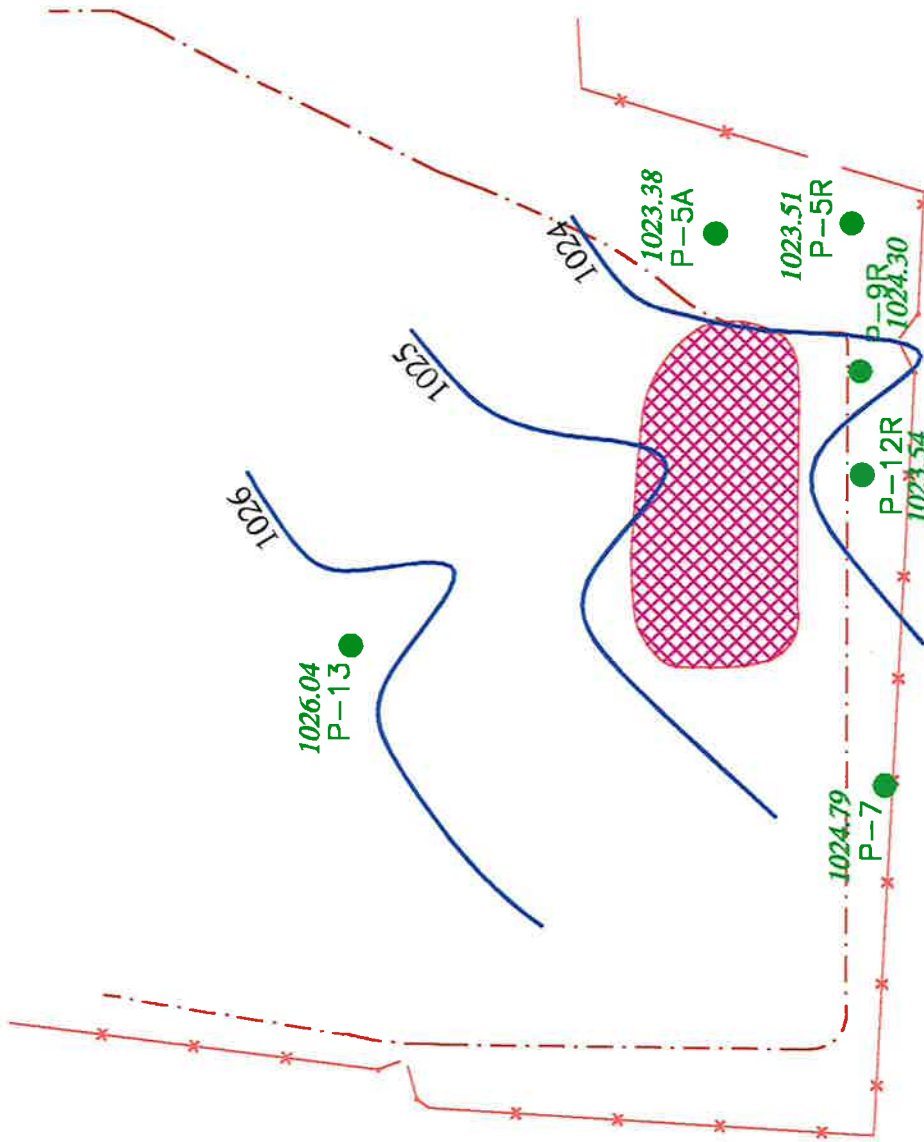
** In 1998, new analytical equipment allowed the laboratory to obtain lower detection limits than that obtained in previous sampling years. These detection limits are lower than those required in the August 1994 Part B Permit Application for evaluating compliance of wells. Where the reported detection limit is lower than the required detection limit, the required detection limit is used for calculating the tolerance level to maintain continuity in evaluating compliance. Please note that the detection limits for the parameters are higher for the April 2001 event due to matrix interferences with the samples. Please refer to the analytical report for a complete explanation of the elevated detection limits.


Note: Sample results in bold type exceed MCL and/or HRL

FIGURE

LEGEND

- P-13
1026.04
- *—*— FENCE
- - - - - APPROXIMATE LIMIT OF LANDFILL WASTE
- ▨ APPROXIMATE LIMIT OF LAGOON
- 1025
- WATER TABLE CONTOUR (DASHED WHERE INFERRED)



DATE	REVISED	<p>LEGGETTE, BRASHEARS & GRAHAM, INC. Professional Ground-Water and Environmental Services 1119 East 14th Street Sioux Falls, South Dakota 57104 (605) 334-6000</p> 	<p>DEZURIK HAZARDOUS WASTE LAGOON #3 SARTELL, MINNESOTA</p>
<p>GROUND-WATER ELEVATIONS AND INFERRED FLOW DIRECTION (29 APR 02)</p>		<p>FILES: dezurik site map.dwg</p>	<p>DATE: July 2001</p>
			<p>FIGURE: 1</p>

APPENDIX I

Field Sampling Data Sheets

GROUND-WATER SAMPLING DATA SHEET

Client Code: 6SARBT

Project Title: DEZURIK LANDFILL LAGOON #3

Job Code: DESHWL

Address: 12TH ST N

Date: 4.29.02

City, State, Zip: SARTELL, MN.

General Data

Stabilization Data

Location ID:	Volume (gallons)	Well Volume	Temp (C)	ORP (mV)	SC (uS)	pH
P-5R	4.00	1.0	10.9	-47	902	6.99
Key Number: 106013	8.00	2.0	10.9	6	920	6.95
Casing Diameter (in): 4"	12.00	3.0	10.9	0	922	6.94
Well Depth (ft): 81.35 TOTDC	16.00	4.0	10.9	22	922	6.95
Depth to water (ft): 75.53						
Column length (ft): 5.82						
Column volume (gal): 3.80						
Total volume purged (gal): 16.00						

Miscellaneous

Purge Method: PVC BAILER

Sampling Method: DISP. BAILER

Analysis Requested: Dissolved metals, CL, FL, NO3, SO4, COD, Cyanide, Phenols, TOC, TDS, pH, Conductivity

Weather Conditions: CLEAR, 48°

Sample Description: SLUBBY SILTY RUST TINT NO O2 OR

Remarks: SPLIT SAMPLES WITH PACE.

Sampler: CMH

Time Sample Collected: 10:35

Leggette, Brashears & Graham, Inc.
1210 West County Road E
St. Paul, Minnesota 55112

GROUND-WATER SAMPLING DATA SHEET

Client Code: 6SARBT

Project Title: DEZURIK LANDFILL LAGOON #3

Job Code: DESHWL

Address: 12TH ST N

Date: 4.29.02

City, State, Zip: SARTELL, MN.

General Data

Stabilization Data

Location ID:	Volume (gallons)	Well Volume	Temp (C)	ORP (mV)	SC (uS)	pH
P-9R	5.00	1.0	10.2	-9	732	7.26
Key Number: 10G013	10.00	2.0	10.1	-29	739	7.08
Casing Diameter (in): 4"	15.00	3.0	10.1	-22	746	7.07
Well Depth (ft): 86.20 TO TOP	20.00	4.0	10.1	0	740	7.06
Depth to water (ft): 78.68						
Column length (ft): 7.52						
Column volume (gal): 4.91						
Total volume purged (gal): 20.00						

Miscellaneous

Purge Method: PVC BAILER

Sampling Method: DISP. BAILER

Analysis Requested: Dissolved metals, CL, FL, NO3, SO4, COD, Cyanide, Phenols, TOC, TDS, pH, Conductivity

Weather Conditions: CLEAR WINDY, 50°

Sample Description: CLEAR, NO ODOMOR

Remarks:

Sampler: CMH

Time Sample Collected: 11:29

Leggette, Brashears & Graham, Inc.
1210 West County Road E
St. Paul, Minnesota 55112

GROUND-WATER SAMPLING DATA SHEET

Client Code: 6SARBT

Project Title: DEZURIK LANDFILL LAGOON #3

Job Code: DESHWL

Address: 12TH ST N

Date: 4.29.02

City, State, Zip: SARTELL, MN.

General Data

Stabilization Data

Location ID:	Volume (gallons)	Well Volume	Temp (C)	ORP (mV)	SE (uS)	pH
P-12R	6.00	1.0	9.8	-3	705	7.20
Key Number: 106013	12.00	2.0	9.8	4	694	7.20
Casing Diameter (in): 4"	18.00	3.0	9.8	2	697	7.21
Well Depth (ft): 86.80 total						
Depth to water (ft): 77.79						
Column length (ft): 9.01						
Column volume (gal): 5.89						
Total volume purged (gal): 18.00						

Miscellaneous

Purge Method: PVC BAILER

Sampling Method: DISP. BAILER

Analysis Requested: Dissolved metals, CL, FL, NO3, SO4, COD, Cyanide, Phenols, TOC, TDS, pH, Conductivity

Weather Conditions: P. Cloudy, WINDY, 55°

Sample Description: SLIGHTLY SILTY TAN/RUST TINT. NO ODOOR

Remarks:

Sampler: CMH

Time Sample Collected: 13:22

Leggette, Brashears & Graham, Inc.
1210 West County Road E
St. Paul, Minnesota 55112

GROUND-WATER SAMPLING DATA SHEET

Client Code: 6SARBT

Project Title: DEZURIK LANDFILL LAGOON #3

Job Code: DESHWL

Address: 12TH ST N

Date:

4.29.02

City, State, Zip: SARTELL, MN.

General Data

Stabilization Data

Location ID:	Volume (gallons)	Well Volume	Temp (C)	ORP (mV)	SC (uS)	pH
P-13	6.00	1.0	10.3	26	644	7.07
Key Number: 10G013	11.00	2.0	10.3	-90	632	7.14
Casing Diameter (in): 4"	16.00	3.0	10.3	-91	630	7.13
Well Depth (ft): 86.90 TO TOP	21.00	4.0	10.3	-46	631	7.13
Depth to water (ft): 79.08						
Column length (ft): 7.82						
Column volume (gal): 5.11						
Total volume purged (gal): 21.00						

Miscellaneous

Purge Method: PVC BAILER

Sampling Method: DISP. BAILER

Analysis Requested: Dissolved metals, CL, FL, NO3, SO4, COD, Cyanide, Phenols, TOC, TDS, pH, Conductivity

Weather Conditions: CLEAR, 43°

Sample Description: CLEAR, NO OOR

Remarks: DUPLICATE SAMPLE ALL PARAMETERS

Sampler: CMH

Time Sample Collected: 9:33

Leggette, Brashears & Graham, Inc.
1210 West County Road E
St. Paul, Minnesota 55112

APPENDIX II

Laboratory Analytical Results

JUN 5 2002

June 03, 2002

Tim Kenyon
Leggette Brashears & Graham
1113 East 14th St
Sioux Falls, SD 57104

Order No.: R02040328

Dear Tim Kenyon:

Energy Laboratories Inc. received 5 samples on 4/30/2002 9:45:00 AM for the analyses presented in the following report.

Thank you for submitting your samples to Energy Laboratories, Inc. - Rapid City. The following pages contain the results of your sample analysis.

The samples were analyzed in accordance with the methods specified on the analytical reports. All analyses were accompanied by applicable quality assurance samples throughout the test. Where applicable, the results of these quality assurance samples will be included with your analytical data.

If you have any questions regarding the analyses performed or the results of these analyses, please feel free to call myself or Linda Larson at (888)672-1225, (605)342-1225 or ljhansen@energylab.com.

Sincerely,



LJ Hansen
Laboratory Director
Energy Laboratories, Inc.
Rapid City, SD



LABORATORY ANALYTICAL REPORT

Client: Leggette Brashears & Graham
 Project: Dezurik Lagoon
 Lab ID: R02040328-001
 Client Sample ID: P-13

Report Date: 06/03/02
 Collection Date: 04/29/02 09:33
 Date Received: 04/30/02
 Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/		Method	Analysis Date / By	
					QCL	DF			
PHYSICAL PARAMETERS									
Conductivity @ 25 C	795	umhos/cm		2			1	A2510 B	04/30/02 15:11/DJK
Oxygen Demand, Chemical (COD)	7	mg/L		1			1	HACH 8000	05/02/02 18:11/ADM
pH	7.31	s.u.		0.01			1	A4500-H B	04/30/02 14:46/DJK
Solids, Total Dissolved TDS @ 180 C	430	mg/L		5			1	A2540 C	05/01/02 15:40/LMT
INORGANIC PARAMETERS									
Calcium	97	mg/L		1			1	E200.7	05/13/02 15:14/BMB
Chloride	32	mg/L		1			2	E300.0	05/13/02 17:55/EH
Cyanide, Total	ND	mg/L		0.005			1	E335.4	05/09/02 14:20/EH
Fluoride	ND	mg/L		1			1	E300.0	05/03/02 21:24/EH
Magnesium	36	mg/L		1			1	E200.7	05/13/02 15:14/BMB
Phenolics, Total Recoverable (Distilled)	ND	mg/L		0.05			1	E420.1	05/07/02 16:43/JL
Sodium	8	mg/L		1			1	E200.7	05/13/02 15:14/BMB
Sulfate	32	mg/L		1			1	E300.0	05/03/02 21:24/EH
ORGANIC CARBON PARAMETERS									
Organic Carbon, Total (TOC)	ND	mg/L		1			1	E415.2	05/07/02 10:17/JL
NUTRIENT PARAMETERS									
Nitrogen, Nitrate as N	4.1	mg/L		0.05			1	E353.2	05/08/02 16:50/BMB
DISSOLVED METALS ANALYSES									
Arsenic	0.010	mg/L		0.005			1	SW6010B	05/07/02 11:43/BMB
Barium	0.040	mg/L		0.005			1	SW6010B	05/07/02 11:43/BMB
Boron	0.040	mg/L		0.005			1	SW6010B	05/07/02 11:43/BMB
Cadmium	ND	mg/L		0.0005			1	E200.7_8	05/13/02 18:37/ADM
Chromium	ND	mg/L		0.01			1	SW6010B	05/07/02 11:43/BMB
Iron	0.02	mg/L		0.01			1	SW6010B	05/07/02 11:43/BMB
Lead	ND	mg/L		0.002			1	E200.7_8	05/13/02 18:37/ADM
Manganese	0.006	mg/L		0.005			1	SW6010B	05/07/02 11:43/BMB
Mercury	ND	mg/L		0.00020			1	SW7470A	05/03/02 11:03/CH
Selenium	ND	mg/L		0.005			1	SW6010B	05/07/02 11:43/BMB
Zinc	0.009	mg/L		0.005			1	SW6010B	05/07/02 11:43/BMB

Report Definitions: RL - Analyte reporting limit.
 QCL - Quality control limit.

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Leggette Brashears & Graham
Project: Dezurik Lagoon
Lab ID: R02040328-002
Client Sample ID: P-5R

Report Date: 06/03/02
Collection Date: 04/29/02 10:35
Date Received: 04/30/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
PHYSICAL PARAMETERS							
Conductivity @ 25 C	1150	umhos/cm		2		1 A2510 B	04/30/02 15:11/DJK
Oxygen Demand, Chemical (COD)	9	mg/L		1		1 HACH 8000	05/02/02 18:13/ADM
pH	7.09	s.u.		0.01		1 A4500-H B	04/30/02 14:47/DJK
Solids, Total Dissolved TDS @ 180 C	680	mg/L		5		1 A2540 C	05/01/02 15:40/LMT
INORGANIC PARAMETERS							
Calcium	86	mg/L		1		1 E200.7	05/13/02 15:18/BMB
Chloride	38	mg/L		1		2 E300.0	05/13/02 18:24/EH
Cyanide, Total	ND	mg/L		0.005		1 E335.4	05/09/02 12:46/EH
Fluoride	ND	mg/L		1		1 E300.0	05/03/02 21:53/EH
Magnesium	56	mg/L		1		1 E200.7	05/13/02 15:18/BMB
Phenolics, Total Recoverable (Distilled)	ND	mg/L		0.05		1 E420.1	05/07/02 16:43/JL
Sodium	44	mg/L		1		1 E200.7	05/13/02 15:18/BMB
Sulfate	160	mg/L		2		20 E300.0	05/03/02 22:07/EH
ORGANIC CARBON PARAMETERS							
Organic Carbon, Total (TOC)	2	mg/L		1		1 E415.2	05/07/02 10:28/JL
NUTRIENT PARAMETERS							
Nitrogen, Nitrate as N	5.8	mg/L		0.05		1 E353.2	05/08/02 16:50/BMB
DISSOLVED METALS ANALYSES							
Arsenic	0.007	mg/L		0.005		1 SW6010B	05/07/02 11:57/BMB
Barium	0.050	mg/L		0.005		1 SW6010B	05/07/02 11:57/BMB
Boron	1.1	mg/L		0.005		1 SW6010B	05/07/02 11:57/BMB
Cadmium	ND	mg/L		0.0005		1 E200.7_8	05/13/02 20:08/ADM
Chromium	ND	mg/L		0.01		1 SW6010B	05/07/02 11:57/BMB
Iron	0.04	mg/L		0.01		1 SW6010B	05/07/02 11:57/BMB
Lead	ND	mg/L		0.002		1 E200.7_8	05/13/02 20:08/ADM
Manganese	ND	mg/L		0.005		1 SW6010B	05/07/02 11:57/BMB
Mercury	ND	mg/L		0.00020		1 SW7470A	05/03/02 11:07/CH
Selenium	0.005	mg/L		0.005		1 SW6010B	05/07/02 11:57/BMB
Zinc	0.006	mg/L		0.005		1 SW6010B	05/07/02 11:57/BMB

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Legette Brashears & Graham
Project: Dezurik Lagoon
Lab ID: R02040328-003
Client Sample ID: P-9R

Report Date: 06/03/02
Collection Date: 04/29/02 11:29
Date Received: 04/30/02
Matrix: AQUEOUS

Table with columns: Analyses, Result, Units, Qual, RL, MCL/QCL, DF, Method, Analysis Date / By. Rows include Physical Parameters (Conductivity, COD, pH, TDS), Inorganic Parameters (Calcium, Chloride, Cyanide, Fluoride, Magnesium, Phenolics, Sodium, Sulfate), Organic Carbon Parameters (TOC), Nutrient Parameters (Nitrogen), and Dissolved Metals Analyses (Arsenic, Barium, Boron, Cadmium, Chromium, Iron, Lead, Manganese, Mercury, Selenium, Zinc).

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit.

MCL - Maximum contaminant level. ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Leggette Brashears & Graham
Project: Dezurik Lagoon
Lab ID: R02040328-004
Client Sample ID: P-12R

Report Date: 06/03/02
Collection Date: 04/29/02 13:22
Date Received: 04/30/02
Matrix: AQUEOUS

Table with columns: Analyses, Result, Units, Qual, RL, MCL/QCL, DF, Method, Analysis Date / By. Rows include Physical Parameters (Conductivity, COD, pH, TDS), Inorganic Parameters (Calcium, Chloride, Cyanide, Fluoride, Magnesium, Phenolics, Sodium, Sulfate), Organic Carbon Parameters (TOC), Nutrient Parameters (Nitrogen), and Dissolved Metals Analyses (Arsenic, Barium, Boron, Cadmium, Chromium, Iron, Lead, Manganese, Mercury, Selenium, Zinc).

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit.

MCL - Maximum contaminant level. ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Leggette Brashears & Graham
 Project: Dezurik Lagoon
 Lab ID: R02040328-005
 Client Sample ID: Duplicate *P-13*

Report Date: 06/03/02
 Collection Date: 04/29/02 13:22
 Date Received: 04/30/02
 Matrix: AQUEOUS

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
PHYSICAL PARAMETERS							
Conductivity @ 25 C	789	umhos/cm		2		1 A2510 B	04/30/02 15:17/DJK
Oxygen Demand, Chemical (COD)	1	mg/L		1		1 HACH 8000	05/02/02 18:15/ADM
pH	7.26	s.u.		0.01		1 A4500-H B	04/30/02 14:50/DJK
Solids, Total Dissolved TDS @ 180 C	410	mg/L		5		1 A2540 C	05/01/02 15:40/LMT
INORGANIC PARAMETERS							
Calcium	110	mg/L		1		1 E200.7	05/13/02 15:39/BMB
Chloride	32	mg/L		1		2 E300.0	05/08/02 14:38/EH
Cyanide, Total	ND	mg/L		0.005		1 E335.4	05/09/02 12:54/EH
Fluoride	ND	mg/L		1		1 E300.0	05/03/02 23:19/EH
Magnesium	39	mg/L		1		1 E200.7	05/13/02 15:39/BMB
Phenolics, Total Recoverable (Distilled)	ND	mg/L		0.05		1 E420.1	05/07/02 16:45/JL
Sodium	7	mg/L		1		1 E200.7	05/13/02 15:39/BMB
Sulfate	32	mg/L		1		1 E300.0	05/03/02 23:19/EH
ORGANIC CARBON PARAMETERS							
Organic Carbon, Total (TOC)	ND	mg/L		1		1 E415.2	05/07/02 11:01/JL
NUTRIENT PARAMETERS							
Nitrogen, Nitrate as N	5.2	mg/L		0.05		1 E353.2	05/08/02 16:50/BMB
DISSOLVED METALS ANALYSES							
Arsenic	0.010	mg/L		0.005		1 SW6010B	05/07/02 12:32/BMB
Barium	0.040	mg/L		0.005		1 SW6010B	05/07/02 12:32/BMB
Boron	0.030	mg/L		0.005		1 SW6010B	05/07/02 12:32/BMB
Cadmium	ND	mg/L		0.0005		1 E200.7_8	05/13/02 20:44/ADM
Chromium	ND	mg/L		0.01		1 SW6010B	05/07/02 12:32/BMB
Iron	0.01	mg/L		0.01		1 SW6010B	05/07/02 12:32/BMB
Lead	ND	mg/L		0.002		1 E200.7_8	05/13/02 20:44/ADM
Manganese	0.006	mg/L		0.005		1 SW6010B	05/07/02 12:32/BMB
Mercury	ND	mg/L		0.00020		1 SW7470A	05/03/02 11:16/CH
Selenium	ND	mg/L		0.005		1 SW6010B	05/07/02 12:32/BMB
Zinc	0.008	mg/L		0.005		1 SW6010B	05/07/02 12:32/BMB

Report Definitions: RL - Analyte reporting limit.
 QCL - Quality control limit.

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Leggette Brashears & Graham
Project: Dezurik Lagoon

Report Date: 05/28/02
Work Order: R02040328

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2510 B		Batch: 020430A-COND-PROBE-W							
Sample ID: LCS1_020430A Conductivity @ 25 C	Laboratory Control Spike - generic 336 umhos/cm		2.00	100	90	110			04/30/02 15:02
Sample ID: R02040274-001BDUP Conductivity @ 25 C	Sample Duplicate 1.69 umhos/cm		2.00				0	10	04/30/02 15:06
Sample ID: LCS2_020430A Conductivity @ 25 C	Laboratory Control Spike - generic 332 umhos/cm		2.00	99.1	90	110			04/30/02 15:17
Method: A2540 C		Batch: 020501A-SLDS-TDS-W							
Sample ID: LCS1_020501A Solids, Total Dissolved TDS @ 180 C	Laboratory Control Spike - generic 222.9 mg/L		5.0	95.7	80	120			05/01/02 15:40
Sample ID: MBLK1_020501A Solids, Total Dissolved TDS @ 180 C	Method Blank ND mg/L		5.0						05/01/02 15:40
Sample ID: R02040339-001DMS Solids, Total Dissolved TDS @ 180 C	Sample Matrix Spike 2614 mg/L		5.0	104	80	120			05/01/02 15:40
Sample ID: R02040339-001DMSD Solids, Total Dissolved TDS @ 180 C	Sample Matrix Spike Duplicate 2498 mg/L		5.0	98.4	80	120	4.55	10	05/01/02 15:40
Method: A4500-H B		Batch: 020430A-PH-W							
Sample ID: LCS1_020430A pH	Laboratory Control Spike - generic 8.83 s.u.		0.0100	96.6	90	110			04/30/02 14:39
Sample ID: R02040312-001ADUP pH	Sample Duplicate 7.92 s.u.		0.0100				0.126	10	04/30/02 14:42
Sample ID: LCS2_020430A pH	Laboratory Control Spike - generic 8.81 s.u.		0.0100	96.4	90	110			04/30/02 14:51

Qualifiers: ND - Not Detected at the Reporting Limit
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QA/QC Summary Report

Client: Leggette Brashears & Graham
Project: Dezurik Lagoon

Report Date: 05/28/02
Work Order: R02040328

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									
Batch: 020513a									
Sample ID: ERAP705-507	Laboratory Control Spike - generic								05/13/02 13:52
Calcium	73.4	mg/L	0.50	101	85	115			
Magnesium	10.1	mg/L	0.50	98.1	85	115			
Sample ID: ERAP075-506	Laboratory Control Spike - generic								05/13/02 13:56
Sodium	42.5	mg/L	0.50	101	85	115			
Sample ID: R02040291-001BDUP	Sample Duplicate								05/13/02 14:07
Calcium	61.8	mg/L	1.0				1.63	10	
Magnesium	1.2	mg/L	1.0				0.837	10	
Sodium	89.9	mg/L	1.0				5.49	10	
Sample ID: R02040291-001BMS	Sample Matrix Spike								05/13/02 14:11
Calcium	88.24	mg/L	1.0	110	80	120			
Magnesium	26.45	mg/L	1.0	101	80	120			
Sodium	117.4	mg/L	1.0	129	80	120			S
Sample ID: R02040291-001BMSD	Sample Matrix Spike Duplicate								05/13/02 14:15
Calcium	85.04	mg/L	1.0	97	80	120	3.68	10	
Magnesium	25.54	mg/L	1.0	97.4	80	120	3.51	10	
Sodium	116.3	mg/L	1.0	125	80	120	0.976	10	S
Sample ID: R02040291-001BDUP	Sample Duplicate								05/13/02 14:22
Calcium	59.6	mg/L	1.0				0.336	10	
Magnesium	1.16	mg/L	1.0				3.39	10	
Sodium	85.8	mg/L	1.0				0	10	
Sample ID: R02040291-001BMS	Sample Matrix Spike								05/13/02 14:26
Calcium	110.4	mg/L	1.0	102	80	120			
Magnesium	50.39	mg/L	1.0	98.4	80	120			
Sodium	141.1	mg/L	1.0	111	80	120			
Sample ID: R02040291-001BMSD	Sample Matrix Spike Duplicate								05/13/02 14:30
Calcium	107.6	mg/L	1.0	96.4	80	120	2.51	10	
Magnesium	49.48	mg/L	1.0	96.6	80	120	1.83	10	
Sodium	139.8	mg/L	1.0	108	80	120	0.974	10	
Sample ID: R02040291-001BDUP	Sample Duplicate								05/13/02 14:37
Calcium	59.2	mg/L	1.0				2.05	10	
Magnesium	1.17	mg/L	1.0				1.72	10	
Sodium	79.5	mg/L	1.0				2.61	10	
Sample ID: R02040291-001BMS	Sample Matrix Spike								05/13/02 14:51
Calcium	80.14	mg/L	1.0	88.6	80	120			
Magnesium	24.62	mg/L	1.0	93.9	80	120			
Sodium	99.75	mg/L	1.0	72.6	80	120			S

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QA/QC Summary Report

Client: Leggette Brashears & Graham

Report Date: 05/28/02

Project: Dezurik Lagoon

Work Order: R02040328

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Batch: 020513a
Sample ID: R02040291-001BMS	Sample Matrix Spike								05/13/02 14:51
Sample ID: R02040291-001BMSD	Sample Matrix Spike Duplicate								05/13/02 14:55
Calcium	81.97	mg/L	1.0	95.9	80	120	2.25	10	
Magnesium	24.97	mg/L	1.0	95.3	80	120	1.38	10	
Sodium	109.6	mg/L	1.0	112	80	120	9.37	10	
Sample ID: R02040291-001BDUP	Sample Duplicate								05/13/02 15:03
Calcium	58.6	mg/L	1.0				4.18	10	
Magnesium	1.14	mg/L	1.0				1.74	10	
Sodium	84.4	mg/L	1.0				9.95	10	
Sample ID: R02040291-001BMS	Sample Matrix Spike								05/13/02 15:06
Calcium	114.5	mg/L	1.0	117	80	120			
Magnesium	53.12	mg/L	1.0	104	80	120			
Sodium	147.3	mg/L	1.0	142	80	120			S
Sample ID: R02040291-001BMSD	Sample Matrix Spike Duplicate								05/13/02 15:10
Calcium	112.6	mg/L	1.0	113	80	120	1.61	10	
Magnesium	51.3	mg/L	1.0	100	80	120	3.49	10	
Sodium	141.6	mg/L	1.0	130	80	120	3.95	10	S
Sample ID: R02040339-001EDUP	Sample Duplicate								05/13/02 15:46
Calcium	162	mg/L	1.0				1.24	10	
Magnesium	44.7	mg/L	1.0				1.81	10	
Sodium	12.5	mg/L	1.0				4.08	10	
Sample ID: R02040341-008DDUP	Sample Duplicate								05/13/02 17:39
Calcium	59.2	mg/L	1.0				0.673	10	
Magnesium	36.5	mg/L	1.0				1.90	10	
Sodium	2.66	mg/L	1.0				5.84	10	
Sample ID: R02040341-009DMS	Sample Matrix Spike								05/13/02 17:46
Calcium	23.71	mg/L	1.0	94.4	80	120			
Magnesium	23.83	mg/L	1.0	95.1	80	120			
Sodium	24.85	mg/L	1.0	99.4	80	120			
Sample ID: R02040341-009DMSD	Sample Matrix Spike Duplicate								05/13/02 17:50
Calcium	25.08	mg/L	1.0	99.9	80	120	5.61	10	
Magnesium	25.08	mg/L	1.0	100	80	120	5.13	10	
Sodium	26.45	mg/L	1.0	106	80	120	6.22	10	

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QA/QC Summary Report

Client: Leggette Brashears & Graham
Project: Dezurik Lagoon

Report Date: 05/28/02
Work Order: R02040328

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7_8									
Batch: B_R7788									
Sample ID: LFB	Laboratory Fortified Blank								
Cadmium	0.04818	mg/L	0.0000300	96.3	80	120			05/13/02 13:52
Sample ID: LRB	Method Blank								
Cadmium	0.00001	mg/L	0.0000300						05/13/02 13:46
Lead	0.000013	mg/L	0.0000200						J
Sample ID: R02050015-006B	Sample Matrix Spike								
Cadmium	0.04229	mg/L	0.0000300	84.5	70	130			05/13/02 14:35
Lead	0.04844	mg/L	0.0000200	96.1	70	130			
Sample ID: B02050546-004AMS	Sample Matrix Spike								
Cadmium	0.04627	mg/L	0.0000300	92.5	70	130			05/13/02 20:26
Lead	0.04848	mg/L	0.0000200	96.9	70	130			
Sample ID: B02050107-001AMS	Sample Matrix Spike								
Cadmium	0.04849	mg/L	0.0000300	96.4	70	130			05/14/02 02:16
Lead	0.06686	mg/L	0.0000200	90.7	70	130			
Sample ID: R02050015-006B	Sample Matrix Spike Duplicate								
Cadmium	0.04253	mg/L	0.0000300	85	70	130	0.566	20	05/13/02 14:59
Lead	0.04942	mg/L	0.0000200	98.1	70	130	2.00	20	
Sample ID: B02050546-004AMSD	Sample Matrix Spike Duplicate								
Cadmium	0.0481	mg/L	0.0000300	96.2	70	130	3.88	20	05/13/02 20:32
Lead	0.04947	mg/L	0.0000200	98.9	70	130	2.02	20	
Sample ID: B02050107-001AMSD	Sample Matrix Spike Duplicate								
Cadmium	0.0484	mg/L	0.0000300	96.2	70	130	0.186	20	05/14/02 02:22
Lead	0.06703	mg/L	0.0000200	91.1	70	130	0.254	20	

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QA/QC Summary Report

Client: Leggette Brashears & Graham
Project: Dezurik Lagoon

Report Date: 05/28/02
Work Order: R02040328

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0							Batch: R2320		
Sample ID: R02040294-003DDUP	Sample Duplicate								
Fluoride	ND	mg/L	2.6				0	10	05/03/02 12:30
Sulfate	1534	mg/L	4.5				0.776	10	
Sample ID: R02040294-004DMS	Sample Matrix Spike								
Chloride	54.45	mg/L	0.50	86.6	80	120			05/03/02 12:59
Fluoride	17.59	mg/L	0.58	87.9	80	120			
Sulfate	663.1	mg/L	1.0	96	80	120			
Sample ID: R02040298-002ADUP	Sample Duplicate								
Chloride	4.336	mg/L	0.50				0.138	10	05/03/02 15:52
Fluoride	0.554	mg/L	0.10				6.63	10	
Sulfate	40.74	mg/L	1.0				0.416	10	
Sample ID: R02040298-003AMS	Sample Matrix Spike								
Chloride	8.054	mg/L	0.50	112	80	120			05/03/02 16:21
Sample ID: R02040301-001ADUP	Sample Duplicate								
Chloride	115.6	mg/L	0.50				0.0260	10	05/03/02 19:43
Fluoride	ND	mg/L	0.10				0	10	
Sulfate	18.55	mg/L	1.0				0.746	10	
Sample ID: R02040301-001ADUP	Sample Duplicate								
Chloride	86.87	mg/L	0.50				1.24	10	05/03/02 20:12
Fluoride	ND	mg/L	0.53				0	10	
Sulfate	34.78	mg/L	1.0				1.09	10	
Sample ID: R02040301-002AMS	Sample Matrix Spike								
Chloride	117.2	mg/L	0.50	106	80	120			05/03/02 20:41
Fluoride	1.996	mg/L	0.10	99.8	80	120			
Sulfate	32.65	mg/L	1.0	94.1	80	120			
Sample ID: R02040301-002AMS	Sample Matrix Spike								
Sulfate	158	mg/L	1.0	83.8	80	120			05/03/02 21:09

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QA/QC Summary Report

Client: Leggette Brashears & Graham

Project: Dezurik Lagoon

Report Date: 05/28/02

Work Order: R02040328

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0							Batch: R2413		
Sample ID: R02040328-001EDUP	Sample Duplicate								05/08/02 12:57
Chloride	31.6	mg/L	0.50				1.93	10	
Fluoride	ND	mg/L	0.11				0	10	
Sample ID: R02040328-002EMS	Sample Matrix Spike								05/08/02 13:26
Fluoride	3.9	mg/L	0.12	97.5	80	120			
Sample ID: R02040328-005EDUP	Sample Duplicate								05/08/02 14:53
Chloride	32.48	mg/L	0.50				0.324	10	
Fluoride	ND	mg/L	0.11				0	10	
Sample ID: R02040339-002DMS	Sample Matrix Spike								05/08/02 15:22
Chloride	68.08	mg/L	0.50	105	80	120			
Fluoride	9.33	mg/L	0.29	93.3	80	120			
Sample ID: R02050015-004DDUP	Sample Duplicate								05/08/02 18:58
Chloride	27.2	mg/L	0.50				0.0845	10	
Fluoride	0.107	mg/L	0.10				3.81	10	
Sample ID: R02050015-004DDUP	Sample Duplicate								05/08/02 19:27
Chloride	24.7	mg/L	0.50				2.04	10	
Fluoride	ND	mg/L	0.53				0	10	
Sample ID: R02050015-005DMS	Sample Matrix Spike								05/08/02 19:56
Fluoride	2.149	mg/L	0.10	97.7	80	120			
Sample ID: R02050015-005DMS	Sample Matrix Spike								05/08/02 20:24
Chloride	256.5	mg/L	1.4	86	80	120			
Fluoride	98.18	mg/L	2.9	93.7	80	120			
Sample ID: R02050037-003ADUP	Sample Duplicate								05/09/02 01:13
Chloride	7.115	mg/L	0.50				0.407	10	
Fluoride	0.154	mg/L	0.10				6.29	10	
Sample ID: R02050037-004AMS	Sample Matrix Spike								05/09/02 02:10
Chloride	12.26	mg/L	0.50	111	80	120			
Fluoride	1.99	mg/L	0.10	92.9	80	120			

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QA/QC Summary Report

Client: Leggette Brashears & Graham

Report Date: 05/28/02

Project: Dezurik Lagoon

Work Order: R02040328

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0							Batch: R2482		
Sample ID: R02040291-001BDUP Chloride	Sample Duplicate 261.3	mg/L	0.50				2.13		05/13/02 14:33 10
Sample ID: R02040291-001BDUP Chloride	Sample Duplicate 177.7	mg/L	0.52				0.0720		05/13/02 15:17 10
Sample ID: R02040291-001BMS Chloride	Sample Matrix Spike 281.8	mg/L	0.57	104	80	120			05/13/02 15:31
Sample ID: R02040291-001BDUP Chloride	Sample Duplicate 257.2	mg/L	0.50				1.37		05/13/02 16:00 10
Sample ID: R02040291-001BDUP Chloride	Sample Duplicate 177.6	mg/L	0.52				0.309		05/13/02 16:43 10
Sample ID: R02040291-001BMS Chloride	Sample Matrix Spike 295.5	mg/L	0.57	117	80	120			05/13/02 16:58
Sample ID: R02040328-001EDUP Chloride	Sample Duplicate 31.12	mg/L	0.50				2.53		05/13/02 18:10 10
Sample ID: R02050015-005DMS Chloride	Sample Matrix Spike 33.79	mg/L	0.50	113	80	120			05/13/02 18:53
Method: E335.4							Batch: 446		
Sample ID: LCS02122-1 Cyanide, Total	Laboratory Control Spike - generic 0.192	mg/L	0.00800	94	85	115			05/09/02 12:27
Sample ID: MB02122-1 Cyanide, Total	Method Blank 0.004	mg/L	0.00500						05/09/02 12:28
Sample ID: R02040321-002ADUP Cyanide, Total	Sample Duplicate ND	mg/L	0.00500				0		05/09/02 12:36 10
Sample ID: R02040328-001BMS-1 Cyanide, Total	Sample Matrix Spike 0.19	mg/L	0.00800	95	80	120			05/09/02 14:18

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QA/QC Summary Report

Client: Leggette Brashears & Graham

Project: Dezurik Lagoon

Report Date: 05/28/02

Work Order: R02040328

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E335.4							Batch: 452		
Sample ID: LCS02123-1	Laboratory Control Spike - generic								05/09/02 12:41
Cyanide, Total	0.194	mg/L	0.00800	97	85	115			
Sample ID: MB02123-1	Method Blank								05/09/02 12:45
Cyanide, Total	ND	mg/L	0.00500						
Sample ID: R02040328-003BMS-1	Sample Matrix Spike								05/09/02 12:50
Cyanide, Total	0.195	mg/L	0.00800	97.5	80	120			
Sample ID: R02040328-004BDUP	Sample Duplicate								05/09/02 12:52
Cyanide, Total	ND	mg/L	0.00500				0	10	
Sample ID: R02040328-005BMS-2	Sample Matrix Spike								05/09/02 12:56
Cyanide, Total	0.196	mg/L	0.00800	98	80	120			
Method: E353.2							Batch: A2002-04-30_3_NO2_02		
Sample ID: MBLK-2	Method Blank								04/30/02 14:48
Nitrogen, Nitrite as N	ND	mg/L	0.0500						
Sample ID: R02040328-001FMS	Sample Matrix Spike								04/30/02 14:53
Nitrogen, Nitrite as N	0.27	mg/L	0.0500	112	80	120			
Sample ID: R02040328-002FDUP	Sample Duplicate								04/30/02 14:57
Nitrogen, Nitrite as N	ND	mg/L	0.0500				0	10	

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QA/QC Summary Report

Client: Leggette Brashears & Graham

Report Date: 05/28/02

Project: Dezurik Lagoon

Work Order: R02040328

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E415.2							Batch: C_TOC-050602A		
Sample ID: C02050097-006ADUP	Sample Duplicate								05/07/02 09:03
Organic Carbon, Total (TOC)	2.612	mg/L	0.500				2.73	10	
Sample ID: C02050097-005ADUP	Sample Duplicate								05/07/02 12:01
Organic Carbon, Total (TOC)	94.42	mg/L	0.500				2.49	10	
Sample ID: MBLK	Method Blank								05/06/02 16:17
Organic Carbon, Total (TOC)	ND	mg/L	0.500						
Sample ID: MBLK	Method Blank								05/07/02 10:05
Organic Carbon, Total (TOC)	ND	mg/L	0.500						
Sample ID: MBLK	Method Blank								05/07/02 12:52
Organic Carbon, Total (TOC)	ND	mg/L	0.500						
Sample ID: MBLK	Method Blank								05/07/02 13:14
Organic Carbon, Total (TOC)	ND	mg/L	0.500						
Sample ID: C02050097-006AMS	Sample Matrix Spike								05/07/02 09:15
Organic Carbon, Total (TOC)	7.501	mg/L	0.500	99.2	85	115			
Sample ID: C02050036-004DMS	Sample Matrix Spike								05/07/02 12:13
Organic Carbon, Total (TOC)	7.037	mg/L	0.500	104	85	115			
Sample ID: C02050097-006AMSD	Sample Matrix Spike Duplicate								05/07/02 09:26
Organic Carbon, Total (TOC)	7.356	mg/L	0.500	96.3	85	115	1.95	10	
Sample ID: C02050036-004DMSD	Sample Matrix Spike Duplicate								05/07/02 12:24
Organic Carbon, Total (TOC)	7.044	mg/L	0.500	104	85	115	0.101	10	
Method: E420.1							Batch: C_A2002-05-07_6_PHN_01		
Sample ID: LFB-13	Laboratory Fortified Blank								05/07/02 16:48
Phenolics, Total Recoverable (Distilled)	10.08	mg/L	0.166	101	90	110			
Sample ID: MBLK-2	Method Blank								05/07/02 16:42
Phenolics, Total Recoverable (Distilled)	ND	mg/L	0.0100						
Sample ID: C02050060-003CMS	Sample Matrix Spike								05/07/02 16:47
Phenolics, Total Recoverable (Distilled)	0.525	mg/L	0.0100	103	90	110			
Sample ID: C02050060-003CMSD	Sample Matrix Spike Duplicate								05/07/02 16:48
Phenolics, Total Recoverable (Distilled)	0.514	mg/L	0.0100	100	90	110	2.12	10	

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QA/QC Summary Report

Client: Leggette Brashears & Graham
Project: Dezurik Lagoon

Report Date: 05/28/02
Work Order: R02040328

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: HACH 8000							Batch: C_A2002-05-02_6_COD_01		
Sample ID: C02040838-001BDUP Oxygen Demand, Chemical (COD)	Sample Duplicate 1490	mg/L	1.00				8.36	15	05/02/02 17:45
Sample ID: C02040866-006CDUP Oxygen Demand, Chemical (COD)	Sample Duplicate 18	mg/L	1.00				0	15	05/02/02 17:51
Sample ID: LFB-10 Oxygen Demand, Chemical (COD)	Laboratory Fortified Blank 143	mg/L	1.00	104	85	115			05/02/02 17:46
Sample ID: LFB-20 Oxygen Demand, Chemical (COD)	Laboratory Fortified Blank 143	mg/L	1.00	104	85	115			05/02/02 17:50
Sample ID: LFB-29 Oxygen Demand, Chemical (COD)	Laboratory Fortified Blank 143	mg/L	1.00	104	85	115			05/02/02 17:54
Sample ID: LFB-40 Oxygen Demand, Chemical (COD)	Laboratory Fortified Blank 133	mg/L	1.00	96.4	85	115			05/02/02 18:12
Sample ID: LFB-46 Oxygen Demand, Chemical (COD)	Laboratory Fortified Blank 134	mg/L	1.00	97.1	85	115			05/02/02 18:16
Sample ID: MBLK-2 Oxygen Demand, Chemical (COD)	Method Blank ND	mg/L	1.00						05/02/02 17:41
Sample ID: MBLK-31 Oxygen Demand, Chemical (COD)	Method Blank ND	mg/L	1.00						05/02/02 17:55
Sample ID: C02040908-001AMS Oxygen Demand, Chemical (COD)	Sample Matrix Spike 5180	mg/kg	10.0	101	85	115			05/02/02 17:53
Sample ID: C02050060-005CMS Oxygen Demand, Chemical (COD)	Sample Matrix Spike 519	mg/L	1.00	104	85	115			05/02/02 18:16
Method: SW7470A							Batch: 448		
Sample ID: R02040328-001ADUP Mercury	Sample Duplicate ND	mg/L	0.000200				0	10	05/03/02 11:05
Sample ID: R02040328-002AMS Mercury	Sample Matrix Spike 0.00194	mg/L	0.000200	97	80	120			05/03/02 11:09
Sample ID: R02040328-002AMSD Mercury	Sample Matrix Spike Duplicate 0.00191	mg/L	0.000200	95.5	80	120	1.56	10	05/03/02 11:10

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Chain of Custody and Analytical Request Record

PLEASE PRINT, provide as much information as possible.
Refer to corresponding notes on reverse side.

Company Name: DEZURIK Report Address: TIM KENYON LEGGITTE BRASHLEAKS + GEMMANN, INC. 1113 EAST 14th STREET SIOUX FALLS SD 57104 Invoice Address:	Project Name, PWS #, Permit #, Etc.: DEZURIK LANDFILL Contact Name, Phone, Fax, E-mail: Tim Kenyon 605-334-6000 Invoice Contact & Phone #:	Sampler Name if other than Contact: CRALG HEGNA 651-490-1405 Purchase Order #:	ELI Quote #:																																	
Report Required For: <input type="checkbox"/> POTW/WTP <input type="checkbox"/> DW <input type="checkbox"/> Other _____ Special Report Formats - ELI must be notified prior to sample submittal for the following: NELAC <input type="checkbox"/> A2LA <input type="checkbox"/> Level IV <input type="checkbox"/> Other _____ EDD/EDT <input type="checkbox"/> Format _____	Notify ELI prior to RUSH sample submittal for additional charges and scheduling Comments:																																			
Number of Containers Sample Type: AWSVU Air Water Soils/Solids Vegetation Urine Other	ANALYSIS REQUESTED DISOLVED METALS CHLORIDE COD/PHENOLS TOC CL, FL, SO ₄ NO ₃ TDS, PH, CONDUCTIVITY SEE ATTACHED Normal Turnaround (TA) <input checked="" type="checkbox"/> RUSH Turnaround (TA) <input type="checkbox"/>			Receipt Temp _____ °C Cooler ID(s) _____ Custody Seal Y N Intact Y N Signature Y N Match Y N Lab ID _____																																
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)</th> <th>Collection Date</th> <th>Collection Time</th> </tr> </thead> <tbody> <tr> <td>1 P-13</td> <td>4-29-02</td> <td>9:33</td> </tr> <tr> <td>2 P-5R</td> <td></td> <td>10:35</td> </tr> <tr> <td>3 P-9R</td> <td></td> <td>11:29</td> </tr> <tr> <td>4 P-12R</td> <td></td> <td>13:22</td> </tr> <tr> <td>5 DUPLICATE</td> <td></td> <td></td> </tr> <tr> <td>6</td> <td></td> <td></td> </tr> <tr> <td>7</td> <td></td> <td></td> </tr> <tr> <td>8</td> <td></td> <td></td> </tr> <tr> <td>9</td> <td></td> <td></td> </tr> <tr> <td>10</td> <td></td> <td></td> </tr> </tbody> </table>	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	1 P-13	4-29-02	9:33	2 P-5R		10:35	3 P-9R		11:29	4 P-12R		13:22	5 DUPLICATE			6			7			8			9			10			LABORATORY USE ONLY Received by: OTHEL FRIEDL Date/Time: 4-30-02 9:45 Received by:		
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Custody Record MUST be Signed	Relinquished by: _____ Date/Time: 4/29/02 1545 Relinquished by: _____ Date/Time:																																			
Sample Disposal: _____ Return to client: _____ Lab Disposal: X	Sample Type: _____ # of fractions _____ LABORATORY USE ONLY																																			



Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

June 14, 2002

Mr. Tim Kenyon
Leggette, Brashears & Graham
1113 E. 14TH STREET
Sioux Falls, SD 57104

RE: Lab Project Number: 1056926
Client Project ID: Dezurik Lndfl 65ARTST/DESHWL

Dear Mr. Kenyon:

Enclosed are the analytical results for sample(s) received by the laboratory on April 30, 2002. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report please feel free to contact me.

Sincerely,

for

Diane J. Anderson
Diane.Anderson@pacelabs.com
Project Manager

State of Minnesota laboratory 027-053-137

Enclosures



REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 1056926

Client Project ID: Dezurik Lndfl 65ARTST/DESHWL

***ALL QC IS NOT COMPLETE FOR QC SAMPLE(S):
ESN 103517082 BATCH 73036



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Lab Project Number: 1056926
 Client Project ID: Dezurik Lndfl 65ARTST/DESHWL

Lab Sample No: 103501250 Project Sample Number: 1056926-001 Date Collected: 04/29/02 10:35
 Client Sample ID: P-5R Matrix: Water Date Received: 04/30/02 10:00

Parameters Results Units Report Limit Analyzed By CAS No. Qual ReqLmt

Metals

Mercury, CVAAS, Dissolved Method: EPA 245.1
 Mercury, Dissolved ND ug/l 0.200 05/08/02 BDA 7439-97-6

Metals, Trace ICP, Dissolved Prep/Method: EPA 3010 / EPA 6010

Arsenic, Dissolved ND ug/l 10.0 05/08/02 09:26 BDA 7440-38-2
 Barium, Dissolved 54.0 ug/l 10.0 05/08/02 09:26 BDA 7440-39-3
 Boron, Dissolved 916. ug/l 150. 05/08/02 09:26 BDA 7440-42-8
 Cadmium, Dissolved ND ug/l 1.00 05/08/02 09:26 BDA 7440-43-9
 Calcium, Dissolved 137000 ug/l 500. 05/08/02 09:26 BDA 7440-70-2
 Chromium, Dissolved ND ug/l 10.0 05/08/02 09:26 BDA 7440-47-3
 Copper, Dissolved 5.11 ug/l 5.00 05/08/02 09:26 BDA 7440-50-8
 Iron, Dissolved ND ug/l 50.0 05/08/02 09:26 BDA 7439-89-6
 Lead, Dissolved ND ug/l 6.00 05/08/02 09:26 BDA 7439-92-1
 Magnesium, Dissolved 39900 ug/l 500. 05/08/02 09:26 BDA 7439-95-4
 Manganese, Dissolved ND ug/l 5.00 05/08/02 09:26 BDA 7439-96-5
 Potassium, Dissolved ND ug/l 2500 05/08/02 09:26 BDA 7440-09-7
 Selenium, Dissolved ND ug/l 15.0 05/08/02 09:26 BDA 7782-49-2
 Sodium, Dissolved 29000 ug/l 1000 05/08/02 09:26 BDA 7440-23-5
 Zinc, Dissolved ND ug/l 20.0 05/08/02 09:26 BDA 7440-66-6
 Date Digested 05/03/02

Wet Chemistry

Specific Conductance Method: EPA 120.1
 Specific Conductance 950. umhos/cm 1.00 05/14/02 18:25 BJR1

pH, Water Method: EPA 150.1
 pH 7.1 0.1 05/01/02 18:30 BJR1

Total Dissolved Solids Method: EPA 160.1
 Total Dissolved Solids 717. mg/l 10.0 05/03/02 JDL

Anions, Ion Chromatography Method: EPA 300.0
 Fluoride 0.160 mg/l 0.100 05/03/02 BKR 16984-48-8
 Chloride 34.6 mg/l 10.0 05/03/02 BKR 16887-00-6
 Sulfate 141. mg/l 50.0 05/03/02 BKR

Cyanide, Total, Water Method: EPA 335.2
 Cyanide ND mg/l 0.0100 05/08/02 BKR 57-12-5



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Lab Project Number: 1056926
 Client Project ID: Dezurik Lndfl 65ARTST/DESHWL

Lab Sample No: 103501250 Project Sample Number: 1056926-001 Date Collected: 04/29/02 10:35
 Client Sample ID: P-5R Matrix: Water Date Received: 04/30/02 10:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	ReqLmt
Nitrogen, Nitrate/Nitrite	Method: EPA 353.2							
Nitrogen, Nitrate	6.37	mg/l	0.100	05/01/02	HMJ			
Chemical Oxygen Demand, Low	Method: EPA 410.2							
Chemical Oxygen Demand	ND	mg/l	10.0	05/07/02	TEM			
Phenolics Total. in Water	Method: EPA 420.1							
Phenol	ND	ug/l	50.0	05/09/02	TEM	108-95-2		



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Lab Project Number: 1056926

Client Project ID: Dezurik Lndfl 65ARTST/DESEWL

PARAMETER FOOTNOTES

ND Not detected at or above adjusted reporting limit
NC Not Calculable
J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL Adjusted Method Detection Limit

Date: 06/14/02

Page: 3



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QUALITY CONTROL DATA

Lab Project Number: 1056926
 Client Project ID: Dezurik Lndfl 65ARTST/DESHWL

LABORATORY CONTROL SAMPLE: 103504932

Parameter	Units	Spike	LCS	LCS	Footnotes
		Conc.	Result	% Rec	
Potassium, Dissolved	ug/l	60000	58850	98	
Selenium, Dissolved	ug/l	1000.00	912.5	91	
Sodium, Dissolved	ug/l	50000	48450	97	
Zinc, Dissolved	ug/l	1000.00	893.7	89	

SAMPLE DUPLICATE: 103504924

Parameter	Units	103489027	DUP	RPD	Footnotes
		Result	Result		
Arsenic, Dissolved	ug/l	18.00	17.10	5	
Barium, Dissolved	ug/l	60.00	59.50	1	
Cadmium, Dissolved	ug/l	ND	ND	NC	
Calcium, Dissolved	ug/l	205000	205000	0	
Chromium, Dissolved	ug/l	ND	ND	NC	
Copper, Dissolved	ug/l	8.970	8.730	3	
Iron, Dissolved	ug/l	1740	1700	2	
Lead, Dissolved	ug/l	ND	ND	NC	
Magnesium, Dissolved	ug/l	50700	50500	0	
Manganese, Dissolved	ug/l	1330	1320	0	
Potassium, Dissolved	ug/l	4420	4440	0	
Selenium, Dissolved	ug/l	ND	ND	NC	
Sodium, Dissolved	ug/l	65600	65500	0	
Zinc, Dissolved	ug/l	25.20	26.60	5	



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Lab Project Number: 1056926
Client Project ID: Dezurik Lndfl 65ARTST/DESEWL

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D) Laboratory Control Sample (Duplicate)
MS(D) Matrix Spike (Duplicate)
DUP Sample Duplicate
ND Not detected at or above adjusted reporting limit
NC Not Calculable
J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL Adjusted Method Detection Limit
RPD Relative Percent Difference
[1] The spike recovery was outside of acceptance limits.



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