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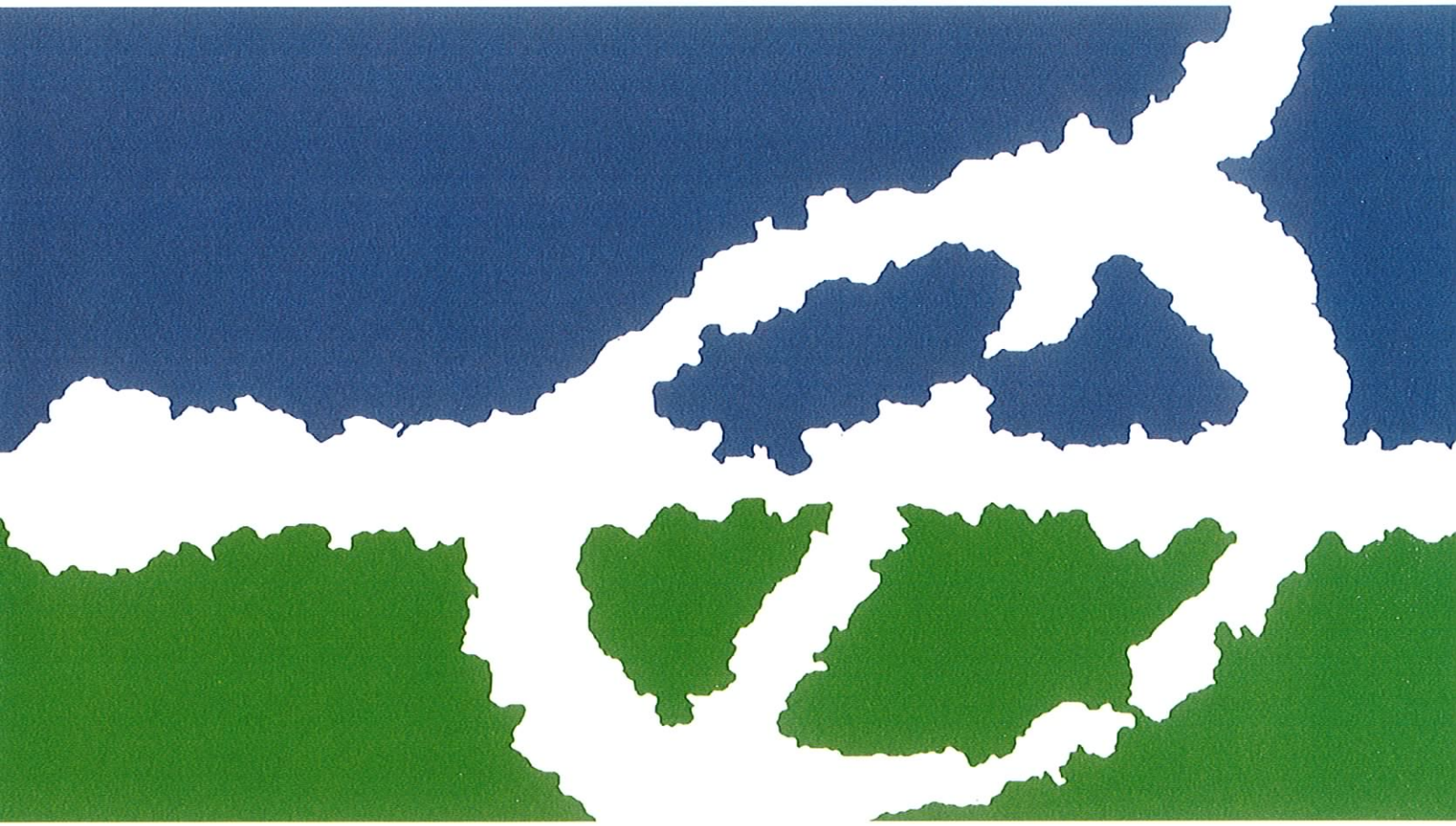
& PLANNERS



2007 POST-CLOSURE ANNUAL REPORT
Coakley Landfill
Operable Unit-1 and Operable Unit-2
North Hampton, New Hampshire

2007 POST-CLOSURE ANNUAL MONITORING REPORT

COAKLEY LANDFILL
OPERABLE UNIT-1 and OPERABLE UNIT-2
NORTH HAMPTON, NEW HAMPSHIRE
NHDES SITE #198712001
EPA ID #NHD064424153

Prepared For:
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Professional Geologist Certification
Kevin M. McKibben, P.G.

July 7, 2008

Project No. M7157

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1.0 INTRODUCTION

At the request of the Coakley Landfill Group, Provan & Lorber, Inc. has performed post-closure monitoring for the former Coakley Landfill site (the "Site"), located in North Hampton and Greenland, New Hampshire. The Site includes approximately 92-acres located within the towns of North Hampton and Greenland, New Hampshire. The actual landfill covers approximately 27 acres. The Site is located between about 400 to 800 feet west of Lafayette Road (U.S. Rt. 1), south of Breakfast Hill Rd, and about 2.5 miles northeast of the center of the Town of North Hampton, New Hampshire. The Greenland-Rye town line forms a major portion of the eastern boundary of the Site. The landfill borders farmland, undeveloped woodlands and wetlands to the north and west. Commercial and residential properties border the Site to the east and south. Background information has been summarized in numerous previous reports, including the Project Operations Plan (POP), prepared in September 2007 by Golder Associates. A Site Location Map is included as **Figure 1**.

Groundwater monitoring was performed in accordance with the POP and Environmental Monitoring Plan (EMP) dated September 2007, with the exceptions noted in section 2.1, below. Additional monitoring well analyses were performed in accordance with an email dated September 14, 2007. Additional surface water and sediment monitoring was performed in accordance with a document titled "Sediment and Surface Water Toxicity Testing Sampling and Analytical Requirements", with the exceptions noted in Section 2.2, below.

2.0 MONITORING AND SAMPLING PROCEDURES

2.1 Groundwater Sampling Procedures

Water levels were measured in selected monitoring wells using an electronic water-level indicator prior to sampling. The calculated groundwater elevations are summarized on **Table 1**.

Monitoring wells were purged and sampled following low flow sampling techniques using dedicated Teflon-lined polyethylene tubing and a peristaltic pump. Prior to sampling, wells were purged, at a rate of approximately 1 cup per minute for between 15 and 90 minutes, until stabilization of the following monitoring parameters: temperature, pH, specific conductance, oxidation reduction potential (ORP), dissolved oxygen, and turbidity. Final stabilization readings are included on **Tables 2 and 3**. Samples were also collected from domestic wells R-3 and R-5, located at 399 and 364 Breakfast Hill Road, respectively. The water was allowed to run for 10 to 15 minutes prior to sampling. Measurements were collected for the above-described stabilization parameters.

Upon collection, each water sample was placed in pre-cleaned laboratory glassware and plastic containers, preserved as appropriate for target compounds. Samples for analysis

of dissolved metals were field filtered prior to preservation. Samples were packaged on ice in a shipping cooler and delivered to Eastern Analytical Inc. for laboratory analysis.

Samples were collected following the schedule summarized in Tables 2-2, 2-3, and 2-4 of the EMP and Additional Item 2, as described in an email dated September 14, 2007, with the following exceptions. Well RMW-3, was found to be obstructed at 20 feet and could not be sampled. The depth to water in well MW-4 was too great to allow sampling using the peristaltic pump. Therefore, MW-4 was purged and sampled using a submersible "whale pump". The depth to water in well AE-1B was also too deep to allow sampling using the peristaltic pump. AE-1B also had a bent casing that did not allow the whale pump to pass, and therefore this well could not be sampled. Well GZ-109 could not be located and is believed to have been destroyed. Copies of the sampling schedule tables are included in **Section 1**. Sample locations are illustrated on **Figure 2 – Site Plan**.

2.2 Surface Water and Sediment Sampling Procedures

Surface water and sediment samples were collected following the sampling schedule outlined in Table 2-5 of the EMP. Additional surface water and sediment samples were collected as outlined in the document titled "Sediment and Surface Water Toxicity Testing Sampling and Analytical Requirements" and an email dated September 14, 2007, except as described below. These documents are included in **Section 1**.

Surface water and leachate samples were collected using a peristaltic pump. Sample tubing was decontaminated prior to collection of each sample. Measurements were collected for temperature, pH, specific conductance, ORP, dissolved oxygen, and turbidity. Samples were packaged on ice in a shipping cooler and delivered to Eastern Analytical Inc. for laboratory analysis.

Sediment samples were collected using a shovel. The shovel was decontaminated prior to collection of each sample. Each sample was placed in a lined bucket where plant material and rocks were removed. The sample was thoroughly mixed and preserved. An aliquot of each sample was preserved, packaged on ice in a shipping cooler and delivered to Eastern Analytical Inc. for laboratory analysis. Two one-gallon plastic buckets of each sample were delivered to Envirosystems, Inc. and held for subsequent toxicology testing, as determined by the EPA and Coakley Landfill Group. Sample S-SED-5/SED-3T-1107 was subsequently selected for analysis by EPA Method 100.2 for larval midge (Chironomus tentans) and EPA Method 100.1 for amphipod (Hyallela azteca).

Surface water location SW-4T was dry and therefore could not be sampled. A sediment sample could not be collected from location L-1. This area was covered in rocks, underlain by a filter fabric and more rocks. Sediment and surface water sample locations are indicated on **Figure 3**.

2.3 Quality Control Samples

Duplicate samples were collected from MW-6 and analyzed for VOCs, total TAL metals, and for dissolved iron and manganese. Duplicate samples were collected from FPC-6A and analyzed for VOCs, total TAL metals, dissolved iron and manganese, sulfate, chloride, carbonate, and bicarbonate.

Matrix spike (MS) and matrix spike duplicate (MSD) samples were collected from MW-11 for use in QA/QC for VOCs and total metals. Sample FPC-7B was used for MS/MSD for bicarbonate. Sample AE-3B was used for MS/MSD for total metals.

A duplicate sample was collected from the leachate location and analyzed for VOCs, total and dissolved TAL metals, COD, ammonia, and cyanide. MS and MSD samples were collected from surface water location SW-5T for use in QA/QC for total metals and ammonia. Sample SW-5 was used for MS/MSD for VOCs, metals (total and dissolved), cyanide, and ammonia.

Following collection of surface water samples and decontamination procedures, deionized water was used to collect an equipment blank sample from the tubing used to collect the surface water samples.

A duplicate sample was collected from sediment location SED-5/SED-3T and analyzed for total TAL metals and cyanide. MS/MSD samples were collected from sediment location SED-4T for use in QA/QC for metals and cyanide. The sediment sample from SED-103 was used as an MS/MSD sample for cyanide.

Following collection of sediment samples and decontamination procedures, deionized water was used to collect an equipment blank sample from the shovel used to collect the sediment samples.

Each set of samples sent to the laboratory was accompanied by a trip blank that was analyzed for VOCs.

An EPA Region I, Tier II data validation was performed for the analytical laboratory data by *Environmental Data Validation, Inc*.

3.0 FINDINGS

3.1 Groundwater Results

The general groundwater flow direction was determined to be westerly in both the overburden and bedrock wells. Groundwater contours constructed from the November 2007 water table data for overburden wells and bedrock wells are illustrated in **Figures 4 and 5**.

Concentrations of arsenic exceeded the interim cleanup level (ICL) in Operable Unit 1 (OU-1) in the following wells: MW-4, MW-5S, MW-5D, MW-8, MW-9, MW-10, MW-11, OP-2, OP-5 and BP-4.

Concentrations of chromium, lead, and nickel exceeded the ICLs in OU-1 well MW-4.

Concentrations of manganese exceeded the ICL in OU-1 in the following wells: MW-4, MW-5S, MW-5D, MW-6, MW-8, MW-9, MW-10, MW-11, OP-2, OP-5, and BP-4.

The concentration of tetrahydrofuran exceeded the ICL in OU-1 well MW-8.

The concentration of benzene exceeded the ICL in OU-1 well MW-11.

Methyl tertiary-butyl ether was detected in the sample collected from domestic well R-3 at a concentration of 1.6 µg/l, below the ICL of 13 µg/l.

Concentrations of arsenic exceeded the ICL in Operable Unit 2 (OU-2) in the following wells: FPC-5A, FPC-9A, GZ-105, AE-1A, AE-2A, AE-2B, AE-3A, and AE-3B.

The concentration of lead exceeded the ICL in OU-2 well AE-1A.

The concentration of beryllium exceeded the ICL in OU-2 well FPC-4B.

Concentrations of manganese exceeded the ICL in OU-1 in the following wells: FPC-2A, FPC-6A, FPC-6B, FPC-9A, FPC-11A, FPC 11B, GZ-105, GZ-123, AE-2A, AE-2B, AE-3A, AE-3B, and AE-4B.

Concentrations of benzene exceeded the ICL in OU-2 wells GZ-105 and AE-2B.

The concentration of dissolved manganese in AE-4B was below the ICL, while total manganese exceeded the ICL. For the remaining well sampled for dissolved iron and manganese, concentration of dissolved metals exceeded ICLs where concentrations of total metals exceeded ICLs.

MTBE was detected in the sample collected from residential well R-3 at a concentration of 1.6 µg/l, below the New Hampshire GW-1 standard of 13 µg/l.

Groundwater analytical results for OU-1 and OU-2 wells are summarized on **Tables 2 and 3**, respectively. Residential well results are summarized on **Table 4**. The laboratory reports are included in **Section 2**.

The lateral distributions of arsenic and manganese in overburden and bedrock wells are illustrated on **Figures 6 through 9**. Charts illustrating contaminant concentrations over time for arsenic, manganese, and benzene in selected wells are included in **Section 3**.

3.2 Surface Water Results

3.2.1 Total Metals

Concentrations of aluminum exceeded the DES chronic surface water standard at surface water locations SW-4, SW-5/SW-3T, SW-1T, SW-5T, and SW-6T. The concentration in SW-1T also exceeded the DES acute surface water standard.

Concentrations of copper exceeded the DES chronic surface water standard at surface water locations SW-4, SW-5/SW-3T, SW-103, SW-1T, and SW-2T. All concentrations were below the acute surface water standard.

Concentrations of iron exceeded the DES chronic surface water standard at surface water locations SW-5/SW-3T, SW-103, SW-1T, and L-1.

Concentrations of lead exceeded the DES chronic surface water standard at surface water locations SW-5/SW-3T, SW-1T, and SW-6T. All concentrations were below the acute surface water standard.

The concentration of zinc exceeded the DES acute and chronic surface water standards at surface water location SW-5T.

3.2.2 Dissolved Metals

Concentrations of aluminum exceeded the DES chronic surface water standard at surface water locations SW-4, SW-5T, and SW-6T. All concentrations were below the acute surface water standard.

Concentrations of copper exceeded the DES chronic surface water standard at surface water locations SW-1T, SW-2T, SW-5T, and SW-6T. The concentration in SW-2T also exceeded the acute surface water standard.

The concentration of iron exceeded the DES chronic surface water standards at leachate location L-1.

Concentrations of zinc exceeded of the DES chronic and acute surface water standards at surface water locations SW-4, SW-5/SW-3T, SW-103, SW-1T, SW-2T, SW-5T, SW-6T, and L-1.

3.2.3 Non-Metals Analyses

Concentrations of ammonia exceeded the DES chronic surface water standard at surface water locations SW-2T and L-1.

Surface water analytical results are summarized on **Table 5**. Historic results for SW-5 are summarized on **Table 6**. Leachate results are summarized on **Table 7**. The laboratory reports are included in **Section 2**.

3.3 Sediment Sample Results

Concentrations of arsenic exceeded the NHDES S-1 soil standard at sediment locations SED-5/3T, SED-1T, SED-2T, and SED-4T.

The concentration of lead exceeded the S-1 standard at sediment location SED-5/3T.

The concentration of beryllium exceeded the S-1 standard at sediment location SED-2T.

A summary of the sediment samples is included on **Table 8**. The laboratory reports are included in **Section 2**.

3.4 Quality Control Sample Results

Tetrahydrofuran was detected in the leachate sample at a concentration of 20 µg/l and in the duplicate leachate sample at a concentration of 10 µg/l.

Carbon disulfide was detected in the trip blank in lab report 66089. However, this compound was not detected in the remaining samples in that batch. VOCs were not detected in the remaining trip blank samples.

Ammonia was detected in the tubing blank sample at a concentration of 0.07 mg/l. For the surface water samples, ammonia was either not detected or was detected at concentrations several times the concentration in the tubing blank sample.

Arsenic, barium, calcium, copper, magnesium, nickel, potassium, sodium, and zinc were detected in the tubing blank sample.

Arsenic, copper, sodium, and zinc were detected in the surface water samples at concentrations similar to the tubing blank sample. Concentrations of barium and potassium in surface water sample SW-6T were similar to the concentrations in the tubing blank. Concentrations of barium and potassium in the remaining surface water samples were higher than the tubing blank. Concentrations of calcium and magnesium in the surface water samples were much higher than in the tubing sample.

Arsenic, barium, calcium, iron, magnesium, potassium, and sodium were detected in the shovel blank sample

Significant differences were noted in the concentrations of metals in sediment sample SED-5/SED-3T and its duplicate sample.

3.5 Data Validation Review

Listed under Calibration Quality Control, some sample results exceeded the 20%D criterion and were qualified as estimated "UJ". However, Provan & Lorber notes that none of the noted compounds were detected in any of the samples.

Report No. 66004: The concentration of total iron in the sample collected from MW-6 was quantified as estimated, due to precision issues with the duplicate sample.

Report No. 66089: The detected concentrations of zinc in four groundwater samples were qualified as estimated due to calibration exceedance. Matrix spike results for antimony exceeded the required QC limits. Therefore, four sediment samples were qualified. The concentration of several metals in sample SED-5/SED-3T was quantified as estimated, due to precision issues with the duplicate sample.

Report No. 66133: Cobalt report recoveries were outside the required QC limits, resulting in the concentrations of cobalt in five groundwater samples being qualified as estimated

Report No. 67495: Recoveries in the laboratory control samples for dichlorodifluoromethane and 2,2-dichloropropane were below the required QC limits, resulting in an extremely low bias. Results for these two compounds for the domestic well samples were qualified as unusable. Results for both compounds in both samples were reported as <0.5 µg/l. The New Hampshire Method 1 Groundwater (GW-1) standard for dichlorodifluoromethane is 1,000 µg/l. No data was available for 2,2-dichloropropane. These compounds have not been previously detected and do not appear to be of concern at this Site.

The data validation reports are included in **Section 4**.

3.6 Toxicity Sample Results

For both toxicity tests performed, no significant difference between the laboratory control and the Site sediment sample was observed. The toxicity laboratory reports are included in **Section 5**.

4.0 SUMMARY AND CONCLUSIONS

Based on data collected at the Site during 2007, Provan & Lorber concludes the following:

- Water samples were collected from 35 monitoring wells, 7 surface water location, 1 leachate location, and 2 domestic wells. Eight sediment soil samples were also collected.

- Groundwater flows in both overburden and bedrock wells were calculated to be westerly during the November 2007 monitoring event, consistent with previous monitoring events.
- An upward hydraulic gradient was observed at well pairs FPC-6A/B, FPC-7A/B, and FPC-8A/B. Downward hydraulic gradients were observed in the remainder of the well pairs at the Site.
- Interim cleanup levels (ICLs) were exceeded in samples collected from all eleven (11) monitoring wells in Operational Unit #1. ICLs were exceeded in samples collected from sixteen (16) of twenty four (24) monitoring wells in Operational Unit #2. The most common exceedences were for arsenic and manganese. Exceedences were also noted for chromium, lead, nickel, beryllium, antimony, benzene, and tetrahydrofuran.
- Concentrations of target compounds were generally consistent with historical results. Concentrations have remained generally stable to decreasing at the Site with slight increasing trends in some wells and decreasing trends in others.
- MTBE was detected in the sample collected from domestic well R-3 at a concentration of 1.6 µg/l. No other compounds were detected in the samples collected from the two domestic wells.
- NHDES surface water standards were exceeded in all seven surface water samples and the leachate sample collected in 2007. Exceedences were noted for aluminum, copper, iron, lead, zinc, and ammonia.
- NHDES S-1 soil standards were exceeded for arsenic in sediment samples collected from four (4) of the eight (8) sample locations. Exceedences were also noted for lead and beryllium in one sediment sample each.
- Ammonia was detected in the tubing blank sample at a concentration of 0.07 mg/l. For the surface water samples, ammonia was either not detected or was detected at concentrations several times the concentration in the tubing blank sample. Based on this data, cross contamination for ammonia does not appear to be an issue in regards to the tubing.
- Arsenic, barium, calcium, copper, magnesium, nickel, potassium, sodium, and zinc were detected in the tubing blank sample.
- Arsenic, copper, sodium, and zinc were detected in the surface water samples at concentrations similar to the tubing blank sample. Concentrations of barium and potassium in surface water sample SW-6T were similar to the concentrations in the tubing blank. Concentrations of barium and potassium in the remaining surface water samples were higher than the tubing blank. Concentrations of calcium and magnesium in the surface water samples were much higher than in the tubing sample.
- Concentrations of arsenic, barium, and potassium in the tubing blank are significantly below the NHDES surface water or GW-1 standards. Surface water and GW-1 standards have not been established for sodium. The presence of these compounds in the tubing blank does not appear to impact the conclusions for the Site.

- The concentrations of copper and zinc in the tubing sample were similar to the concentrations in the surface water samples and were at or near the surface water standards. There is the potential that the concentrations of copper and zinc exceeded the surface water standards due to cross contamination.
- Arsenic, barium, calcium, iron, magnesium, potassium, and sodium were detected in the shovel blank sample. In general, the same compounds were detected in tubing and shovel blank samples at similar concentrations. There is the possibility that these compounds were present in the water used to prepare the tubing and shovel blanks or that laboratory contamination has impacted these results.
- The data validation review indicated that concentrations of several compounds were qualified as estimated due to calibration issues and variations with the duplicate samples.
- No other significant quality control discrepancies were noted.
- For both toxicity tests performed, no significant difference between the laboratory control and the Site sediment sample was observed.

5.0 RECOMMENDATIONS

Based on data collected at the Site, Provan & Lorber recommends the following:

- In accordance with the current monitoring plan, the next monitoring event should be scheduled for August 2008.

If you have any questions, please do not hesitate to call us at (603) 746-3220.

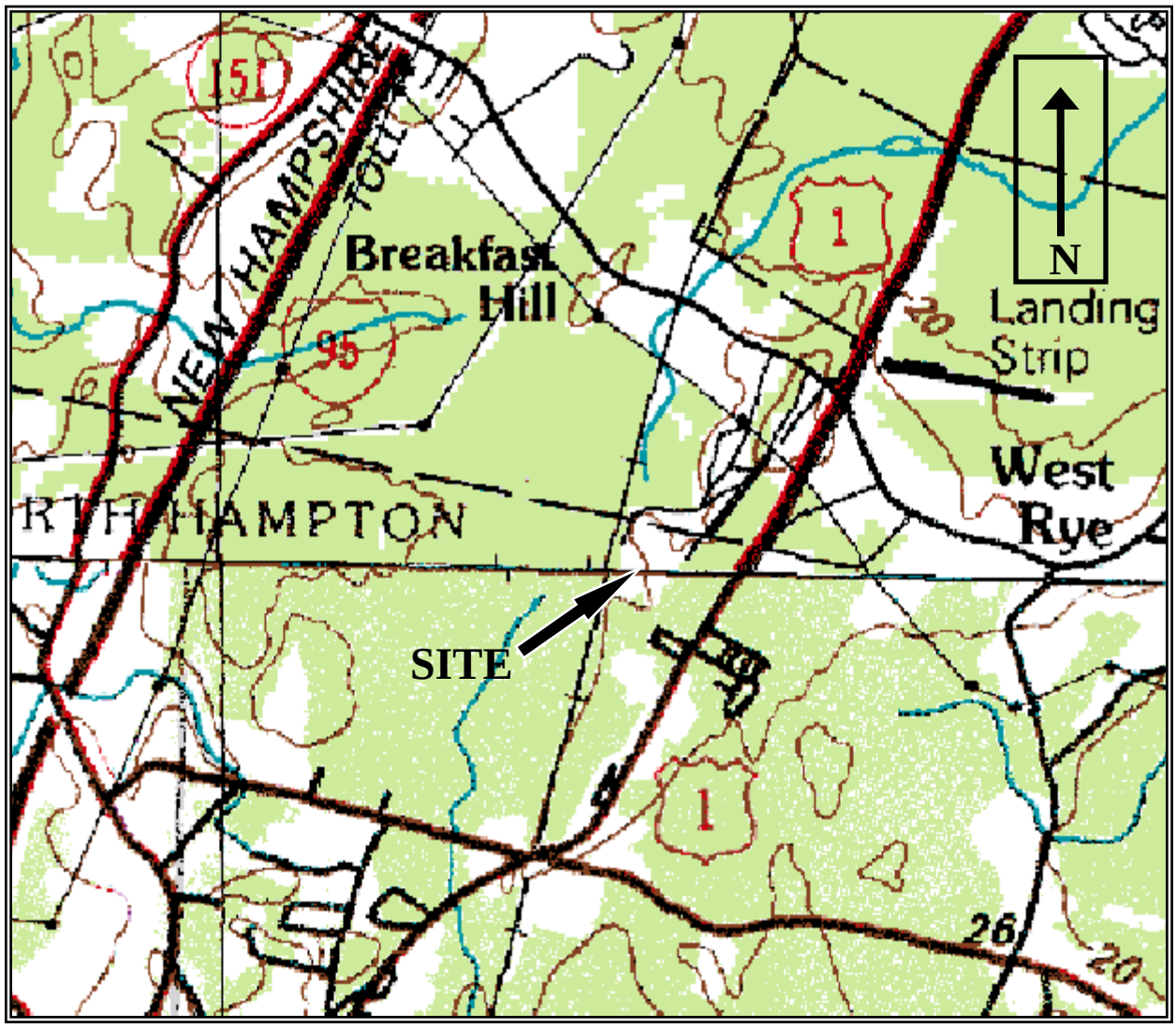
Sincerely,

Ian R. Grady
Environmental Technician
Provan & Lorber, Inc.

Kevin McKibben, P.G.
Environmental Department Manager
Provan & Lorber, Inc.

N:\M7157 Coakley Landfill\DOCS\REPORTS\Annual Rpt 2007.doc

FIGURES



Map Based on USGS
Dover, NH (1985)
and
Exeter, NH (1977)
Quadrangle Maps, 15' Series

Figure 1

LOCATION MAP

Coakley Landfill

North Hampton, NH

Provan & Lorber, Inc. Project M7157
April 2008

LEGEND

- L-1 — LEACHATE SAMPLING LOCATION
- WELL ID — OVERBURDEN MONITORING WELL
- WELL ID — BEDROCK MONITORING WELL
- SW-5 — SURFACE WATER SAMPLING LOCATION
- SED-5 — SEDIMENT SAMPLING LOCATION
- GROUNDWATER MANAGEMENT ZONE
- BROOK

GRID NORTH

FPC-4B
AE-4A
AE-4B
GZ-105
SW-SED-4
FPC-8B
FPC-8A
FPC-6A
FPC-6B
FPC-5A
FPC-5B
SW-SED-6t
SW-SED-4t
AE-2B
AE-2A
SW-SED-5t
MW-8
MW-9
MW-10
FPC-2B
FPC-2A
MW-11
SW-SED-2t
SW-SED-103
AE-3A
GZ-123
GZ-125
MW-2
MW-5S
MW-5D
L-1
SW-SED-5/3t
AE-3B
MW-6
SW-SED-1t
FPC-7A
FPC-7B
MW-4
OP-2
BP-4
RMW-3
OP-5
FPC-11A
FPC-11B
AE-1B
AE-1A
FPC-9A
FPC-9B
FPC-9C
NORTH HAMPTON STATE FREELAND
R-3
R-5

0 500 1,000 1,500

SCALE: 1"=500'

NOTES:

1. BASE PLAN PROVIDED TO PROVAN & LORBER, INC. BY HANCOCK ASSOCIATES.

PLAN REFERENCE: ARIES ENGINEERING, INC. PLAN DATED APRIL 2004, ENTITLED "2003 ANNUAL REPORT MONITORING PLAN DATA ASSESSMENT REPORT, COAKLEY LANDFILL, NORTH HAMPTON, NEW HAMPSHIRE, SITE PLAN.

2. ADDITIONAL MONITORING WELL LOCATIONS BASED ON PLAN BY GOLDER ASSOCIATES TITLED "ENVIRONMENTAL MONITORING NETWORK" DATED 08/16/07.

3. SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS BASED ON A SEPTEMBER 2007 PLAN FROM THE CITY OF PORTSMOUTH TITLED "SEDIMENT TOXICITY SAMPLE LOCATIONS".

NO.	DATE	REVISION	ENG	DWG

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03229
603 746-3220

Littleton, NH
101 Cottage Street
03561
603 444-6301

COAKLEY LANDFILL
NORTH HAMPTON, NH

SITE PLAN

DATE	
APRIL 2008	
ENG. BY: ENG	DRWN. BY: DRWN
CHKD.BY: KMM	PROJ. NO.: M7157

FIGURE 2

Sediment Toxicity Sample Locations

LEGEND

WELL ID
ELEV.

OVERBURDEN MONITORING WELL

GROUNDWATER MANAGEMENT ZONE

ELEV. CONTOUR

BROOK

CONTOURS BASED ON DATA COLLECTED
NOVEMBER 2007

GRID NORTH

AE-4A
72.91'

FPC-6A
72.38'

FPC-8A
72.20'

FPC-5A
73.50'

AE-2A
74.69'

MW-9
75.80'

MW-10
74.95'

75.0'

FPC-2A
75.90'

GZ-123

MW-2
88.61'

AE-3A
77.90'

80.0'

MW-5S
86.00'

85.0'

GROUNDWATER FLOW DIRECTION

FPC-7A
81.30'

90.0'

MW-4
96.17'

OP-2
90.77'

RMW-3

95.0'

OP-5
96.04'

FPC-11A

AE-1A
95.89'

NORTH HAMPTON RIVER GREENLAND

FPC-9A
95.48'

FPC-9C
96.08'

R-3

R-5

0 500 1,000 1,500

SCALE: 1"=500'

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03561
603 444-6301

COAKLEY LANDFILL
NORTH HAMPTON, NH

OVERBURDEN GROUNDWATER ELEVATION CONTOUR MAP
NOVEMBER 2007

DATE	
APRIL 2008	
ENG. BY: ENG	DRWN. BY: DRWN
CHKD.BY: KMM	PROJ. NO.: M7157

FIGURE 4

LEGEND

WELL ID
ELEV.
BEDROCK MONITORING WELL

GROUNDWATER MANAGEMENT ZONE

ELEV. CONTOUR

BROOK

CONTOURS BASED ON DATA COLLECTED
NOVEMBER 2007

GRID NORTH

AE-4B
72.28'

FPC-4B
70.95'

GZ-105
70.68'

FPC-6B
70.19'

FPC-8B
72.03'

75.0'

AE-2B
74.22'

FPC-5B
74.50'

MW-8
76.89'

FPC-2B
76.90'

MW-11
81.07'

80.0'

85.0'

90.0'

GZ-125

MW-6
90.52'

MW-5D
87.28'

AE-3B
78.47'

R-3

R-5

GROUNDWATER FLOW DIRECTION

FPC-7B
79.43'

BP-4
95.72'

95.0'

FPC-11B

AE-1B
95.87'

NORTH HAMPTON RIVER GREENLAND

FPC-9B
95.14'

0 500 1,000 1,500

SCALE: 1"=500'

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COAKLEY LANDFILL
NORTH HAMPTON, NH

BEDROCK GROUNDWATER
ELEVATION CONTOUR MAP
NOVEMBER 2007

DATE	
APRIL 2008	
ENG. BY: ENG	DRWN. BY: DRWN
CHKD.BY: KMM	PROJ. NO.: M7157

FIGURE 5

LEGEND

WELL ID
CONCENTRATION (ug/l) — OVERBURDEN MONITORING WELL

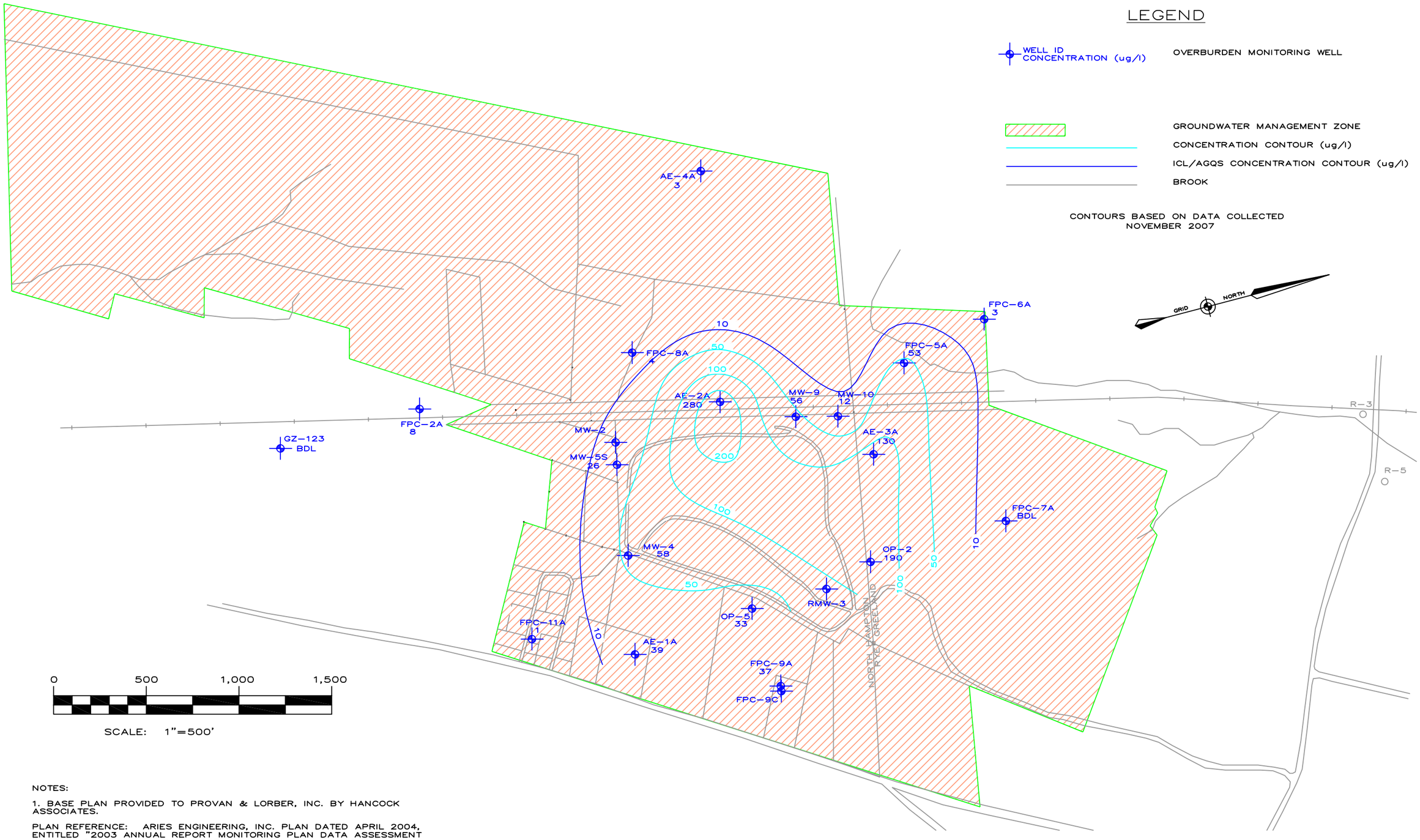
GROUNDWATER MANAGEMENT ZONE

CONCENTRATION CONTOUR (ug/l)

ICL/AGQS CONCENTRATION CONTOUR (ug/l)

BROOK

CONTOURS BASED ON DATA COLLECTED
NOVEMBER 2007



NOTES:

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PLAN REFERENCE: ARIES ENGINEERING, INC. PLAN DATED APRIL 2004, ENTITLED "2003 ANNUAL REPORT MONITORING PLAN DATA ASSESSMENT REPORT, COAKLEY LANDFILL, NORTH HAMPTON, NEW HAMPSHIRE, SITE PLAN.

2. ADDITIONAL MONITORING WELL LOCATIONS BASED ON PLAN BY GOLDER ASSOCIATES TITLED "ENVIRONMENTAL MONITORING NETWORK" DATED 08/16/07.

3. SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS BASED ON A SEPTEMBER 2007 PLAN FROM THE CITY OF PORTSMOUTH TITLED "SEDIMENT TOXICITY SAMPLE LOCATIONS".

NO.	DATE	REVISION	ENG	DWG

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COAKLEY LANDFILL
NORTH HAMPTON, NH

ARSENIC CONCENTRATIONS
OVERBURDEN WELLS
NOVEMBER 2007

DATE	
APRIL 2008	
ENG. BY: ENG	DRWN. BY: DRWN
CHKD.BY: KMM	PROJ. NO.: M7157

FIGURE 6

LEGEND

WELL ID
CONCENTRATION (ug/l) — OVERBURDEN MONITORING WELL

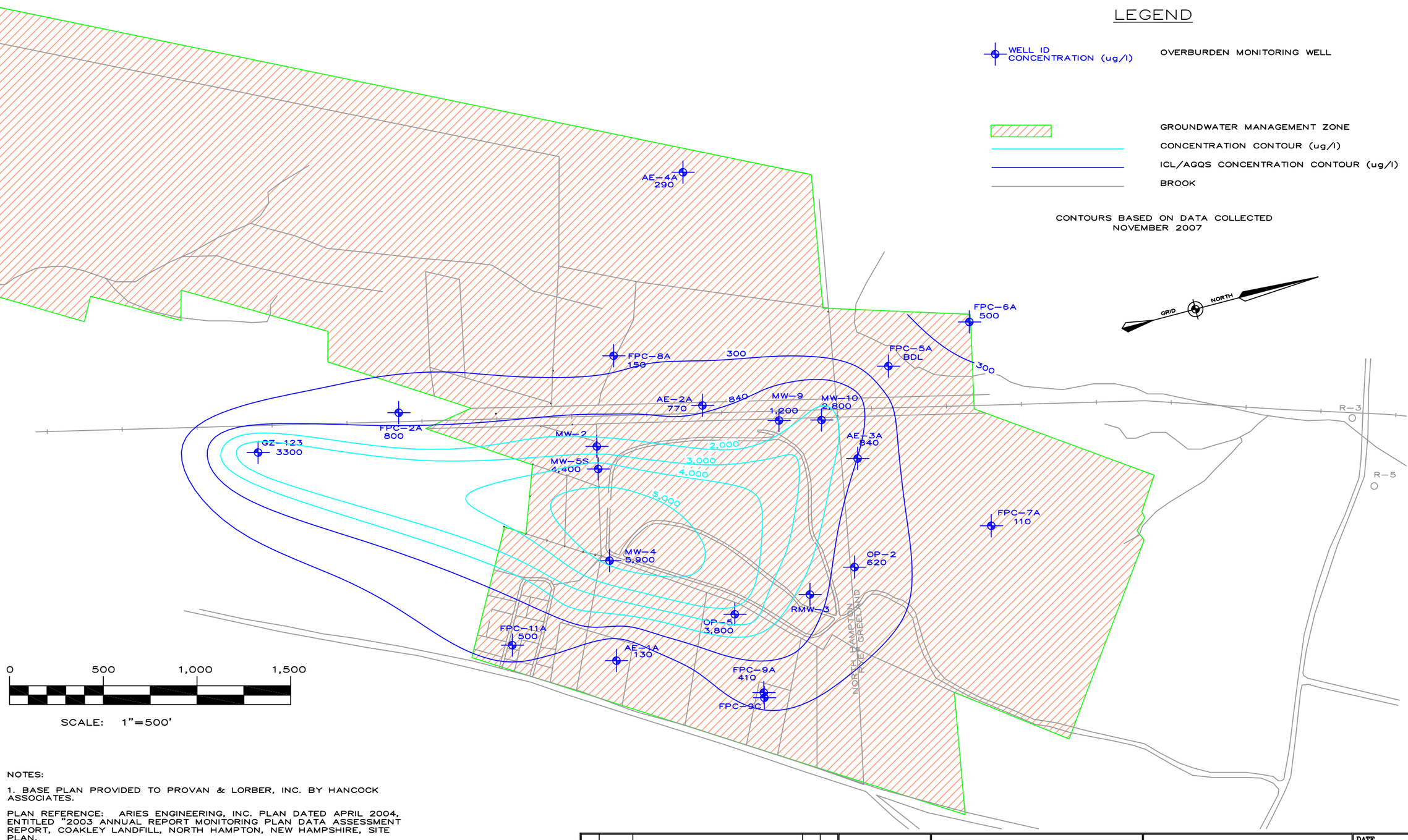
GROUNDWATER MANAGEMENT ZONE

CONCENTRATION CONTOUR (ug/l)

ICL/AGQS CONCENTRATION CONTOUR (ug/l)

BROOK

CONTOURS BASED ON DATA COLLECTED
NOVEMBER 2007



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NORTH HAMPTON, NH

MANGANESE CONCENTRATIONS
OVERBURDEN WELLS
NOVEMBER 2007

DATE	
APRIL 2008	
ENG. BY: ENG	DRWN. BY: DRWN
CHKD.BY: KMM	PROJ. NO.: M7157

FIGURE 7

LEGEND

WELL ID
CONCENTRATION (ug/l) — BEDROCK MONITORING WELL

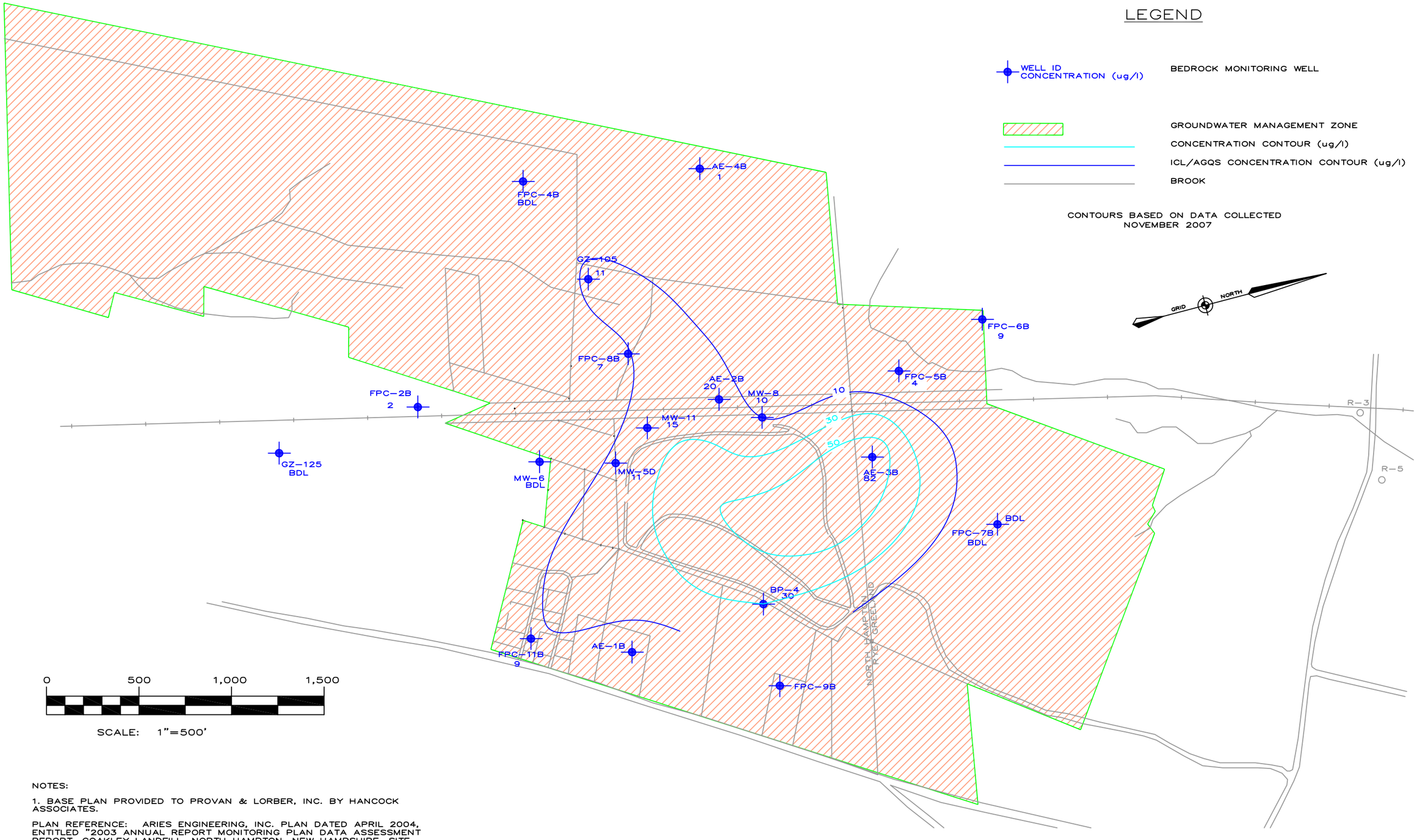
GROUNDWATER MANAGEMENT ZONE

CONCENTRATION CONTOUR (ug/l)

ICL/AGQS CONCENTRATION CONTOUR (ug/l)

BROOK

CONTOURS BASED ON DATA COLLECTED
NOVEMBER 2007



SCALE: 1"=500'

NOTES:

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ARSENIC CONCENTRATIONS
BEDROCK WELLS
NOVEMBER 2007

DATE	
APRIL 2008	
ENG. BY: ENG	DRWN. BY: DRWN
CHKD.BY: KMM	PROJ. NO.: M7157

FIGURE 8

LEGEND

WELL ID
CONCENTRATION (ug/l) — BEDROCK MONITORING WELL

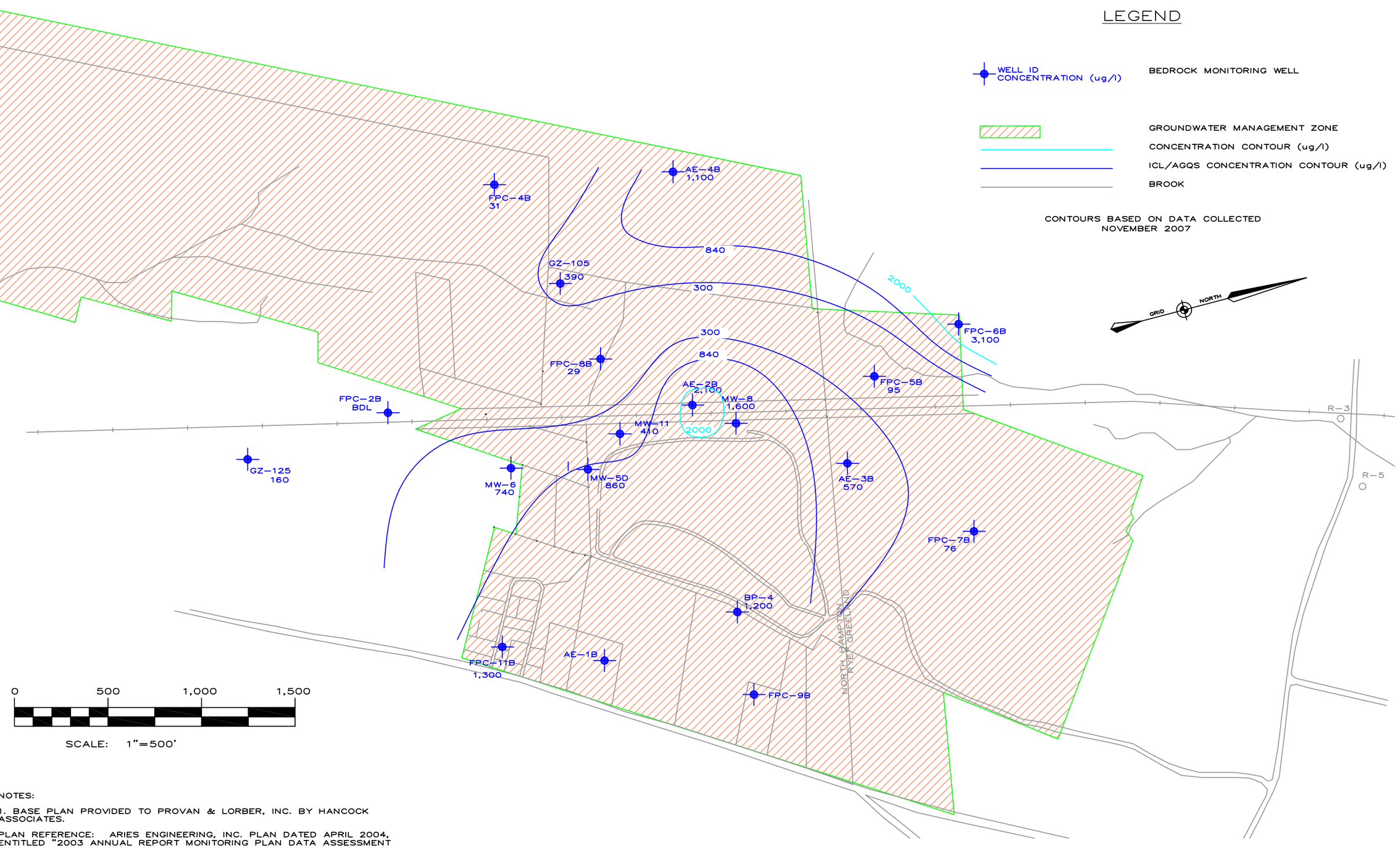
GROUNDWATER MANAGEMENT ZONE

CONCENTRATION CONTOUR (ug/l)

ICL/AGQS CONCENTRATION CONTOUR (ug/l)

BROOK

CONTOURS BASED ON DATA COLLECTED
NOVEMBER 2007



SCALE: 1"=500'

NOTES:

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MANGANESE CONCENTRATIONS
BEDROCK WELLS
NOVEMBER 2007

DATE	
APRIL 2008	
ENG. BY: ENG	DRWN. BY: DRWN
CHKD.BY: KMM	PROJ. NO.: M7157

FIGURE 9

TABLES

TABLE 1

SUMMARY OF GROUNDWATER ELEVATION DATA
2007 ANNUAL MONITORING REPORT
COAKLEY LANDFILL OU-1 AND OU-2
NORTH HAMPTON, NEW HAMPSHIRE

MONITORING WELL IDENTIFICATION	Ref. Pt Elev. (FT. NGVD)	Apr-93 GW. EL. FT.	Dec-96 GW. EL. FT.	Apr-97 GW. EL. FT.	Sep-97 GW. EL. FT.	Dec-97 GW. EL. FT.	Jun-98 GW. EL. FT.	Aug-98 GW. EL. FT.	Apr-99 GW. EL. FT.	Aug-99 GW. EL. FT.	Nov-99 GW. EL. FT.	Apr-00 GW. EL. FT.	Aug-00 GW. EL. FT.	Nov-00 GW. EL. FT.	Apr-01 GW. EL. FT.	Aug-01 GW. EL. FT.	Jun-02 GW. EL. FT.	Aug-02 GW. EL. FT.	Aug-03 GW. EL. FT.	Aug-04 GW. EL. FT.	Aug-05 GW. EL. FT.	Aug-06 GW. EL. FT.	Nov-07 GW. EL. FT.
BP-4	111.70		98.94	97.83	96.07	95.84	99.55	97.03	97.04	95.26	95.93	97.1	96.93	96.03	99.37	96.29	97.27	96.26	96.51	96.89	96.34		95.72
MW-2	94.54															86.75	89.00				ND		88.61
MW-4	129.12	101.52							98.41	95.94	96.78	97.92	97.61	96.65	100.33	96.88	98.01	96.99	97.07	97.35	96.71	98.12	96.17
MW-5S	98.42	93.69							88.35	84.27	87.42	87.96	87.57	87.70	88.70	85.79	87.92	85.24	85.17	87.35	85.00	87.88	86.00
MW-5D	98.39								89.89	85.84	88.77	89.41	88.59	88.98	90.39	87.27	89.27	86.79	87.89	88.63	86.69	88.49	87.28
MW-6	101.15	93.4	93.84	93.44	90.04	92.25	93.44	91.33	92.55	88.03	91.98	92.52	92.20	92.32	93.23	89.79	92.50	89.16	90.09	92.13	89.01	92.46	90.52
MW-8	85.30		81.1	79.46	78.48	78.07	78.71	76.66	78.6	75.32	77.91	78.37	77.98	78.50	78.61	76.30	78.21	75.92	76.60	77.86	75.94	78.18	76.89
MW-9	82.62		77.97	78.03	75.87	76.06	77.16	74.47	75.82	73.42	75.46	76.09	76.00	76.86	76.88	74.10	75.74	73.81	73.28	76.13	73.94	75.71	75.80
MW-10	80.60		74.56	74.67	73.96	74.07	74.68	73.17	74.51	72.78	74.57	74.63	74.83	75.06	75.22	73.93	74.91	73.45	74.20	74.93	73.99	74.71	74.95
MW-11	92.70		87.21	85.36	83.56	83.81	83.69	81.77	83.42	79.17	82.42	82.8	82.35	82.40	83.09	80.59	82.67	80.11	81.24	82.26	79.85	82.89	81.07
OP-2	98.49	91.44	95.86	95.4				92.85	92.11	89.52	90.88	91.86	91.76	91.24	85.74	90.49	91.98	90.34	90.75	91.54	90.43	92.29	90.77
OP-5	112.68	94.92	99.26	98.28	96.59	96.41	100.41	100.41	97.39	95.84	96.41	97.58	97.33	96.40	107.29	97.54	97.72	96.82	96.98	97.31	96.78	98.03	96.04
RMW-3	117.61	95.03	99.81	98.45				90.96	89.61	87.25	88.15	89.3	89.17	88.32	91.58	88.59	89.82	88.60	88.58	88.62	88.73		obstructed
FPC-2A	78.40											75.69	76.70	76.98	NR		76.66	78.40	76.24	76.31	75.66	76.32	75.90
FPC-2B	77.98											77.47	77.30	77.71	77.78		77.38	76.37	76.81	77.28	76.45	77.30	76.90
FPC-4B	75.83	71.83																	69.96	71.58	68.21	71.63	70.95
FPC-5A	74.30	75.01	74.44	74.44	73.94		74.44	73.29	74.14	72.2	73.93	73.9	73.98	74.18	74.14	73.02	73.10	73.03	73.10	74.30	72.18	73.50	73.50
FPC-5B	74.90	74.85	74.81	74.81	73.91	74.21	74.81	73.3	74.6	72.38	74.48	74.25	74.60	74.77	74.70	73.43	70.96	73.15	74.23	74.40	73.19	74.66	74.50
FPC-6A	77.00	73.23							72.74		72.84	72.85	72.85	73.11	73.01		72.65			72.83	70.71	72.83	72.38
FPC-6B	77.10	73.2							72.81	69.86	72.94		72.09	73.21	73.14	70.88	72.33	70.30	71.94	70.32	68.37	70.47	70.19
FPC-7A	82.08	81.63							81.36										80.12	80.99	80.03	81.46	81.30
FPC-7B	82.33	80.53							80.93										79.82	80.72	79.69	81.02	79.43
FPC-8A	73.80	73.85	73.67	73.65	71.49	73.15	73.49	71.01	73.04	69.23	72.93	72.93	72.88	73.34	73.20	71.06	72.99	70.36	71.26	72.86	70.63	73.01	72.20
FPC-8B	73.60	72.83	73.52	73.49	71.44	73.04	73.33	70.84	72.88	69.14	72.77	72.78	72.63	73.18	72.99	70.93	72.79	70.07	71.22	72.69	70.58	72.83	72.03
FPC-9A	117.57	99.87							97.32	95.02	95.72	96.92	96.75	95.90	99.22	96.25	97.05	96.02	96.27	96.40	95.83	97.59	95.48
FPC-9B	117.87	99.99							97.81	95.07	95.79	96.98	96.83	95.99	99.28	96.15	97.08	96.11	96.37	ND	ND		95.14
FPC-9C	117.75	100.45							97.87	95.77	96.33		97.25	96.50	99.62	NM	97.52		96.75	ND	ND		96.08
FPC-11A																							DTW=22.14
FPC-11B																							DTW=22.36
AE-1A	127.00								97.95	95.55	96.21	97.37	97.23	96.34	99.67	96.54	97.54	96.53	96.67	97.05	97.35	98.10	95.89
AE-1B	126.80								97.91	95.51	96.13	97.35	97.19	96.31	99.65	96.43	97.51	96.51	96.65	97.09	96.49	98.09	95.87
AE-2A	79.60									72.49	75.74	75.71	75.67	76.03	75.69	73.58	75.66	72.98	73.75	75.19	73.18	75.70	74.69
AE-2B	79.50									72.59	75.79	75.79	75.44	76.04	75.78	73.49	75.65	73.16	74.42	75.33	73.60	75.61	74.22
AE-3A	86.10								77.47	76.64	77.74	77.56	77.99	77.92	77.80	77.05	77.70	76.86	76.30	77.90	77.14	78.02	77.90
AE-3B	87.30								78.55	77.19	78.38	78.35	78.47	78.61	78.64	78.30	78.49	77.47	77.90	78.58	76.86	78.66	78.47
AE-4A	77.20																			73.47	70.75	73.75	72.91
AE-4B	77.50																			73.42	70.51	73.30	72.28
GZ-105	73.60	66.42							70.86	67.46	70.77	70.78	69.82	71.16	71.02	69.31	70.83	68.45	69.71	71.09	69.28	70.91	70.68
GZ-109	119.36	99.49	98.8	98.01	95.84	95.68	99.08	96.99	97.39	94.91	94.59	96.81									ND		
GZ-123																							DTW=10.58
GZ-125																							DTW=8.42

NOTES:
1. Shaded data denotes a bedrock monitoring well.
2. A blank indicates data was not collected.
3. GW.EL. indicates groundwater elevation and FT. indicates measurements were in feet.
4. Casing elevation data for FPC-11A, FPC-11B, GZ-123, and GZ-125 not available.

TABLE 2

SUMMARY OF OU-1 2007 GROUNDWATER ANALYTICAL RESULTS
2007 ANNUAL MONITORING PLAN DATA ASSESSMENT REPORT
COAKLEY LANDFILL OU-1 AND OU-2
NORTH HAMPTON, NEW HAMPSHIRE

CONTAMINANT OF CONCERN	**INTERIM**	MW-4	MW-4	MW-5S	MW-5S	**MW-5D**	**MW-5D**	**MW-6**	**MW-6**	**MW-8**	**MW-8**	MW-9	MW-9	MW-10	MW-10	**MW-11**	**MW-11**	OP-2	OP-2	OP-5	OP-5	**BP-4**	**BP-4**
DATE SAMPLED	**CLEANUP**	30-Aug-06	16-Nov-07	29-Aug-06	9-Nov-07	29-Aug-06	15-Nov-07	29-Aug-06	12-Nov-07	30-Aug-06	13-Nov-07	29-Aug-06	13-Nov-07	29-Aug-06	13-Nov-07	29-Aug-06	8-Nov-07	29-Aug-06	9-Nov-07	30-Aug-06	9-Nov-07	30-Aug-06	9-Nov-07
VOLATILE ORGANIC COMPOUNDS IN ug/l	**LEVEL**																						
Acetone	**6,000**	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	NA	NA	NA	BDL	NA	NA
Benzene	**5**	NA	NA	BDL	5	2	3	BDL	BDL	5	3	NA	NA	NA	NA	5	8	NA	NA	NA	BDL	NA	NA
Chlorobenzene	**100**	NA	NA	BDL	3	4	5	BDL	BDL	4	3	NA	NA	NA	NA	2	3	NA	NA	NA	BDL	NA	NA
Chloroethane		NA	NA	BDL	13	24	33	BDL	BDL	20	19	NA	NA	NA	NA	20	32	NA	NA	NA	BDL	NA	NA
Chloromethane	**30**	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	NA	NA	NA	BDL	NA	NA
1,4 Dichlorobenzene	**75**	NA	NA	BDL	3	BDL	2	BDL	BDL	BDL	2	NA	NA	NA	NA	BDL	2	NA	NA	NA	BDL	NA	NA
1,1 Dichloroethane	**81**	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	NA	NA	NA	BDL	NA	NA
Ethylbenzene	**700**	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	NA	NA	NA	BDL	NA	NA
Isopropylbenzene	**800**	NA	NA	BDL	2	BDL	BDL	BDL	BDL	BDL	2	NA	NA	NA	NA	BDL	4	NA	NA	NA	BDL	NA	NA
p - Isopropyltoluene	**260**	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	NA	NA	NA	BDL	NA	NA
Naphthalene	**20**	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	NA	NA	NA	BDL	NA	NA
Diethyl Ether	**1,400**	NA	NA	BDL	52	89	130	BDL	BDL	114	130	NA	NA	NA	NA	47	75	NA	NA	NA	BDL	NA	NA
Tetrahydrofuran	**154**	NA	NA	BDL	60	110	110	BDL	BDL	239	180	NA	NA	NA	NA	50	60	NA	NA	NA	BDL	NA	NA
Toluene	**1,000**	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	NA	NA	NA	BDL	NA	NA
1,2,4 Trimethylbenzene	**330**	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	3	2	NA	NA	NA	NA	BDL	2	NA	NA	NA	BDL	NA	NA
1,3,5 Trimethylbenzene	**330**	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	NA	NA	NA	BDL	NA	NA
o-Xylene		NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	NA	NA	NA	BDL	NA	NA
m&p - Xylene		NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	3	3	NA	NA	NA	NA	8	12	NA	NA	NA	BDL	NA	NA
Methylethylketone (MEK)	**200**	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	NA	NA	NA	BDL	NA	NA
Methylisobutylketone (MIBK)	**2,000**	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	NA	NA	NA	BDL	NA	NA
Methyl-t-butyl Ether (MTBE)	**13**	NA	NA	BDL	BDL	BDL	BDL	BDL	5	BDL	BDL	NA	NA	NA	NA	BDL	BDL	NA	NA	NA	BDL	NA	NA
Tertiary-butyl Alcohol (TBA)		NA	NA		BDL		60		BDL		70	NA	NA	NA	NA		BDL	NA	NA	NA	BDL	NA	NA
METALS IN ug/l																							
Aluminum		34000	28,000	BDL	BDL	8	BDL	BDL	BDL	26	60	BDL	BDL	19	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Arsenic	**10**	43	58	10	26	5	11	BDL	BDL	7	10	81	56	11	12	10	15	200	190	27	33	26	30
Barium		190	200	190	210	120	130	BDL	BDL	170	170	66	41	55	64	96	95	19	19	13	23	53	55
Cadmium		BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Calcium		66,000	88,000	54,000	45,000	48,000	30,000	15,000	13,000	55,000	31,000	55,000	27,000	53,000	52,000	31,000	26,000	40,000	37,000	15,000	14,000	69,000	51,000
Chromium	**50**	150	140	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Copper		38	71	BDL	BDL	BDL	BDL	BDL	2	BDL	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Iron (Total)		110,000	160,000	17,000	25,000	17,000	15	1,200	5,800	5,900	4,300	65,000	16,000	27,000	28,000	17,000	15,000	44,000	48,000	12,000	19,000	36,000	31,000
Dissolved Iron		27,000	24,000	19,000	23,000	NA	NA	900	3,900	NA	NA	57,000	17,000	NA	NA	NA	NA	49,000	50,000	12,000	21,000	NA	NA
Lead	**15**	23	37	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Magnesium		38,000	39,000	30,000	24,000	44,000	27,000	6,200	5,200	68,000	36,000	22,000	12,000	14,000	15,000	25,000	19,000	12,000	9,300	3,600	3,200	3,800	21,000
Mercury		BDL	0.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Nickel	**100**	99	130	17	22	14	11	BDL	3	18	19	5	16	7	8	8	12	7	7	22	33	9	10
Potassium		39,000	44,000	27,000	22,000	30,000	22,000	1,800	1,700	17,000	12,000	15,000	6,800	9,400	12,000	10,000	9,300	23,000	17,000	2,800	2,300	30,000	21,000
Selenium		BDL	BDL	BDL	BDL	4	BDL	BDL	BDL	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Silver		BDL	BDL	BDL	2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	3
Sodium		56,000	39,000	76,000	110,000	140,000	170,000	10,000	12,000	180,000	240,000	35,000	38,000	35,000	90,000	110,000	140,000	17,000	12,000	8,600	10,000	9,200	140,000
Thallium		BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Zinc		91	190	6	14	7	BDL	13	9	6	18	3	BDL	16	19	6	32	5	BDL	7	BDL	6	BDL
Cobalt		34	53	8	11	BDL	BDL	BDL	BDL	BDL	3	BDL	12	7	6	BDL	3	BDL	5	14	23	BDL	2
Beryllium	**4**	BDL	3	BDL	BDL	BDL	BDL	6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Manganese	**300**	4,500	5,900	3,700	4,400	890	860	540	740	2,500	1,600	2,400	1,200	3,200	2,800	450	410	470	620	2,500	3,800	1,300	1,200
Dissolved Manganese		1,300	1,300	3,700	4,200	NA	NA	540	820	NA	NA	2,200	1,400	NA	NA	NA	NA	480	650	2,600	4,000	NA	NA
Antimony	**6**	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Vanadium	**260**	63	82	BDL	BDL	BDL	1	BDL	BDL	BDL	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Sulfate		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13,000	NA	10,000	NA	NA	NA	NA	NA	NA	NA	NA
Chloride		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	30,000	NA	73,000	NA	NA	NA	NA	NA	NA	NA	NA
Alkalinity Bicarb		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	220,000	NA	340,000	NA	NA	NA	NA	NA	NA	NA	NA
Alkalinity Carbonate		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	BDL	NA	BDL	NA	NA	NA	NA	NA	NA	NA	NA
FIELD PARAMETERS																							
Temperature Degrees C		17.10	13.20	12.25	9.79	11.33	11.48	11.77	10.38	13.09	10.46	14.9	10.66	16.3	10.22	12.27	9.50	16.33	10.41	13.31	9.34	11.9	9.41
pH		6.47	6.59	6.61	6.79	7.22	7.09	6.86	5.82	6.73	7.22	6.4	6.01	6.47	6.31	6.89	6.72	6.55	6.17	5.79	5.64	6.6	6.89
Conductivity in us/cm		1024	1029	884	1203	1146	1570	138	196	1339	1670	644.6	491	464.4	960	800.3	1420	480.9	675	150.6	253	964.8	1204
Dissolved Oxygen in mg/l		3.68	1.68	3.34	0.45	1.32	0.49	1.68	0.98	2.11	1.15	622	0.68	735	0.48	0.37	0.22	8.77	0.72	1.15	0.35	2.14	0.37
Turbidity in NTU			10.9	10.9	1.1	10.0	3.33	8.1	17.0	7.9	13.9	13.3	2.48	9.8	2.28	24.3	2.17	14.2	1.97	0.7	1.49	2.6	1.50
Oxidation/Reduction Potential in mV		-44.0	154	-82.0	-128	-171.0	1	-76.0	95	-55.0	45	-55	38	-65	37	-204	-30	-161	-11	27	16	-92	-85.0

NOTES:

1. NA = Sample was not analyzed for indicated parameter
   BDL = Below Detection Limit
   Bolded wells denote bedrock wells.

2. A blank indicates data was not collected.
3. Bolded contaminants are site contaminants of concern for which interim cleanup standards (ICLs) have been established.
4. Shaded values denote exceedance of an established interim cleanup level.
5. Volatile organic compound and metals results are in micrograms per liter (ug/l).
6. Field Parameter Units: us/cm = microsiemens per centimeter, mg/l = milligram per liter, NTU = nephelometric turbidity unit, mV = millivolt

TABLE 3

SUMMARY OF OU-2 2007 GROUNDWATER ANALYTICAL RESULTS
2007 ANNUAL MONITORING PLAN DATA ASSESSMENT REPORT
COAKLEY LANDFILL OU-1 AND OU-2
NORTH HAMPTON, NEW HAMPSHIRE

SAMPLE IDENTIFICATION	INTERIM	FPC-2A	FPC-2A	**FPC-2B**	**FPC-2B**	**FPC-4B**	**FPC-4B**	FPC-5A	FPC-5A	**FPC-5B**	**FPC-5B**	FPC-6A	FPC-6A	**FPC-6B**	**FPC-6B**	FPC-7A	FPC-7A	**FPC-7B**	**FPC-7B**	FPC-8A	FPC-8A	**FPC-8B**	**FPC-8B**	FPC-9A	FPC-9A
DATE SAMPLED	CLEANUP	29-Aug-06	16-Nov-07	29-Aug-06	16-Nov-07	28-Aug-06	14-Nov-07	28-Aug-06	14-Nov-07	25-Aug-05	15-Nov-07	28-Aug-06	14-Nov-07	28-Aug-06	14-Nov-07	28-Aug-06	16-Nov-07	28-Aug-06	16-Nov-07	28-Aug-06	8-Nov-07	28-Aug-06	8-Nov-07	30-Aug-06	12-Nov-07
VOLATILE ORGANIC COMPOUNDS IN ug/l	LEVEL																								
Acetone		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
Benzene	**5**	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	2	BDL	2	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
Chlorobenzene	**100**	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	3	5	3	7	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
Chloroethane		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	4	8	5	11	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
Chloromethane		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
1,4 Dichlorobenzene		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	1	BDL	2	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
1,1 Dichloroethane		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
cis-1,2 Dichloroethene		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
Ethylbenzene		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
Isopropylbenzene		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
p - Isopropyltoluene		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
Naphthalene		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
Diethyl Ether		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	20	BDL	23	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
Tetrahydrofuran		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
Toluene		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
1,2,4 Trimethylbenzene		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
1,3,5 Trimethylbenzene		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
o-Xylene		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
m&p - Xylene		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
Methylethylketone (MEK)	**200**	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
Methylisobutylketone (MIBK)		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
Methyl t-butyl ether (MTBE)		BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	BDL	NA
METALS IN ug/l																									
Aluminum		BDL	60	27	BDL	BDL	70	14	BDL	BDL	BDL	BDL	BDL	140	980	BDL	520	BDL	BDL	380	670	13	BDL	BDL	1,000
Arsenic	**10**	BDL	8	BDL	2	BDL	BDL	42	53	BDL	4	BDL	3	5	9	BDL	BDL	BDL	BDL	BDL	4	5	7	44	37
Barium		12	18	12	12	3	7	120	130	47	64	53	95	30	89	2	7	BDL	3	4	8	6	7	120	92
Cadmium		BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Calcium		22,000	18,000	11,000	7,800	5,300	4,200	51,000	34,000	11,000	7,200	17,000	20,000	28,000	46,000	20,000	13,000	14,000	16,000	26,000	21,000	30,000	20,000	66,000	47,000
Chromium	**100**	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	3	BDL	2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2
Copper		BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	6	BDL	3	BDL	BDL	BDL	2	BDL	BDL	BDL	3
Iron (Total)		3,200	14,000	100	120	100	110	9,200	8,300	360	330	5,500	9,000	1,600	1,800	BDL	1,300	1,200	270	900	1,300	130	60	9,600	8,600
Dissolved Iron		3,800	1,800	900	BDL	BDL	BDL	NA	NA	NA	NA	6,400	8,600	1,600	810	BDL	BDL	BDL	BDL	NA	NA	NA	BDL	NA	7,000
Lead	**15**	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1
Magnesium		14,000	12,000	1,700	1,200	3,500	2,800	28,000	19,000	7,100	4,600	9,300	11,000	12,000	23,000	6,400	4,400	3,800	4,600	3,500	3,300	6,900	4,300	37,000	23,000
Mercury		BDL	BDL	BDL	0.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.1	BDL	BDL
Nickel	**100**	BDL	BDL	BDL	BDL	BDL	1	8	4	5	8	2	5	BDL	13	3	13	BDL	2	BDL	2	BDL	BDL	4	7
Potassium		48,000	6,000	6,000	5,900	2,200	1,900	27,000	22,000	9,600	7,100	6,000	6,600	6,600	10,000	2,700	2,800	2,000	2,400	2,400	2,000	3,600	2,600	14,000	8,600
Selenium		BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2
Silver		BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Sodium		12,000	15,000	43,000	43,000	5,100	6,000	120,000	120,000	300,000	310,000	75,000	100,000	82,000	140,000	9,800	9,000	7,800	10,000	11,000	12,000	18,000	16,000	94,000	100,000
Thallium		BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Zinc		7	BDL	5	BDL	7	6	7	BDL	5	BDL	6	BDL	8	6	6	7	6	BDL	6	BDL	6	BDL	6	58
Cobalt		BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	5	BDL	6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1
Beryllium	**4**	BDL	BDL	BDL	BDL	BDL	23	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Manganese	**300**	670	800	18	BDL	BDL	31	140	110	88	95	410	500	2,100	3,100	6	110	200	76	150	150	21	29	270	410
Dissolved Manganese		660	860	BDL	BDL	BDL	23	NA	NA	NA	NA	400	530	2,300	3,400	BDL	BDL	BDL	BDL	NA	NA	NA	33	NA	450
Antimony	**6**	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Vanadium	**260**	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1	BDL	BDL	BDL	3	BDL	2	BDL	BDL	BDL	1	BDL	BDL	BDL	3
Sulfate		NA	NA	NA	NA	NA	NA	NA	BDL	NA	BDL	NA	5,000	NA	1,000	NA	15,000	NA	17,000	NA	NA	NA	NA	NA	NA
Chloride		NA	NA	NA	NA	NA	NA	NA	110,000	NA	270,000	NA	81,000	NA	140,000	NA	7,000	NA	7,000	NA	NA	NA	NA	NA	NA
Alkalinity Bicarbonate		NA	NA	NA	NA	NA	NA	NA	410,000	NA	360,000	NA	200,000	NA	390,000	NA	49,000	NA	51,000	NA	NA	NA	NA	NA	NA
Alkalinity Carbonate		NA	NA	NA	NA	NA	NA	NA	BDL	NA	BDL	NA	BDL	NA	BDL	NA	BDL	NA	BDL	NA	NA	NA	NA	NA	NA
FIELD PARAMETERS																									
Temperature Degrees C		14.1	8.94	13.1	9.11	12.87	9.90	10.5	9.55	11.6	11.83	11.1	10.73	15	11.05	12.3	9.13	12.45	8.67	12.3	8.89	12.03	8.63	10.5	8.40
pH		6.52	6.68	7.99	7.93	6.63	5.95	7.02	7.46	7.96	7.68	6.72	6.55	6.81	6.69	6.36	6.97	6.61	6.47	6.36	6.80	7.26	7.81	7	7.01
Conductivity in us/cm		214.6	274	184.3	201	52.5	95	501	1180	466	1467	143	610	401	1137	122	168	127	171	162	211	176	236	941	941
Dissolved Oxygen in mg/l		0.97	0.80	0.622	3.18	7.61	0.56	1.08	0.33	2.36	1.45	2.07	1.32	0.81	0.41	4.63	3.72	9.63	3.99	2.01	0.85	5.47	0.87	1.36	0.42
Turbidity in NTU		10.5	93	1.5	3.40	1.8	2.75	11	2.20	0.4	0.87	27.2	5.67	2.1	165	37.2	8.6	70.6	3.11	1.56	28.4	0.4	2.20	15.6	40.1
Oxidation/Reduction Potential in mV		-22	119	-131	45	77	164	-95	-114	-116	30	-53	42	-39	45	94	169	105	105	96	-42	-61	0.81	-113	26

NOTES:
1. NA = Sample was not analyzed for indicated parameter
   BDL = Below Detection Limit
2. Bolded well denotes a bedrock groundwater monitoring well.
3. Blank column indicates the well was not sampled.
4. Potential ICLs are indicated for arsenic and maganese.
5. Shaded values denote exceedance of an established interim cleanup level.
6. Volatile organic compound and metals results are in micrograms per liter (ug/l).
7. Field Parameter Units: us/cm = microsiemens per centimeter, mg/l = milligram per liter, NTU = nephelometric turbidity unit, mV = millivolt

TABLE 3

SUMMARY OF OU-2 2007 GROUNDWATER ANALYTICAL RESULTS
2007 ANNUAL MONITORING PLAN DATA ASSESSMENT REPORT
COAKLEY LANDFILL OU-1 AND OU-2
NORTH HAMPTON, NEW HAMPSHIRE

SAMPLE IDENTIFICATION	INTERIM	FPC-11A	FPC-11A	FPC-11B	FPC-11B	GZ-105	GZ-105	GZ-123	GZ-125	AE-1A	AE-1A	AE-2A	AE-2A	AE-2B	AE-2B	AE-3A	AE-3A	AE-3B	AE-3B	AE-4A	AE-4A	AE-4B	AE-4B
DATE SAMPLED	CLEANUP	30-Aug-06	15-Nov-07	30-Aug-06	15-Nov-07	29-Aug-06	14-Nov-07	12-Nov-07	12-Nov-07	30-Aug-06	16-Nov-07	30-Aug-06	8-Nov-07	29-Aug-06	8-Nov-07	29-Aug-06	15-Nov-07	29-Aug-06	16-Nov-07	28-Aug-06	14-Nov-07	28-Aug-06	14-Nov-07
VOLATILE ORGANIC COMPOUNDS IN ug/l	LEVEL																						
Acetone		BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzene	**5**	BDL	NA	BDL	NA	6	6	BDL	BDL	NA	NA	BDL	2	3	5	BDL	2	BDL	BDL	BDL	BDL	BDL	BDL
Chlorobenzene	**100**	BDL	NA	BDL	NA	9	10	BDL	BDL	NA	NA	BDL	5	3	5	6	9	BDL	BDL	BDL	BDL	BDL	BDL
Chloroethane		BDL	NA	BDL	NA	7	9	BDL	BDL	NA	NA	BDL	BDL	8	11	13	12	6	5	BDL	BDL	BDL	BDL
Chloromethane		BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,4 Dichlorobenzene		BDL	NA	BDL	NA	2	4	BDL	BDL	NA	NA	BDL	2	BDL	1	BDL	2	BDL	BDL	BDL	BDL	BDL	BDL
1,1 Dichloroethane		BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
cis-1,2 Dichloroethene		BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethylbenzene		BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Isopropylbenzene		BDL	NA	BDL	NA	BDL	2	BDL	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
p - Isopropyltoluene		BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Naphthalene		BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Diethyl Ether		BDL	NA	BDL	NA	49	61	BDL	BDL	NA	NA	BDL	19	46	65	BDL	18	BDL	13	BDL	BDL	BDL	BDL
Tetrahydrofuran		BDL	NA	BDL	NA	83	80	BDL	BDL	NA	NA	BDL	20	69	60	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Toluene		BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2,4 Trimethylbenzene		BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,3,5 Trimethylbenzene		BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
o-Xylene		BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
m&p - Xylene		BDL	NA	BDL	NA	BDL	1	BDL	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methylethylketone (MEK)	**200**	BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methylisobutylketone (MIBK)		BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methyl t-butyl ether (MTBE)		BDL	NA	BDL	NA	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
METALS IN ug/l																							
Aluminum		270	640	13,000	350	BDL	BDL	BDL	BDL	63	970	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	240	70	1,500	1,200
Arsenic	**10**	BDL	1	6	9	6	11	BDL	BDL	15	39	240	280	24	20	100	130	91	82	BDL	3	BDL	1
Barium		4	17	72	18	43	52	5	4	18	22	26	41	200	190	65	86	180	130	11	15	8	28
Cadmium		BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Calcium		7,400	28,000	64,000	54,000	65,000	44,000	11,000	14,000	45,000	14,000	21,000	29,000	72,000	57,000	45,000	38,000	57,000	45,000	6,900	4,900	7,700	6,400
Chromium	**100**	BDL	2	16	BDL	BDL	BDL	BDL	BDL	BDL	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	3
Copper		BDL	3	4	2	BDL	BDL	1	BDL	BDL	9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	5
Iron (Total)		1,000	2,100	13,000	1,900	6,200	5,100	3,900	350	340	3,100	12,000	19,000	22,000	18,000	22,000	19,000	14,000	12,000	9,100	6,500	1,500	1,900
Dissolved Iron		BDL	BDL	2,100	240	5,300	3,800	1,700	BDL	400	BDL	14,000	19,000	25,000	18,000	19,000	19,000	17,000	16,000	3,700	160	BDL	BDL
Lead	**15**	BDL	2	6	1	BDL	BDL	BDL	BDL	BDL	15	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2
Magnesium		1,700	6,100	27,000	12,000	23,000	18,000	3,000	8,600	16,000	3,000	9,300	11,000	60,000	40,000	24,000	20,000	32,000	22,000	6,100	4,300	4,700	5,100
Mercury		BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.3
Nickel	**100**	BDL	9	17	13	7	8	5	BDL	BDL	5	12	12	10	13	8	8	6	8	BDL	7	BDL	3
Potassium		28,000	3,800	6,500	3,600	7,500	5,700	2,100	2,800	4,900	4,300	16,000	21,000	16,000	13,000	24,000	22,000	25,000	20,000	2,300	2,300	5,000	4,200
Selenium		BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Silver		BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Sodium		28,000	20,000	95,000	41,000	153,000	160,000	17,000	18,000	22,000	26,000	43,000	39,000	180,000	230,000	87,000	100,000	110,000	110,000	6,700	7,000	23,000	22,000
Thallium		BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Zinc		6	26	19	31	4	BDL	8	6	10	45	6	BDL	6	BDL	3	BDL	5	BDL	BDL	BDL	6	8
Cobalt		8	2	21	6	BDL	BDL	5	BDL	16	3	8	13	BDL	4	BDL	3	BDL	1	BDL	3	BDL	2
Beryllium	**4**	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Manganese	**300**	22	500	880	1,300	480	390	3,300	160	440	130	510	770	2,400	2,100	690	840	1,000	570	310	290	220	1,100
Dissolved Manganese		BDL	600	770	1,500	510	470	3,600	170	450	6	510	830	2,300	2,200	660	890	1000	760	300	330	90	84
Antimony	**6**	BDL	BDL	BDL	BDL	4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	8	BDL	BDL	BDL
Vanadium	**260**	BDL	3	7	1	BDL	BDL	BDL	BDL	BDL	3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	3
Sulfate		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alkalinity Bicarbonate		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alkalinity Carbonate		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FIELD PARAMETERS																							
Temperature Degrees C		12.1	12.70	11.7	12.46	11.03	10.15	11.72	10.04	11.8	9.7	12.4	10.36	12.2	9.88	14.8	11.92	12.3	9.84	12.27	11.10	11.78	9.93
pH		6.82	5.93	6.67	6.65	8.48	7.16	5.57	5.75	8.77	8.78	6.47	6.69	6.72	7.07	6.77	7.25	7.23	7.20	6.41	6.89	6.74	7.30
Conductivity in us/cm		163.8	348	398	761	431.4	1145	220	276	227.1	208	321	743	1269	1610	925.8	1124	968.6	1208	111	118	155.7	207
Dissolved Oxygen in mg/l		8.87	4.84	6.55	0.79	1.65	0.28	0.77	2.95	3.55	2.31	3.93	0.35	1.45	1.01	1.71	0.31	1.37	0.54	1.24	3.98	1.43	0.51
Turbidity in NTU		352.8	21.3	2906	17.0	46.1	18.9	22.9	5.03	82.8	15.9	0.2	0.77	3.1	0.60	4.8	3.94	5.4	16.3	3.89	81.6	6.1	49.4
Oxidation/Reduction Potential in mV		58	137	-36	110	-190	29	129	165	-50	88	-29	-102	-127	-58	-98	-109	-149	90	-83	78	-37	92

NOTES:
1. NA = Sample was not analyzed for indicated parameter
   BDL = Below Detection Limit
2. Bolded well denotes a bedrock groundwater monitoring well.
3. Blank column indicates the well was not sampled.
4. Potential ICLs are indicated for arsenic and maganese.
5. Shaded values denote exceedance of an established interim cleanup level.
6. Volatile organic compound and metals results are in micrograms per liter (ug/l).
7. Field Parameter Units: us/cm = microsiemens per centimeter, mg/l = milligram per liter, NTU = nephelometric turbidity unit, mV = millivolt

TABLE 4

SUMMARY OF RESIDENTIAL WELL MONITORING RESULTS
2007 ANNUAL MONITORING PLAN DATA ASSESSMENT REPORT
COAKLEY LANDFILL OU-1 AND OU-2
NORTH HAMPTON, NEW HAMPSHIRE

SAMPLE IDENTIFICATION	R-3	R-5
DATE SAMPLED	24-Jan-08	24-Jan-08
VOCs		
Methyl-tert-butyl ether (MTBE)	1.6	<0.5
FIELD PARAMETERS		
Temperature Degrees C	13.51	14.22
pH	5.63	5.84
Conductivity in us/cm	316	243
Dissolved Oxygen in mg/l	4.16	6.43
Turbidity in NTU	2.0	1.4
Oxidation/Reduction Potential in mV	157	162

NOTES:
1. BDL = Below Method Detection Limit
2. Only contaminants detected in one or more groundwater samples are listed in this table.
3. Volatile organic compound results are in micrograms per liter (ug/l).

TABLE 5

SUMMARY OF SURFACE WATER ANALYTICAL RESULTS
2007 ANNUAL MONITORING PLAN DATA ASSESSMENT REPORT
COAKLEY LANDFILL OU-1 AND OU-2
NORTH HAMPTON, NEW HAMPSHIRE

SAMPLE IDENTIFICATION	DES SURFACE WATER STANDARDS		SW-4	SW-4		SW-5	SW-5/SW-3T		SW-103	SW-103		SW-1T		SW-2T		SW-5T		SW-6T	
DATE SAMPLED			29-Aug-06	15-Nov-07		30-Aug-06	15-Nov-07		28-Aug-06	13-Nov-07		13-Nov-07		13-Nov-07		13-Nov-07		13-Nov-07	
PARAMETER ANALYZED	ACUTE	CHRONIC																	
VOCS BY EPA METHOD 8260B IN ug/L																			
ACETONE				BDL			BDL			BDL		BDL		10		BDL		BDL	
BENZENE	5,300	NSE	BDL	BDL		BDL	BDL		BDL	BDL		BDL		BDL		BDL		BDL	
CHLOROBENZENE	250	50	BDL	BDL		BDL	BDL		BDL	BDL		BDL		BDL		BDL		BDL	
METALS BY EPA METHOD 200.8 IN ug/L			Total	Total	Dissolved	Total	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
ALUMINUM	**750**	87	740	90	100	**3,300**	150	BDL	200	BDL	BDL	**1,900**	BDL	BDL	BDL	90	100	140	120
ARSENIC (1)	340	150	BDL	2	3	17	6	8	4	5	6	7	1	1	1	1	2	2	2
BARIUM	NSE	NSE	12	23	24	70	29	33	38	40	45	29	10	17	22	15	20	9	9
CADMIUM (1)	0.95	0.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
CALCIUM	NSE	NSE	10,000	31,000	34,000	67,000	28,000	33,000	48,000	33,000	37,000	27,000	33,000	35,000	43,000	20,000	26,000	25,000	28,000
CHROMIUM	183	24	BDL	BDL	BDL	5	BDL	BDL	BDL	BDL	BDL	5	BDL	BDL	BDL	BDL	BDL	BDL	1
COPPER	**3.6**	2.7	BDL	3	2	BDL	3	2	BDL	3	2	3	3	3	**5**	2	3	1	3
IRON (1)	NSE	1000	1,100	160	90	25,000	5,100	5,600	14,000	11,000	13,000	5,200	90	300	110	400	430	310	100
LEAD (1)	14	0.54	BDL	BDL	BDL	BDL	1	BDL	BDL	BDL	BDL	4	BDL	BDL	BDL	BDL	BDL	1	BDL
MAGNESIUM	NSE	NSE	4,700	13,000	15,000	19,000	8,200	9,600	12,000	8,900	9,900	9,200	10,000	9,800	13,000	6,800	8,800	8,900	10,000
MERCURY (1)	1.4	0.77	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NICKEL (1)	144.9	16.1	BDL	3	4	8	5	6	BDL	7	7	6	3	3	4	2	3	4	5
POTASSIUM	NSE	NSE	1,300	3,100	3,500	20,000	21,000	24,000	7,100	18,000	18,000	7,300	8,700	13,000	17,000	4,300	5,600	450	720
SELENIUM	NSE	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
SILVER	0.32	NSE	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
SODIUM	NSE	NSE	5,200	17,000	19,000	43,000	35,000	42,000	23,000	38,000	41,000	24,000	32,000	23,000	30,000	23,000	30,000	58,000	70,000
THALLIUM	1400	40	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
ZINC (1)	35.4	32.2	14	30	**940**	19	10	**900**	6	10	**740**	11	**740**	BDL	**780**	**64**	**980**	6	**920**
COBALT	NSE	NSE	BDL	BDL	BDL	3	3	3	BDL	7	9	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL
BERYLLIUM	130	5.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
MANGANESE	NSE	NSE	350	470	360	2,800	1,200	1,500	1,600	1,400	1,600	460	150	260	350	400	540	58	38
ANTIMONY	9000	1600	4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
VANADIUM	NSE	NSE	BDL	1	1	BDL	BDL	BDL	BDL	BDL	BDL	4	BDL	BDL	BDL	BDL	BDL	3	3
AMMONIA BY EPA METHOD 350.3 IN mg/l	36.1	3.08		BDL		5.8	2.9		0.2	0.44		BDL		3.1		BDL		BDL	
CYANIDE (Total)				BDL			BDL			BDL		BDL		BDL		BDL		BDL	
FIELD PARAMETERS																			
Temperature Degrees C				11.94			7.46			7.71		7.00		6.87		8.98		6.51	
pH				6.31			6.99			6.69		6.40		7.11		6.35		6.34	
Conductivity in us/cm				372			675			603		230		517		364		499	
Dissolved Oxygen in mg/l				2.98			0.50			1.30		5.84		4.11		1.94		3.70	
Turbidity in NTU				7.51			12.6			2.44		48.7		2.67		0.62		7.31	
Oxidation/Reduction Potential in mV				167			-70			-9		179		75		120		131	

NOTES:

1. BDL = Below Method Detection Limit
2. Only contaminants detected in one or more surface water samples are listed in this table.
3. Bolded values indicates exceedance of NHDES acute surface water criteria.
4. Shaded values indicate exceedance of NHDES chronic surface water criteria.
5. Shaded and bolded values indicate exceedances of both NHDES acute and chronic criteria.
6. (1) = Criteria for these metals are expressed as a function of the water effect ratio (WER) as defined in 40 CFR
   The values displayed in this table correspond to a WER of 1.0.
7. NSE indicates no standard has been established for the indicated parameter.
8. Volatile organic compound and metals results are in micrograms per liter (ug/l).

Field Parameter Units: us/cm = microsiemens per centimeter, mg/l = milligram per liter, NTU = nephelometric

TABLE 6

SUMMARY OF HISTORICAL SURFACE WATER ANALYTICAL RESULTS
2007 ANNUAL MONITORING PLAN DATA ASSESSMENT REPORT
COAKLEY LANDFILL OU-1 AND OU-2
NORTH HAMPTON, NEW HAMPSHIRE

SAMPLE IDENTIFICATION	DES SURFACE		SW-5	SW-5	SW5	SW-5	SW-5	SW-5	SW-5	SW-5	
DATE SAMPLED	WATER STANDARDS		27-Apr-99	26-Apr-01	16-Aug-01	27-Aug-03	26-Aug-04	29-Aug-05	30-Aug-06	15-Nov-07	
PARAMETER ANALYZED	ACUTE	CHRONIC									
VOCs BY EPA METHOD 8260B IN ug/L											
BENZENE	5,300	NSE	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
CHLOROBENZENE	250	50	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
TOLUENE	NSE	NSE	2	BDL	BDL					BDL	
METALS BY EPA METHOD 200.8 IN ug/L			Total	Total	Total	Total	Total	Total	Total	Total	Dissolved
ALUMINUM	**750**	87	**19,000**	40	**5,600 (H)**	200	**240,000**	**9,100**	**3,300**	150	BDL
ARSENIC (1)	340	150	BDL (2)	2	25	3	**720**	**1200**	17	6	8
BARIUM	NSE	NSE	190	26	180	40	6100	360	70	29	33
CADMIUM (1)	0.95	0.8	**1**	BDL	BDL	BDL	**10**	BDL	BDL	BDL	BDL
CALCIUM	NSE	NSE	51,000	74,000	38,000	83,000	310,000	54,000	67,000	28,000	33,000
CHROMIUM	183	24	71	BDL	16	3	**380**	30	5	BDL	BDL
COPPER	**3.6**	2.7	**34**	3	**11**	BDL	**140**	BDL	BDL	3	2
IRON (1)	NSE	1000	35,000	600	13,000	1,600	1,200,000	250,000	25,000	5,100	5,600
LEAD (1)	14	0.54	**22**	BDL	9	BDL	**440**	10	BDL	1	BDL
MAGNESIUM	NSE	NSE	29,000	29,000	38,000	35,000	90,000	18,000	19,000	8,200	9,600
MERCURY (1)	1.4	0.77	BDL	BDL	BDL	BDL	**2**	BDL	BDL	BDL	BDL
NICKEL (1)	144.9	16.1	52	11	25	11	270	20	8	5	6
POTASSIUM	NSE	NSE	26,000	29,000	68,000	40,000	50,000	20,000	20,000	21,000	24,000
SELENIUM	NSE	5	BDL	BDL	6	BDL	9	BDL	BDL	BDL	BDL
SILVER	0.32	NSE	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
SODIUM	NSE	NSE	88,000	70,000	220,000	160,000	22,000	21,000	43,000	35,000	42,000
THALLIUM	1400	40	2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
ZINC (1)	35.4	32.2	**83**	11	**49**	8	**530**	**50**	19	10	**900**
COBALT	NSE	NSE	19	BDL	BDL	BDL	200	10	3	3	3
BERYLLIUM	130	5.3	1	BDL	BDL	BDL	11	BDL	BDL	BDL	BDL
MANGANESE	NSE	NSE	3,300	140	3,500	790	200,000	5,800	2,800	1,200	1,500
ANTIMONY	9000	1600	BDL	BDL	8	BDL	BDL	BDL	BDL	BDL	BDL
VANADIUM	NSE	NSE	49	1	11	BDL	360	19	BDL	BDL	BDL

NOTES:

1. BDL = Below Method Detection Limit
2. Bolded values indicates exceedance of NHDES acute surface water criteria.
3. Shaded values indicate exceedance of NHDES chronic surface water criteria.
4. Shaded and bolded values indicate exceedances of both NHDES acute and chronic criteria.
5. (1) = Criteria for these metals are expressed as a function of the water effect ratio (WER)
   The values displayed in this table correspond to a WER of 1.0.
6. NSE indicates no standard has been established for the indicated parameter.
7. H = Duplicate sample indicates possible
heterogeneity.
8 Volatile organic compound and metals results are in micrograms per liter (ug/l).

TABLE 7

SUMMARY OF 2007 LEACHATE ANALYTICAL RESULTS
2007 ANNUAL MONITORING PLAN DATA ASSESSMENT REPORT
COAKLEY LANDFILL OU-1 AND OU-2
NORTH HAMPTON, NEW HAMPSHIRE

SAMPLE IDENTIFICATION	DES SURFACE WATER STANDARDS		L-1	L-1	L-1	L-1	L-1	L-1	L-1	
DATE SAMPLED			16-Aug-01	7-Aug-02	27-Aug-03	25-Aug-04	25-Aug-05	30-Nov-06	13-Nov-07	
COMMENTS	ACUTE	CHRONIC						ID 104240		
PARAMETER ANALYZED										
VOCs BY EPA METHOD 8260BC IN ug/L										
BENZENE	5300	NSE	3	2	2	BDL	2	2	3	
CHLOROBENZENE	250	50	27	15	18	12	20	18	22	
CHLOROETHANE	NSE	NSE	8	6	6	3	6	BDL	6	
CHLOROFORM	28.9	1240	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
1,4 DICHLOROBENZENE	1120	763	BDL	3	2	BDL	3	2	3	
1,2 DICHLOROBENZENE									1	
ISOPROPYLBENZENE	NSE	NSE	BDL	BDL	BDL	BDL	BDL	2	2	
DIETHYL ETHER	NSE	NSE	31	BDL	BDL	BDL	BDL	BDL	23	
TETRAHYDROFURAN	NSE	NSE	32	BDL	BDL	BDL	BDL	BDL	20	
METALS BY EPA METHOD 6020 IN ug/L			Total	Total	Total	Total	Total		Total	Dissolved
ALUMINUM	**750**	87	**3200**	**4100**	**9,500**	**29,000**	**18,000**		BDL	BDL
ARSENIC	340	150	83	23	67	150	300		7	6
BARIUM	NSE	NSE	1300	260	610	2200	4600		97	99
CADMIUM	0.95	0.80	BDL	BDL	BDL	BDL	BDL		BDL	BDL
CALCIUM	NSE	NSE	120,000	97,000	100,000	140,000	150,000		50,000	62,000
CHROMIUM	183	24	20	13	27	55	70		BDL	BDL
COPPER	**3.6**	2.7	BDL	**5**	**13**	**36**	**40**		BDL	1
IRON	NSE	1,000	350,000	130,000	330,000	1,000,000	1,100,000		30,000	27,000
LEAD	14	0.54	BDL	2	8	**34**	BDL		BDL	BDL
MAGNESIUM	NSE	NSE	49,000	43,000	36,000	34,000	43,000		20,000	25,000
MERCURY	1.4	0.77	BDL	BDL	BDL	BDL	BDL		BDL	BDL
NICKEL	144.9	16.1	22	18	28	32	40		7	8
POTASSIUM	NSE	NSE	66	55	46,000	38,000	50,000		34,000	40
SELENIUM	NSE	5	7	8	4	3	BDL		BDL	BDL
SILVER	0.32	NSE	BDL	BDL (2)	**2**	BDL	BDL		BDL	BDL
SODIUM	NSE	NSE	220,000	200,000	160,000	140,000	150,000		130,000	150,000
THALLIUM	1,400	40	BDL	BDL	BDL	BDL	BDL		BDL	BDL
ZINC	36.2	36.5	**45**	**51**	**140**	**390**	**690**		BDL	**650**
COBALT	NSE	NSE	BDL	3	6	11	10		BDL	1
BERYLLIUM	130	5.3	3	BDL	BDL	3	BDL		BDL	BDL
MANGANESE	NSE	NSE	7,600	5,700	5,900	10,000	9,800		2,700	3,200
ANTIMONY	9,000	1,600	6	BDL	BDL	BDL	BDL		BDL	BDL
VANADIUM	NSE	NSE	46	13	36	89	220		1	1
CHEMICAL OXYGEN DEMAND BY EPA METHOD 410.4 IN mg/l	NSE	NSE	190	178	560	282	377		70	
CYANIDE (Total)									BDL	
AMMONIA BY EPA METHOD 350.3 IN mg/l	36.1	3.08	**44.0**	**41.0**	**44.8**	**56.8**	**79.0**		33	

FIELD PARAMETERS	
Temperature Degrees C	11.81
pH	6.19
Conductivity in us/cm	1600
Dissolved Oxygen in mg/l	2.23
Turbidity in NTU	17.9
Oxidation/Reduction Potential in mV	138

NOTES:

1. BDL = Below Method Detection Limit
2. Only contaminants detected in one or more leachate samples are listed in this table.
3. Acute surface water standard shown for ammonia is for a surface water with a pH of 7.0.
4. (1) = Criteria for these metals are expressed as a function of the water effect ration (WER) as defined in 40 CFR 131.36 c, the values displayed in this table correspond to a WER of 1.0.
5. A bold entry indicates the parameter exceeded the acute surface water standard.
6. Shaded values indicate the parameter exceeded the chronic surface water standard.
7. Bold and shaded values indicate exceedances of both NHDES acute and chronic criteria.
7. NSE indicates no standard has been established for the indicated parameter.
8. Volatile organic compounds and metals results are in micrograms per liter (ug/l).

TABLE 8

SUMMARY OF 2007 SEDIMENT ANALYTICAL RESULTS
2007 ANNUAL MONITORING PLAN DATA ASSESSMENT REPORT
COAKLEY LANDFILL OU-1 AND OU-2
NORTH HAMPTON, NEW HAMPSHIRE

SAMPLE IDENTIFICATION	NHDES	**SED-4**	**SED-4**	**SED-5**	**SED-5**	**SED-5/3T**	**SED-103**	**SED-1T**	**SED-2T**	**SED-4T**	**SED-5T**	**SED-6T**
DATE SAMPLED	S-1 Soil	29-Aug-06	15-Nov-07	29-Aug-05	30-Aug-06	15-Nov-07	13-Nov-07	13-Nov-07	13-Nov-07	15-Nov-07	13-Nov-07	13-Nov-07
METALS BY EPA METHOD 6020 IN mg/kg	Standard											
ALUMINUM	NE	6,700	3,800	6,600	34,000	9,900	6200	10,000	19,000	8,700	10,000	14,000
ARSENIC	11	BDL	4.2	310	17	15	1.5	13	17	19	4.7	3.2
BARIUM	1000	49	68	270	150	110	18	78	110	54	60	82
CADMIUM	33	BDL	0.8	BDL	BDL	2.7	BDL	BDL	BDL	BDL	BDL	BDL
CALCIUM	NE	12,000	15,000	8,900	3,600	8,700	1400	5,300	2,300	8,200	11,000	2,600
CHROMIUM	1000	BDL	4.0	13	69	39	13	32	44	11	17	28
COPPER	NE	20	17	6	45	55	1.9	12	27	7.2	12	9
IRON	NE	2,400	3,100	210,000	40,000	54,000	5600	8,400	25,000	8,400	4,100	6,600
LEAD	400	110	68	20	23	4,000	4.1	15	23	39	11	13
MAGNESIUM	NE	2,400	2,000	3,200	10,000	4,500	1600	2,200	6,500	1,500	1,600	2,000
MERCURY	6	BDL	0.5	0.5	BDL	0.9	BDL	BDL	BDL	0.3	0.2	BDL
NICKEL	400	BDL	7.4	9	53	32	7.0	16	33	6.8	11	18
POTASSIUM	NE	340	300	1,300	8,200	1,600	500	1,300	4,700	1,000	1,100	1,500
SELENIUM	180	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
SILVER	89	BDL	BDL	BDL	BDL	1.4	BDL	BDL	BDL	BDL	BDL	BDL
SODIUM	NE	1100	300	240	800	400	300	300	500	400	500	300
THALLIUM	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
ZINC	1000	74	110	38	130	700	15	26	70	28	35	29
COBALT	NE	BDL	2.3	6	14	9.7	2.2	5.1	9.4	3.8	2	3
BERYLLIUM	1	BDL	BDL	BDL	BDL	BDL	BDL	0.9	1.0	0.7	BDL	BDL
MANGANESE	5200	160	910	2,500	500	600	97	350	400	760	250	73
ANTIMONY	9	BDL	1.0	BDL	BDL	1.0	BDL	BDL	BDL	BDL	BDL	BDL
VANADIUM	NE	29	14	17	55	24	10	18	38	17	13	17
CYANIDE	100		1.3			1.2	BDL	BDL	BDL	0.6	BDL	BDL

NOTES:
1. BDL = Below Method Detection Limit
2. Results are in milligrams per kilogram (mg/kg).

SECTION 1

TABLE 2-2
COAKLEY LANDFILL SUPERFUND SITE
OU-1 GROUNDWATER MONITORING NETWORK,
ANALYTICAL PARAMETERS, AND SAMPLING FREQUENCY

	Groundwater												Residential Wells	
Sampling Point	MW-4	MW-5S	MW-5D	MW-6	MW-8	MW-9	MW-10	MW-11	RMW-3	BP-4	OP-2	OP-5	R-3	R-5
Field Parameters														
Static Water Level	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Turbidity	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Specific Conductance	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Temperature	A	A	A	A	A	A	A	A	A	A	A	A	A	A
pH	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Dissolved Oxygen	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Dissolved Metals														
Dissolved Iron	A	A	N/A	A	N/A	A	N/A	N/A	N/A	N/A	A	A	N/A	N/A
Dissolved Manganese	A	A	N/A	A	N/A	A	N/A	N/A	N/A	N/A	A	A	N/A	N/A
TAL Metals (Total)														
Aluminum	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Arsenic	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Barium	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Cadmium	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Calcium	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Chromium	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Copper	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Iron	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Lead	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Magnesium	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Mercury	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Nickel	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Potassium	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Selenium	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Silver	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Sodium	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Thallium	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Zinc	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Cobalt	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Beryllium	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Manganese	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Antimony	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Vanadium	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
Volatile Organic Compounds	N/A	A	A	A	A	N/A	N/A	A	N/A	N/A	N/A	N/A	A	A

Notes:
1. A = Annual
2. N/A = Not Analyzed

TABLE 2-3
COAKLEY LANDFILL SUPERFUND SITE
OU-2 GROUNDWATER MONITORING NETWORK,
ANALYTICAL PARAMETERS, AND SAMPLING FREQUENCY

Sampling Point	FPC-2A	FPC-2B	FPC-4B	FPC-5A	FPC-5B	FPC-6A	FPC-6B	FPC-7A	FPC-7B	FPC-8A	FPC-8B	FPC-9A	FPC-11A	FPC-11B	GZ-105	GZ-123	GZ-125	AE-1A	AE-1B	AE-2A	AE-2B	AE-3A	AE-3B	AE-4A	AE-4B
Field Parameters																									
Static Water Level	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Turbidity	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Specific Conductance	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Temperature	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
pH	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Dissolved Oxygen	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Dissolved Metals																									
Dissolved Iron	A	A	A	N/A	N/A	A	A	A	A	N/A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Dissolved Manganese	A	A	A	N/A	N/A	A	A	A	A	N/A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
TAL Metals (Total)																									
Aluminum	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Arsenic	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Barium	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Beryllium	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Calcium	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Cadmium	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Chromium	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Copper	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Iron	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Lead	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Magnesium	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Mercury	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Nickel	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Potassium	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Selenium	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Silver	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Sodium	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Thallium	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Zinc	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Cobalt	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Manganese	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Antimony	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Vanadium	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volatile Organic Compounds	A	A	A	N/A	N/A	A	A	N/A	N/A	A	A	N/A	N/A	N/A	A	A	A	N/A	N/A	A	A	A	A	A	A

Notes:
1. A = Annual
2. N/A = Not Analyzed

TABLE 2-4
COAKLEY LANDFILL SUPERFUND SITE
GROUNDWATER ELEVATION MONITORING NETWORK AND SCHEDULE

Site ID	Monitored Zone	Screened Interval (ftbgs)	Monitoring Frequency
Operating Unit 1 Wells			
BP-4	Bedrock	33.6-99.0	Annual
MW-10	Overburden	5-10	Annual
MW-11	Bedrock	32-52	Annual
MW-2	Overburden	10-20	Annual
MW-4	Overburden	28-38	Annual
MW-5D	Bedrock	139-159	Annual
MW-5S	Overburden	48-78	Annual
MW-6	Bedrock	25-184	Annual
MW-8	Bedrock	44-65	Annual
MW-9	Overburden	5-10	Annual
OP-2	Overburden	7-12	Annual
OP-5	Overburden	13-23	Annual
RMW-3	Overburden	29-34	Annual
Operating Unit 2 Wells			
AE-1A	Overburden	54-64	Annual
AE-1B	Bedrock	75-85	Annual
AE-2A	Overburden	10-20	Annual
AE-2B	Bedrock	40-50	Annual
AE-3A	Overburden	28-40	Annual
AE-3B	Bedrock	28-40	Annual
AE-4A	Overburden	5-15	Annual
AE-4B	Bedrock	34-44	Annual
FPC-2A	Overburden	6-16	Annual
FPC-2B	Bedrock	22.5-37.5	Annual
FPC-4B	Bedrock	18-33	Annual
FPC-5A	Overburden	54-64	Annual
FPC-5B	Bedrock	95-110	Annual
FPC-6A	Overburden	1.75-2.75	Annual
FPC-6B	Bedrock	13-28	Annual
FPC-7A	Overburden	16.7-21.7	Annual
FPC-7B	Bedrock	29.8-44.8	Annual
FPC-8A	Overburden	23-33	Annual
FPC-8B	Bedrock	40-55	Annual
FPC-9A	Overburden	58-68	Annual
FPC-9B	Bedrock	72-87	Annual
FPC-9C	Overburden	15-25	Annual
FPC-11A	Overburden	47-52	Annual
FPC-11B	Bedrock	58-73	Annual
GZ-105	Bedrock	35-50	Annual
GZ-109	Bedrock	103-252	Annual
GZ-123	Overburden	9.5-16.5	Annual
GZ-125	Bedrock	57-200	Annual

TABLE 2-5
COAKLEY LANDFILL SUPERFUND SITE
SURFACE WATER, SEDIMENT, AND LEACHATE MONITORING NETWORK, ANALYTICAL PARAMETERS, AND SAMPLING FREQUENCY

	Surface Water			Sediment		Leachate
Sampling Point	SW-4	SW-5	SW-103	SED-4	SED-5	L-1
Field Parameters						
Turbidity	A	A	A	N/A	N/A	A
Specific Conductance	A	A	A	N/A	N/A	A
Temperature	A	A	A	N/A	N/A	A
pH	A	A	A	N/A	N/A	A
Dissolved Oxygen	A	A	A	N/A	N/A	A
Inorganic Paramters						
Chemical Oxygen Demand	N/A	N/A	N/A	N/A	N/A	A
Ammonia	A	A	A	N/A	N/A	A
TAL Metals (Total)						
Aluminum	A	A	A	A	A	A
Arsenic	A	A	A	A	A	A
Barium	A	A	A	A	A	A
Cadmium	A	A	A	A	A	A
Calcium	A	A	A	A	A	A
Chromium	A	A	A	A	A	A
Copper	A	A	A	A	A	A
Iron	A	A	A	A	A	A
Lead	A	A	A	A	A	A
Magnesium	A	A	A	A	A	A
Mercury	A	A	A	A	A	A
Nickel	A	A	A	A	A	A
Potassium	A	A	A	A	A	A
Selenium	A	A	A	A	A	A
Silver	A	A	A	A	A	A
Sodium	A	A	A	A	A	A
Thallium	A	A	A	A	A	A
Zinc	A	A	A	A	A	A
Cobalt	A	A	A	A	A	A
Beryllium	A	A	A	A	A	A
Manganese	A	A	A	A	A	A
Antimony	A	A	A	A	A	A
Vanadium	A	A	A	A	A	A
Volatile Organic Compounds	A	A	A	N/A	N/A	A

Notes:
1. A = Annual
2. N/A = Not Analyzed

Sediment and Surface Water Toxicity Testing
Sampling and Analysis Requirements

Introduction

This document outlines the sampling and analysis requirements for the Sediment and Surface Water Toxicity Testing program for the Coakley Landfill Superfund Site (the Site). The Sediment and Surface Water Toxicity Testing program is designed to evaluate the ecological protectiveness of existing Site remedies. The sampling and analysis program outlined in this document is a one-time sampling event to be conducted concurrent with the 2007 annual environmental monitoring event as specified in the Project Operations Plan (POP) and associated Environmental Monitoring Plan (EMP) and Quality Assurance Project Plan (QAPP, Golder 2007). The need for additional toxicity testing will be evaluated based on the results of the sampling and analysis outlined in this document.

Sampling Procedures and Requirements

The Sampling and Reporting Contractor will collect sediment and surface water samples from the nine (9) sample locations shown on Figure 1. Note that two of the sediment sample locations (SED-4 and SED-5) are part of the annual environmental sampling program.

Sediment Sampling Procedures and Requirements
Sediment samples shall be collected following the methods prescribed in Standard Operating Procedures (SOPs) presented in Appendix B of the EMP. The Sampling and Reporting Contractor shall collect two gallons of sediment from each of the nine (9) locations using a clean shovel or six-inch diameter auger. Plant matter (twigs, leaves, roots) and rocks shall be removed from the sample after it has been placed in a clean plastic bowl or bucket. The sample shall then be thoroughly mixed. An aliquot shall then be removed and placed in an appropriate sample container for analysis of TAL metals and cyanide by the chemical analytical laboratory. The remaining sample shall be placed in clean containers provided by the toxicity testing laboratory (EnviroSystems Inc., P.O. Box 778, One Lafayette Road, Hampton, NH, 03842). The sample identification shall be clearly marked on both the container and lid of the container using indelible ink. Sample I.D.s shall correspond to the I.D.s for the samples collected for chemical analysis. Collected samples for toxicity testing shall be transported to EnviroSystems Inc. under chain-of-custody procedures the day of sample collection. EnviroSystems Inc.shall immediately refrigerate the samples pending toxicity testing. Toxicity testing shall be initiated within six weeks of sample collection. Collected samples for chemical analysis shall be transported to the analytical chemistry laboratory.

Samples collected for chemical analysis shall be analyzed for parameters listed in Table 2-5 of the EMP in accordance with the procedures specified in the QAPP. Samples shall be analyzed by the same laboratory selected for the annual monitoring program.

Toxicity testing shall only be conducted on the sample exhibiting the highest potential toxicity, as predicted by the highest concentrations of heavy metals and their associated exceedance of sediment toxicity benchmarks. The proposed selection of the sample for toxicity testing shall be reviewed and approved by EPA. Toxicity testing shall be conducted in accordance with the EPA protocol detailed in *Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates* Second Edition EPA 600/R-99/064 March 2000 (http://www.epa.gov/waterscience/cs/freshmanual.pdf). The tests will include the 10-day EPA Test Method 100.2 for larval midge (Chironomus tentans) and the 10-day EPA Test Method 100.1 for the amphipod (Hyallela azteca).

Surface Water Sampling Procedures and Requirements

Surface water samples shall be collected and analyzed for TAL metals (total and dissolved metals) and cyanide following the methods prescribed in Standard Operating Procedures (SOPs) presented in Appendix B of the EMP. The Sampling and Reporting Contractor shall collect surface water from each of the nine (9) locations, if possible (i.e. if there is sufficient standing water). Water samples can be taken by immersion or pumping with care taken to minimize collection of material floating on the surface, or suspended sediment or plant material. Dissolved samples should be prepared by filtering an aliquot of the collected sample in the field. The samples shall then be preserved as appropriate in the appropriate containers and transported to same laboratory selected for the annual monitoring program for analysis of parameters listed in Table 2-5 of the EMP in accordance with the procedures specified in the QAPP.

Toxicity testing shall only be conducted on the sample exhibiting the highest potential toxicity, as predicted by the highest concentrations of heavy metals and their associated exceedance of surface water quality criteria or surface water toxicity benchmarks (for those chemicals without criteria). The proposed selection of the sample for toxicity testing shall be reviewed and approved by EPA.

After the sample location for surface water toxicity testing is selected, the Sampling and Reporting Contractor shall collect a 2-gallon sample of surface water from that location. This sample shall be refrigerated on water ice and transported to EnviroSystems for toxicity testing. The sample identification shall be clearly marked on both the container and lid of the container using indelible ink. Sample I.D.s shall correspond to the I.D.s for the samples collected for chemical analysis. Collected samples for toxicity testing shall be transported to EnviroSystems Inc. under chain-of-custody procedures the day of sample collection. EnviroSystems Inc.shall immediately refrigerate the samples pending analysis. Toxicity testing shall be initiated within 24 hours of sample collection. The Sampling and Reporting Contractor shall coordinate the sampling date and time with EnviroSystems to ensure that EnviroSystems will be ready to begin testing within 24 hours of sample collection. Toxicity testing shall be conducted in accordance with the

EPA protocol detailed in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* EPA-821-R-02-013, October 2002 (http://www.epa.gov/waterscience/methods/wet/disk3/ctf.pdf). The test will include the 7- day EPA Test Method 1002.0 with waterflea (Ceriodaphnia dubia) and the 7-day EPA Test Method 1000.0) with larval fathead minnows (Pimephales promelas).