DENR USE ONLY: ☐ Paper Report ☒ Electronic Data - Email CD (data loaded: Yes / No) Doc/Event #: R003028

NC DENR
Division of Waste Management - Solid Waste

Environmental Monitoring Reporting Form

Notice: This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

Instructions:

- **Prepare one form for each individually monitored unit.**
- **Please type or print legibly.**
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i).
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

Solid Waste Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

Joyce Engineering, Inc.

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Van Burbach Phone: (336) 323-0092

E-mail: vburbach@joyceengineering.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
North Wake Landfill	9100 Deponie Dr. Raleigh, NC 27614	92-09	.1600	Nov. 9, 2007

Environmental Status: (Check all that apply)

☐ Initial/Background Monitoring ☐ Detection Monitoring ☐ Assessment Monitoring ☐ Corrective Action

Type of data submitted: (Check all that apply)

☐ Groundwater monitoring data from monitoring wells
☐ Groundwater monitoring data from private water supply wells
☒ Leachate monitoring data
☐ Surface water monitoring data
☐ Methane gas monitoring data
☐ Corrective action data (specify) _____
☐ Other(specify)

Notification attached?

☒ No. No groundwater or surface water standards or explosive methane gas limits were exceeded.
☐ Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.
☐ Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.

G. Van Ness Burbach, Ph.D., P.G. Sr. Project Consultant (336) 323-0092

Facility Representative Name (Print) Title (Area Code) Telephone Number

Signature 1/31/07 Date

Affix NC Licensed/ Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 1949 GEOLOGIST G. VAN NESS BURBACH

Revised 10/2006

ENGINEERING, INC.

Waste Industry Experts

Joyce Engineering, Inc
2211 W. Meadowview Road
Suite 101
Greensboro, NC 27407

tel: **336/323-0092**
fax: **336/323-0093**

www.JoyceEngineering.com

January 31, 2007

Mr. Ethan Brown
North Carolina Department of Environment and Natural Resources
Division of Waste Management - Solid Waste Section
1647 Mail Service Center
Raleigh, NC 27699-1646

RE: Report of Semiannual Leachate Sampling – November 2006 Event
North Wake Landfill, Wake County, NC
Permit No. 92-09
JEI Project No. 661.00, Task 23

Dear Ethan:

Enclosed is a report of the laboratory analytical results for the semiannual leachate monitoring conducted in November 2006 at the North Wake Landfill. In accordance with the North Carolina Department of Environmental and Natural Resources (NCDENR) Solid Waste Management Rule (SWMR) .1626(12)(c) and NC Solid Waste Permit Number 92-09, Joyce Engineering, Inc. (JEI) collected a 24-hour composite sample of discharge from the leachate pond on November 8-9, 2006. The samples were sent to Environmental Conservation Laboratories, Inc. and analyzed for the NCSWMR Appendix I list of volatile organic compounds and metals, plus BOD, COD, sulfate, nitrate, and phosphorus.

The field data form, the laboratory reports, and the chains of custody for this event are enclosed with this report. The next semiannual sampling event is scheduled to take place in May 2007 in conjunction with discharge sampling during an appropriate discharge event. If you have any questions, please feel free to contact me at (336) 323-0092.

Sincerely,
JOYCE ENGINEERING, INC.

Van Burbach, PG
Sr. Project Consultant

Enclosure

C: Johnny Beal, Wake County
Dan LaMontagne, Wake County
Farrell Kidd, North Wake Landfill

P:\Wake County\Tasks\Leachate\Leachate Sampling\Sampling 2006\November 2006\DENR List\DENR Transmittal Letter.doc

LEACHATE FIELD MONITORING LOG

Sampling Location: North Wake Landfill, Raleigh, NC **Sampling Point ID:** WW-Pipe-01

Sampling Date: 11-8-06 **Sampler(s):** Joe Peacock

Sample Type: Grab ____ Composite (Manual) ____ Composite (Auto-sampler): ✓

Sampling Parameters: Nitrogen (total)

Initiation of Discharge: **Date/Time:** 11-7-06 09:10 **Flow Meter:** 76314330 **gallons**

Initiation of Sampling: **Date/Time:** 11-7-06 09:10 **Flow Meter:** 76314330 **gallons**

Time of Sampling: **Date/Time:** 11-8-06 09:55 **Flow Meter:** 76397560 **gallons**

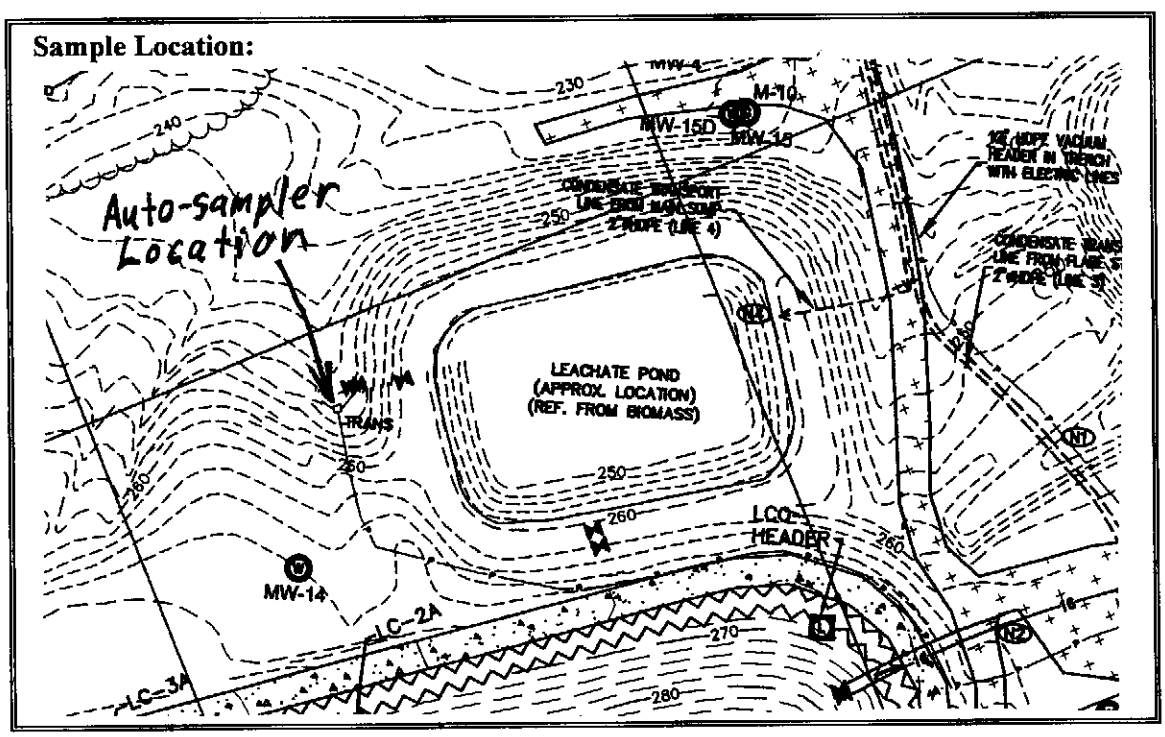
End of Discharge: **Date/Time:** 11-10-06 10:30 **Flow Meter:** 76525060 **gallons**

Flow Rate (from meter): 62-63 **GPM** **Total 24-hour flow:** 83,230 **gallons**

pH: 8.18 **Type of pH meter:** Oakton

Comments/Sample Description (color, appearance, odor, immiscible layers, silt, etc.):

Sample Location:



Signature: [signature] **Date:** 11-28-06

Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary NC, 27511
Phone: 919.467.3090 FAX: 919.467.3515

www.encolabs.com

Tuesday, December 12, 2006

Joyce Engineering (JO004)

Attn: Van Burbach

Boone Bldg. Suite 101, 2211 W. Meadowview Road

Greensboro, NC 27407

RE: Project Number: 661.14, Project Name/Desc: North Wake Co. LF - DENR Leachate
ENCO Workorder: C604152

Dear Van Burbach,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Thursday, November 9, 2006.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

This data has been produced in accordance with NELAC standards (June, 2003). This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Bob George For Chuck Smith

Project Manager

Enclosure(s)

The total number of pages in this report, including this page is 21.

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: WW Pipe-01 **Lab ID:** C604152-01

Sampled: 11/09/06 10:45 **Received:** 11/09/06 13:20

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 300.0	11/11/06 10:45	11/10/06 10:00	11/11/2006 11:08
EPA 300.0	12/07/06	11/10/06 10:00	11/11/2006 11:08
EPA 365.4	12/07/06	11/10/06 12:48	11/11/2006 22:10
EPA 405.1	11/11/06 10:45 11/15/06	11/10/06 15:00	11/15/2006 11:05
EPA 410.4	12/07/06	11/30/06 09:25	11/30/2006 14:00
EPA 6010B	05/08/07	11/10/06 09:54	11/15/2006 12:35
EPA 6010B	05/08/07	11/15/06 13:35	11/15/2006 15:58
EPA 8260B	11/23/06	11/15/06 07:24	11/16/2006 03:47

Client ID: Equip. Blank **Lab ID:** C604152-02

Sampled: 11/09/06 11:20 **Received:** 11/09/06 13:20

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 300.0	11/11/06 11:20	11/10/06 10:00	11/11/2006 11:37
EPA 300.0	12/07/06	11/10/06 10:00	11/11/2006 11:37
EPA 365.4	12/07/06	11/10/06 12:48	11/11/2006 22:15
EPA 405.1	11/11/06 11:20 11/15/06	11/10/06 15:00	11/15/2006 11:05
EPA 410.4	12/07/06	11/30/06 09:25	11/30/2006 14:00
EPA 6010B	05/08/07	11/10/06 09:54	11/15/2006 12:42
EPA 6010B	05/08/07	11/15/06 13:35	11/15/2006 16:04
EPA 8260B	11/23/06	11/15/06 07:24	11/16/2006 05:03

Client ID: Trip Blank **Lab ID:** C604152-03

Sampled: 11/09/06 00:00 **Received:** 11/09/06 13:20

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	11/23/06	11/15/06 07:24	11/16/2006 00:19

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SAMPLE DETECTION SUMMARY

Client ID: WW Pipe-01	Lab ID: C604152-01	NC SWS RL		
Analyte	**Results/Qual**		**Units**	**Method**
2-Butanone	880 D	51	ug/L	EPA 8260B
4-Methyl-2-pentanone	9.6 J, D	51	ug/L	EPA 8260B
Acetone	1700 D	51	ug/L	EPA 8260B
Antimony	3.5 J	6.5	ug/L	EPA 6010B
Barium	199	60	ug/L	EPA 6010B
Biochemical Oxygen Demand	68 B-04		mg/L	EPA 405.1
Chemical Oxygen Demand	570	NE	mg/L	EPA 410.4
Cobalt	8.4 J	10	ug/L	EPA 6010B
Copper	12.4	7.5	ug/L	EPA 6010B
Nickel	79.9	30	ug/L	EPA 6010B
Nitrate as N	0.66 D	NE	mg/L	EPA 300.0
Phosphorus	0.50		mg/L	EPA 365.4
Vanadium	7.1 J	25	ug/L	EPA 6010B
Zinc	43.7	10	ug/L	EPA 6010B

Client ID: Equip. Blank	Lab ID: C604152-02	NC SWS RL		
Analyte	**Results/Qual**		**Units**	**Method**
Acetone	5.1	51	ug/L	EPA 8260B
Antimony	3.1 J	6.5	ug/L	EPA 6010B
Barium	0.60 J	60	ug/L	EPA 6010B
Chemical Oxygen Demand	26	NE	mg/L	EPA 410.4

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ANALYTICAL REPORT

Sample ID:	WW Pipe-01	Project:	North Wake Co. LF - DENR Leachate
Lab #:	C604152-01	Work Order #:	C604152
Prep. Method:	EPA 5030B_MS	Matrix:	Surface Water
Analyzed:	11/16/06 By: spf	Unit:	ug/L
Anal. Method:	EPA 8260B	Dilution Factor:	10
Anal. Batch:			
QC Batch:	6K15004		

Volatile Organic Compounds by GCMS

Parameter	CAS Number	Analytical Results	MDL	MRL	NC SWS RL	Units
1,1,1,2-Tetrachloroethane	630-20-6	2.0 U, D	2.0	10	3	ug/L
1,1,1-Trichloroethane	71-55-6	2.0 U, D	2.0	10	3	ug/L
1,1,2,2-Tetrachloroethane	79-34-5	3.0 U, D	3.0	10	3	ug/L
1,1,2-Trichloroethane	79-00-5	4.0 U, D	4.0	10	3	ug/L
1,1-Dichloroethane	75-34-3	4.0 U, D	4.0	10	3	ug/L
1,1-Dichloroethene	75-35-4	4.0 U, D	4.0	10	3	ug/L
1,2,3-Trichloropropane	96-18-4	5.0 U, D	5.0	10	8	ug/L
1,2-Dibromo-3-chloropropane	96-12-8	6.0 U, D	6.0	10	13	ug/L
1,2-Dibromoethane	106-93-4	4.0 U, D	4.0	10	3	ug/L
1,2-Dichlorobenzene	95-50-1	3.0 U, D	3.0	10	3	ug/L
1,2-Dichloroethane	107-06-2	4.0 U, D	4.0	10	3	ug/L
1,2-Dichloropropane	78-87-5	2.0 U, D	2.0	10	3	ug/L
1,4-Dichlorobenzene	106-46-7	3.0 U, D	3.0	10	3	ug/L
2-Butanone	78-93-3	**880** D	8.0	50	51	ug/L
2-Hexanone	591-78-6	5.0 U, D	5.0	50	26	ug/L
4-Methyl-2-pentanone	108-10-1	**9.6** J, D	8.0	50	51	ug/L
Acetone	67-64-1	**1700** D	12	50	51	ug/L
Acrylonitrile	107-13-1	17 U, D	17	50	102.5	ug/L
Benzene	71-43-2	2.0 U, D	2.0	10	3	ug/L
Bromochloromethane	74-97-5	5.0 U, D	5.0	10	3	ug/L
Bromodichloromethane	75-27-4	2.0 U, D	2.0	4.0		ug/L
Bromoform	75-25-2	3.0 U, D	3.0	10	3	ug/L
Bromomethane	74-83-9	6.0 U, D	6.0	10	5.5	ug/L
Carbon disulfide	75-15-0	3.0 U, D	3.0	50	51	ug/L
Carbon tetrachloride	56-23-5	2.0 U, D	2.0	10	5.5	ug/L
Chlorobenzene	108-90-7	3.0 U, D	3.0	10	3	ug/L
Chloroethane	75-00-3	4.0 U, D	4.0	10	5.5	ug/L
Chloroform	67-66-3	4.0 U, D	4.0	10	3	ug/L
Chloromethane	74-87-3	2.0 U, D	2.0	10	5.5	ug/L
cis-1,2-Dichloroethene	156-59-2	2.0 U, D	2.0	10	3	ug/L
cis-1,3-Dichloropropene	10061-01-5	2.0 U, D	2.0	2.0	5.5	ug/L
Dibromochloromethane	124-48-1	3.0 U, D	3.0	10	3	ug/L
Dibromochloromethane	124-48-1	3.0 U, D	3.0	10	3	ug/L
Dibromomethane	74-95-3	3.0 U, D	3.0	10	5.5	ug/L
Ethylbenzene	100-41-4	1.0 U, D	1.0	10	3	ug/L
Iodomethane	74-88-4	8.0 U, D	8.0	20	6	ug/L
m,p-Xylenes	108-38-3/106-42-3	3.0 U, D	3.0	20	NE	ug/L
Methylene chloride	75-09-2	4.0 U, D	4.0	20		ug/L
o-Xylene	95-47-6	2.0 U, D	2.0	10	NE	ug/L
Styrene	100-42-5	1.0 U, D	1.0	10	5.5	ug/L

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ANALYTICAL REPORT

Sample ID:	WW Pipe-01	Project:	North Wake Co. LF - DENR Leachate
Lab #:	C604152-01	Work Order #:	C604152
Prep. Method:	EPA 5030B_MS	Matrix:	Surface Water
Analyzed:	11/16/06 By: spf	Unit:	ug/L
Anal. Method:	EPA 8260B	Dilution Factor:	10
Anal. Batch:			
QC Batch:	6K15004		

Volatile Organic Compounds by GCMS

Parameter	CAS Number	Analytical Results	MDL	MRL	NC SWS RL	Units
Tetrachloroethene	127-18-4	9.0 U, D	9.0	10	3	ug/L
Toluene	108-88-3	2.0 U, D	2.0	10	3	ug/L
trans-1,2-Dichloroethene	156-60-5	4.0 U, D	4.0	10	3	ug/L
trans-1,3-Dichloropropene	10061-02-6	2.0 U, D	2.0	2.0	5.5	ug/L
trans-1,4-Dichloro-2-butene	110-57-6	5.0 U, D	5.0	10	50.5	ug/L
Trichloroethene	79-01-6	4.0 U, D	4.0	10	3	ug/L
Trichlorofluoromethane	75-69-4	2.0 U, D	2.0	10	3	ug/L
Vinyl acetate	108-05-4	10 U, D	10	20	26	ug/L
Vinyl chloride	75-01-4	3.0 U, D	3.0	10	5.5	ug/L

Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
4-Bromofluorobenzene	460-00-4	55	50.0	110 %	70-130
Dibromofluoromethane	1868-53-7	49	50.0	98 %	73-138
Toluene-d8	2037-26-5	53	50.0	106 %	77-113

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ANALYTICAL REPORT

Sample ID: WW Pipe-01
Lab #: C604152-01

Project: North Wake Co. LF - DENR Leachate
Work Order #: C604152
Matrix: Surface Water

Metals by EPA 6000/7000 Series Methods

Parameter	CAS Number	Analytical Results	MDL	MRL	NC SWS RL	Units	Analysis Method	Prep Method	Analytical Batch
Antimony	7440-36-0	**3.5** J	2.0	10.0	6.5	ug/L	EPA 6010B	EPA 3005A	6K10007
Arsenic	7440-38-2	2.0 U	2.0	10.0	7.5	ug/L	EPA 6010B	EPA 3005A	6K10007
Barium	7440-39-3	**199**	0.20	10.0	60	ug/L	EPA 6010B	EPA 3005A	6K10007
Beryllium	7440-41-7	0.70 U	0.70	1.00	1	ug/L	EPA 6010B	EPA 3005A	6K10007
Cadmium	7440-43-9	0.50 U	0.50	1.00	1	ug/L	EPA 6010B	EPA 3005A	6K10007
Chromium	7440-47-3	2.0 U	2.0	10.0	7.5	ug/L	EPA 6010B	EPA 3005A	6K10007
Cobalt	7440-48-4	**8.4** J	2.0	10.0	10	ug/L	EPA 6010B	EPA 3005A	6K10007
Copper	7440-50-8	**12.4**	0.60	10.0	7.5	ug/L	EPA 6010B	EPA 3005A	6K10007
Lead	7439-92-1	2.0 U	2.0	10.0	6.5	ug/L	EPA 6010B	EPA 3005A	6K10007
Nickel	7440-02-0	**79.9**	2.0	10.0	30	ug/L	EPA 6010B	EPA 3005A	6K10007
Selenium	7782-49-2	2.0 U	2.0	10.0	10	ug/L	EPA 6010B	EPA 3005A	6K10007
Silver	7440-22-4	2.0 U	2.0	10.0	7.5	ug/L	EPA 6010B	EPA 3005A	6K15027
Thallium	7440-28-0	4.0 U	4.0	10.0	5.5	ug/L	EPA 6010B	EPA 3005A	6K10007
Vanadium	7440-62-2	**7.1** J	1.0	10.0	25	ug/L	EPA 6010B	EPA 3005A	6K10007
Zinc	7440-66-6	**43.7**	1.0	10.0	10	ug/L	EPA 6010B	EPA 3005A	6K10007

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ANALYTICAL REPORT

Sample ID: WW Pipe-01
Lab #: C604152-01

Project: North Wake Co. LF - DENR Leachate
Work Order #: C604152
Matrix: Surface Water

Classical Chemistry Parameters

Parameter	CAS Number	Analytical Results	MDL	MRL	NC SWS RL	Units	Analysis Method	Prep Method	Analytical Batch
Biochemical Oxygen Demand	NA	68 B-04	2	2		mg/L	EPA 405.1	NO PREP	6K10008

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ANALYTICAL REPORT

Sample ID: WW Pipe-01
Lab #: C604152-01

Project: North Wake Co. LF - DENR Leachate
Work Order #: C604152
Matrix: Surface Water

Classical Chemistry Parameters

Parameter	CAS Number	Analytical Results	MDL	MRL	NC SWS RL	Units	Analysis Method	Prep Method	Analytical Batch
Chemical Oxygen Demand	NA	**570**	6.8	10	NE	mg/L	EPA 410.4	NO PREP	6K30003
Nitrate as N	NA	**0.66** D	0.080	0.50	NE	mg/L	EPA 300.0	NA	6K10017
Phosphorus	7723-14-0	**0.50**	0.020	0.030		mg/L	EPA 365.4	Same	6K10012
Sulfate	14808-79-8	0.30 U, D	0.30	20	NE	mg/L	EPA 300.0	NA	6K10017

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ANALYTICAL REPORT

Sample ID:	Equip. Blank	Project:	North Wake Co. LF - DENR Leachate
Lab #:	C604152-02	Work Order #:	C604152
Prep. Method:	EPA 5030B_MS	Matrix:	Surface Water
Analyzed:	11/16/06 By: spf	Unit:	ug/L
Anal. Method:	EPA 8260B	Dilution Factor:	1
Anal. Batch:			
QC Batch:	6K15004		

Volatile Organic Compounds by GCMS

Parameter	CAS Number	Analytical Results	MDL	MRL	NC SWS RL	Units
1,1,1,2-Tetrachloroethane	630-20-6	0.20 U	0.20	1.0	3	ug/L
1,1,1-Trichloroethane	71-55-6	0.20 U	0.20	1.0	3	ug/L
1,1,2,2-Tetrachloroethane	79-34-5	0.30 U	0.30	1.0	3	ug/L
1,1,2-Trichloroethane	79-00-5	0.40 U	0.40	1.0	3	ug/L
1,1-Dichloroethane	75-34-3	0.40 U	0.40	1.0	3	ug/L
1,1-Dichloroethene	75-35-4	0.40 U	0.40	1.0	3	ug/L
1,2,3-Trichloropropane	96-18-4	0.50 U	0.50	1.0	8	ug/L
1,2-Dibromo-3-chloropropane	96-12-8	0.60 U	0.60	1.0	13	ug/L
1,2-Dibromoethane	106-93-4	0.40 U	0.40	1.0	3	ug/L
1,2-Dichlorobenzene	95-50-1	0.30 U	0.30	1.0	3	ug/L
1,2-Dichloroethane	107-06-2	0.40 U	0.40	1.0	3	ug/L
1,2-Dichloropropane	78-87-5	0.20 U	0.20	1.0	3	ug/L
1,4-Dichlorobenzene	106-46-7	0.30 U	0.30	1.0	3	ug/L
2-Butanone	78-93-3	0.80 U	0.80	5.0	51	ug/L
2-Hexanone	591-78-6	0.50 U	0.50	5.0	26	ug/L
4-Methyl-2-pentanone	108-10-1	0.80 U	0.80	5.0	51	ug/L
Acetone	67-64-1	**5.1**	1.2	5.0	51	ug/L
Acrylonitrile	107-13-1	1.7 U	1.7	5.0	102.5	ug/L
Benzene	71-43-2	0.20 U	0.20	1.0	3	ug/L
Bromochloromethane	74-97-5	0.50 U	0.50	1.0	3	ug/L
Bromodichloromethane	75-27-4	0.20 U	0.20	0.40		ug/L
Bromoform	75-25-2	0.30 U	0.30	1.0	3	ug/L
Bromomethane	74-83-9	0.60 U	0.60	1.0	5.5	ug/L
Carbon disulfide	75-15-0	0.30 U	0.30	5.0	51	ug/L
Carbon tetrachloride	56-23-5	0.20 U	0.20	1.0	5.5	ug/L
Chlorobenzene	108-90-7	0.30 U	0.30	1.0	3	ug/L
Chloroethane	75-00-3	0.40 U	0.40	1.0	5.5	ug/L
Chloroform	67-66-3	0.40 U	0.40	1.0	3	ug/L
Chloromethane	74-87-3	0.20 U	0.20	1.0	5.5	ug/L
cis-1,2-Dichloroethene	156-59-2	0.20 U	0.20	1.0	3	ug/L
cis-1,3-Dichloropropene	10061-01-5	0.20 U	0.20	0.20	5.5	ug/L
Dibromochloromethane	124-48-1	0.30 U	0.30	1.0	3	ug/L
Dibromochloromethane	124-48-1	0.30 U	0.30	1.0	3	ug/L
Dibromomethane	74-95-3	0.30 U	0.30	1.0	5.5	ug/L
Ethylbenzene	100-41-4	0.10 U	0.10	1.0	3	ug/L
Iodomethane	74-88-4	0.80 U	0.80	2.0	6	ug/L
m,p-Xylenes	108-38-3/106-42-3	0.30 U	0.30	2.0	NE	ug/L
Methylene chloride	75-09-2	0.40 U	0.40	2.0		ug/L
o-Xylene	95-47-6	0.20 U	0.20	1.0	NE	ug/L
Styrene	100-42-5	0.10 U	0.10	1.0	5.5	ug/L

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ANALYTICAL REPORT

Sample ID:	Equip. Blank	Project:	North Wake Co. LF - DENR Leachate
Lab #:	C604152-02	Work Order #:	C604152
Prep. Method:	EPA 5030B_MS	Matrix:	Surface Water
Analyzed:	11/16/06 By: spf	Unit:	ug/L
Anal. Method:	EPA 8260B	Dilution Factor:	1
Anal. Batch:			
QC Batch:	6K15004		

Volatile Organic Compounds by GCMS

Parameter	CAS Number	Analytical Results	MDL	MRL	NC SWS RL	Units
Tetrachloroethene	127-18-4	0.90 U	0.90	1.0	3	ug/L
Toluene	108-88-3	0.20 U	0.20	1.0	3	ug/L
trans-1,2-Dichloroethene	156-60-5	0.40 U	0.40	1.0	3	ug/L
trans-1,3-Dichloropropene	10061-02-6	0.20 U	0.20	0.20	5.5	ug/L
trans-1,4-Dichloro-2-butene	110-57-6	0.50 U	0.50	1.0	50.5	ug/L
Trichloroethene	79-01-6	0.40 U	0.40	1.0	3	ug/L
Trichlorofluoromethane	75-69-4	0.20 U	0.20	1.0	3	ug/L
Vinyl acetate	108-05-4	1.0 U	1.0	2.0	26	ug/L
Vinyl chloride	75-01-4	0.30 U	0.30	1.0	5.5	ug/L

Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
4-Bromofluorobenzene	460-00-4	54	50.0	108 %	70-130
Dibromofluoromethane	1868-53-7	51	50.0	101 %	73-138
Toluene-d8	2037-26-5	51	50.0	102 %	77-118

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ANALYTICAL REPORT

Sample ID: Equip. Blank
Lab #: C604152-02

Project: North Wake Co. LF - DENR Leachate
Work Order #: C604152
Matrix: Surface Water

Metals by EPA 6000/7000 Series Methods

Parameter	CAS Number	Analytical Results	MDL	MRL	NC SWS RL	Units	Analysis Method	Prep Method	Analytical Batch
Antimony	7440-36-0	**3.1** J	2.0	10.0	6.5	ug/L	EPA 6010B	EPA 3005A	6K10007
Arsenic	7440-38-2	2.0 U	2.0	10.0	7.5	ug/L	EPA 6010B	EPA 3005A	6K10007
Barium	7440-39-3	**0.60** J	0.20	10.0	60	ug/L	EPA 6010B	EPA 3005A	6K10007
Beryllium	7440-41-7	0.70 U	0.70	1.00	1	ug/L	EPA 6010B	EPA 3005A	6K10007
Cadmium	7440-43-9	0.50 U	0.50	1.00	1	ug/L	EPA 6010B	EPA 3005A	6K10007
Chromium	7440-47-3	2.0 U	2.0	10.0	7.5	ug/L	EPA 6010B	EPA 3005A	6K10007
Cobalt	7440-48-4	2.0 U	2.0	10.0	10	ug/L	EPA 6010B	EPA 3005A	6K10007
Copper	7440-50-8	0.60 U	0.60	10.0	7.5	ug/L	EPA 6010B	EPA 3005A	6K10007
Lead	7439-92-1	2.0 U	2.0	10.0	6.5	ug/L	EPA 6010B	EPA 3005A	6K10007
Nickel	7440-02-0	2.0 U	2.0	10.0	30	ug/L	EPA 6010B	EPA 3005A	6K10007
Selenium	7782-49-2	2.0 U	2.0	10.0	10	ug/L	EPA 6010B	EPA 3005A	6K10007
Silver	7440-22-4	2.0 U	2.0	10.0	7.5	ug/L	EPA 6010B	EPA 3005A	6K15027
Thallium	7440-28-0	4.0 U	4.0	10.0	5.5	ug/L	EPA 6010B	EPA 3005A	6K10007
Vanadium	7440-62-2	1.0 U	1.0	10.0	25	ug/L	EPA 6010B	EPA 3005A	6K10007
Zinc	7440-66-6	1.0 U	1.0	10.0	10	ug/L	EPA 6010B	EPA 3005A	6K10007

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ANALYTICAL REPORT

Sample ID: Equip. Blank
Lab #: C604152-02

Project: North Wake Co. LF - DENR Leachate
Work Order #: C604152
Matrix: Surface Water

Classical Chemistry Parameters

Parameter	CAS Number	Analytical Results	MDL	MRL	NC SWS RL	Units	Analysis Method	Prep Method	Analytical Batch
Biochemical Oxygen Demand	NA	2 B-04, U	2	2		mg/L	EPA 405.1	NO PREP	6K10008

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ANALYTICAL REPORT

Sample ID: Equip. Blank
Lab #: C604152-02

Project: North Wake Co. LF - DENR Leachate
Work Order #: C604152
Matrix: Surface Water

Classical Chemistry Parameters

Parameter	CAS Number	Analytical Results	MDL	MRL	NC SWS RL	Units	Analysis Method	Prep Method	Analytical Batch
Chemical Oxygen Demand	NA	26	6.8	10	NE	mg/L	EPA 410.4	NO PREP	6K30003
Nitrate as N	NA	0.008 U	0.008	0.050	NE	mg/L	EPA 300.0	NA	6K10017
Phosphorus	7723-14-0	0.020 U	0.020	0.030		mg/L	EPA 365.4	Same	6K10012
Sulfate	14808-79-8	0.03 U	0.03	2.0	NE	mg/L	EPA 300.0	NA	6K10017

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ANALYTICAL REPORT

Sample ID:	Trip Blank	Project:	North Wake Co. LF - DENR Leachate
Lab #:	C604152-03	Work Order #:	C604152
Prep. Method:	EPA 5030B_MS	Matrix:	Surface Water
Analyzed:	11/16/06 By: spf	Unit:	ug/L
Anal. Method:	EPA 8260B	Dilution Factor:	1
Anal. Batch:			
QC Batch:	6K15004		

Volatile Organic Compounds by GCMS

Parameter	CAS Number	Analytical Results	MDL	MRL	NC SWS RL	Units
1,1,1,2-Tetrachloroethane	630-20-6	0.20 U	0.20	1.0	3	ug/L
1,1,1-Trichloroethane	71-55-6	0.20 U	0.20	1.0	3	ug/L
1,1,2,2-Tetrachloroethane	79-34-5	0.30 U	0.30	1.0	3	ug/L
1,1,2-Trichloroethane	79-00-5	0.40 U	0.40	1.0	3	ug/L
1,1-Dichloroethane	75-34-3	0.40 U	0.40	1.0	3	ug/L
1,1-Dichloroethene	75-35-4	0.40 U	0.40	1.0	3	ug/L
1,2,3-Trichloropropane	96-18-4	0.50 U	0.50	1.0	8	ug/L
1,2-Dibromo-3-chloropropane	96-12-8	0.60 U	0.60	1.0	13	ug/L
1,2-Dibromoethane	106-93-4	0.40 U	0.40	1.0	3	ug/L
1,2-Dichlorobenzene	95-50-1	0.30 U	0.30	1.0	3	ug/L
1,2-Dichloroethane	107-06-2	0.40 U	0.40	1.0	3	ug/L
1,2-Dichloropropane	78-87-5	0.20 U	0.20	1.0	3	ug/L
1,4-Dichlorobenzene	106-46-7	0.30 U	0.30	1.0	3	ug/L
2-Butanone	78-93-3	0.80 U	0.80	5.0	51	ug/L
2-Hexanone	591-78-6	0.50 U	0.50	5.0	26	ug/L
4-Methyl-2-pentanone	108-10-1	0.80 U	0.80	5.0	51	ug/L
Acetone	67-64-1	1.2 U	1.2	5.0	51	ug/L
Acrylonitrile	107-13-1	1.7 U	1.7	5.0	102.5	ug/L
Benzene	71-43-2	0.20 U	0.20	1.0	3	ug/L
Bromochloromethane	74-97-5	0.50 U	0.50	1.0	3	ug/L
Bromodichloromethane	75-27-4	0.20 U	0.20	0.40		ug/L
Bromoform	75-25-2	0.30 U	0.30	1.0	3	ug/L
Bromomethane	74-83-9	0.60 U	0.60	1.0	5.5	ug/L
Carbon disulfide	75-15-0	0.30 U	0.30	5.0	51	ug/L
Carbon tetrachloride	56-23-5	0.20 U	0.20	1.0	5.5	ug/L
Chlorobenzene	108-90-7	0.30 U	0.30	1.0	3	ug/L
Chloroethane	75-00-3	0.40 U	0.40	1.0	5.5	ug/L
Chloroform	67-66-3	0.40 U	0.40	1.0	3	ug/L
Chloromethane	74-87-3	0.20 U	0.20	1.0	5.5	ug/L
cis-1,2-Dichloroethene	156-59-2	0.20 U	0.20	1.0	3	ug/L
cis-1,3-Dichloropropene	10061-01-5	0.20 U	0.20	0.20	5.5	ug/L
Dibromochloromethane	124-48-1	0.30 U	0.30	1.0	3	ug/L
Dibromochloromethane	124-48-1	0.30 U	0.30	1.0	3	ug/L
Dibromomethane	74-95-3	0.30 U	0.30	1.0	5.5	ug/L
Ethylbenzene	100-41-4	0.10 U	0.10	1.0	3	ug/L
Iodomethane	74-88-4	0.80 U	0.80	2.0	6	ug/L
m,p-Xylenes	108-38-3/106-42-3	0.30 U	0.30	2.0	NE	ug/L
Methylene chloride	75-09-2	0.40 U	0.40	2.0		ug/L
o-Xylene	95-47-6	0.20 U	0.20	1.0	NE	ug/L
Styrene	100-42-5	0.10 U	0.10	1.0	5.5	ug/L

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ANALYTICAL REPORT

Sample ID:	Trip Blank	Project:	North Wake Co. LF - DENR Leachate
Lab #:	C604152-03	Work Order #:	C604152
Prep. Method:	EPA 5030B_MS	Matrix:	Surface Water
Analyzed:	11/16/06 By: spf	Unit:	ug/L
Anal. Method:	EPA 8260B	Dilution Factor:	1
Anal. Batch:			
QC Batch:	6K15004		

Volatile Organic Compounds by GCMS

Parameter	CAS Number	Analytical Results	MDL	MRL	NC SWS RL	Units
Tetrachloroethene	127-18-4	0.90 U	0.90	1.0	3	ug/L
Toluene	108-88-3	0.20 U	0.20	1.0	3	ug/L
trans-1,2-Dichloroethene	156-60-5	0.40 U	0.40	1.0	3	ug/L
trans-1,3-Dichloropropene	10061-02-6	0.20 U	0.20	0.20	5.5	ug/L
trans-1,4-Dichloro-2-butene	110-57-6	0.50 U	0.50	1.0	50.5	ug/L
Trichloroethene	79-01-6	0.40 U	0.40	1.0	3	ug/L
Trichlorofluoromethane	75-69-4	0.20 U	0.20	1.0	3	ug/L
Vinyl acetate	108-05-4	1.0 U	1.0	2.0	26	ug/L
Vinyl chloride	75-01-4	0.30 U	0.30	1.0	5.5	ug/L

Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
4-Bromofluorobenzene	460-00-4	52	50.0	103 %	70-130
Dibromofluoromethane	1868-53-7	49	50.0	97 %	73-128
Toluene-d8	2037-26-5	52	50.0	103 %	77-128

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QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sample Notes
Volatile Organic Compounds by GCMS - Quality Control										
Batch 6K15004 - EPA 5030B_MS										
Blank (6K15004-BLK1)				Prepared: 11/15/2006 07:24 Analyzed: 11/15/2006 20:01						
Acetone	1.2 U	5.0	ug/L							
Acrylonitrile	1.7 U	5.0	ug/L							
Benzene	0.20 U	1.0	ug/L							
2-Butanone	0.80 U	5.0	ug/L							
2-Hexanone	0.50 U	5.0	ug/L							
Iodomethane	0.80 U	2.0	ug/L							
Tetrachloroethene	0.90 U	1.0	ug/L							
4-Methyl-2-pentanone	0.80 U	5.0	ug/L							
Bromochloromethane	0.50 U	1.0	ug/L							
Trichloroethene	0.40 U	1.0	ug/L							
Bromodichloromethane	0.20 U	0.40	ug/L							
Bromoform	0.30 U	1.0	ug/L							
Bromomethane	0.60 U	1.0	ug/L							
Carbon disulfide	0.30 U	5.0	ug/L							
Carbon tetrachloride	0.20 U	1.0	ug/L							
Chlorobenzene	0.30 U	1.0	ug/L							
Chloroethane	0.40 U	1.0	ug/L							
Chloroform	0.40 U	1.0	ug/L							
Chloromethane	0.20 U	1.0	ug/L							
Dibromochloromethane	0.30 U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.60 U	1.0	ug/L							
1,2-Dibromoethane	0.40 U	1.0	ug/L							
Dibromomethane	0.30 U	1.0	ug/L							
1,2-Dichlorobenzene	0.30 U	1.0	ug/L							
1,4-Dichlorobenzene	0.30 U	1.0	ug/L							
trans-1,4-Dichloro-2-butene	0.50 U	1.0	ug/L							
1,1-Dichloroethane	0.40 U	1.0	ug/L							
1,2-Dichloroethane	0.40 U	1.0	ug/L							
1,1-Dichloroethene	0.40 U	1.0	ug/L							
cis-1,2-Dichloroethene	0.20 U	1.0	ug/L							
trans-1,2-Dichloroethene	0.40 U	1.0	ug/L							
1,2-Dichloropropane	0.20 U	1.0	ug/L							
cis-1,3-Dichloropropene	0.20 U	0.20	ug/L							
trans-1,3-Dichloropropene	0.20 U	0.20	ug/L							
Ethylbenzene	0.10 U	1.0	ug/L							
Methylene chloride	0.40 U	2.0	ug/L							
Styrene	0.10 U	1.0	ug/L							
1,1,1,2-Tetrachloroethane	0.20 U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.30 U	1.0	ug/L							
Toluene	0.20 U	1.0	ug/L							
1,1,1-Trichloroethane	0.20 U	1.0	ug/L							
1,1,2-Trichloroethane	0.40 U	1.0	ug/L							
Trichlorofluoromethane	0.20 U	1.0	ug/L							
1,2,3-Trichloropropane	0.50 U	1.0	ug/L							
Vinyl acetate	1.0 U	2.0	ug/L							

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QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Volatile Organic Compounds by GCMS - Quality Control										
Batch 6K15004 - EPA 5030B_MS										
Blank (6K15004-BLK1) Continued				Prepared: 11/15/2006 07:24 Analyzed: 11/15/2006 20:01						
Vinyl chloride	0.30 U	1.0	ug/L							
m,p-Xylenes	0.30 U	2.0	ug/L							
o-Xylene	0.20 U	1.0	ug/L							
LCS (6K15004-BS1)				Prepared: 11/15/2006 07:24 Analyzed: 11/15/2006 21:45						
Benzene	20	1.0	ug/L	20.0		99	69-115			
Trichloroethene	20	1.0	ug/L	20.0		102	74-118			
Chlorobenzene	18	1.0	ug/L	20.0		92	76-118			
1,1-Dichloroethene	20	1.0	ug/L	20.0		100	64-139			
Toluene	18	1.0	ug/L	20.0		88	77-117			
Matrix Spike (6K15004-MS1)		**Source: C604316-07**		Prepared: 11/15/2006 07:24 Analyzed: 11/15/2006 22:11						
Benzene	20	1.0	ug/L	20.0	0.20 U	100	53-150			
Trichloroethene	21	1.0	ug/L	20.0	0.40 U	104	64-124			
Chlorobenzene	20	1.0	ug/L	20.0	1.2	93	44-128			
1,1-Dichloroethene	20	1.0	ug/L	20.0	0.40 U	101	36-177			
Toluene	18	1.0	ug/L	20.0	0.20 U	90	40-161			
Matrix Spike Dup (6K15004-MSD1)		**Source: C604316-07**		Prepared: 11/15/2006 07:24 Analyzed: 11/15/2006 22:36						
Benzene	21	1.0	ug/L	20.0	0.20 U	103	53-150	3	23	
Trichloroethene	21	1.0	ug/L	20.0	0.40 U	103	64-124	0.8	25	
Chlorobenzene	20	1.0	ug/L	20.0	1.2	94	44-128	0.9	22	
1,1-Dichloroethene	20	1.0	ug/L	20.0	0.40 U	102	36-177	0.8	30	
Toluene	19	1.0	ug/L	20.0	0.20 U	94	40-161	4	23	
Metals by EPA 6000/7000 Series Methods - Quality Control										
Batch 6K10007 - EPA 3005A										
Blank (6K10007-BLK1)				Prepared: 11/10/2006 09:54 Analyzed: 11/15/2006 09:46						
Antimony	3.40 J	10.0	ug/L							
Arsenic	2.0 U	10.0	ug/L							
Barium	0.20 U	10.0	ug/L							
Beryllium	0.70 U	1.00	ug/L							
Cadmium	0.50 U	1.00	ug/L							
Chromium	2.0 U	10.0	ug/L							
Cobalt	2.0 U	10.0	ug/L							
Copper	0.60 U	10.0	ug/L							
Lead	2.0 U	10.0	ug/L							
Nickel	2.0 U	10.0	ug/L							
Selenium	2.0 U	10.0	ug/L							
Thallium	4.0 U	10.0	ug/L							
Vanadium	1.0 U	10.0	ug/L							
Zinc	1.0 U	10.0	ug/L							
LCS (6K10007-BS1)				Prepared: 11/10/2006 09:54 Analyzed: 11/15/2006 09:53						
Antimony	533	10.0	ug/L	500		107	82-119			
Arsenic	1080	10.0	ug/L	1000		108	82-117			
Barium	1060	10.0	ug/L	1000		106	72-125			
Beryllium	551	1.00	ug/L	500		110	75-121			

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sample Notes
Metals by EPA 6000/7000 Series Methods - Quality Control										
Batch 6K10007 - EPA 3005A										
LCS (6K10007-BS1) Continued				Prepared: 11/10/2006 09:54 Analyzed: 11/15/2006 09:53						
Cadmium	542	1.00	ug/L	500		108	72-120			
Chromium	1070	10.0	ug/L	1000		107	78-119			
Cobalt	1060	10.0	ug/L	1000		106	76-117			
Copper	530	10.0	ug/L	500		106	80-117			
Lead	1080	10.0	ug/L	1000		108	72-121			
Nickel	1070	10.0	ug/L	1000		107	78-116			
Selenium	1080	10.0	ug/L	1000		108	82-127			
Thallium	537	10.0	ug/L	500		107	79-118			
Vanadium	523	10.0	ug/L	500		105	78-117			
Zinc	1080	10.0	ug/L	1000		108	80-120			
Matrix Spike (6K10007-MS1)		**Source: C603400-01**		Prepared: 11/10/2006 09:54 Analyzed: 11/15/2006 10:11						
Antimony	523	10.0	ug/L	500	2.0 U	105	38-138			
Arsenic	1090	10.0	ug/L	1000	2.0 U	109	64-126			
Barium	1140	10.0	ug/L	1000	58.8	109	74-119			
Beryllium	560	1.00	ug/L	500	0.70 U	112	70-131			
Cadmium	549	1.00	ug/L	500	0.50 U	110	68-121			
Chromium	1090	10.0	ug/L	1000	5.30	109	73-120			
Cobalt	1080	10.0	ug/L	1000	2.00	108	76-120			
Copper	542	10.0	ug/L	500	0.60 U	108	75-123			
Lead	1100	10.0	ug/L	1000	2.30	110	68-126			
Nickel	1090	10.0	ug/L	1000	2.0 U	109	64-126			
Selenium	1100	10.0	ug/L	1000	2.0 U	110	65-129			
Thallium	544	10.0	ug/L	500	4.0 U	109	67-135			
Vanadium	548	10.0	ug/L	500	11.7	107	71-130			
Zinc	1100	10.0	ug/L	1000	6.10	109	63-131			
Matrix Spike Dup (6K10007-MSD1)		**Source: C603400-01**		Prepared: 11/10/2006 09:54 Analyzed: 11/15/2006 10:18						
Antimony	509	10.0	ug/L	500	2.0 U	102	38-138	3	30	
Arsenic	1070	10.0	ug/L	1000	2.0 U	107	64-126	2	12	
Barium	1120	10.0	ug/L	1000	58.8	106	74-119	2	11	
Beryllium	550	1.00	ug/L	500	0.70 U	110	70-131	2	21	
Cadmium	539	1.00	ug/L	500	0.50 U	108	68-121	2	12	
Chromium	1070	10.0	ug/L	1000	5.30	107	73-120	2	10	
Cobalt	1060	10.0	ug/L	1000	2.00	106	76-120	2	17	
Copper	529	10.0	ug/L	500	0.60 U	106	75-123	2	16	
Lead	1080	10.0	ug/L	1000	2.30	108	68-126	2	19	
Nickel	1070	10.0	ug/L	1000	2.0 U	107	64-126	2	12	
Selenium	1070	10.0	ug/L	1000	2.0 U	107	65-129	2	10	
Thallium	536	10.0	ug/L	500	4.0 U	107	67-135	2	13	
Vanadium	536	10.0	ug/L	500	11.7	105	71-130	2	16	
Zinc	1080	10.0	ug/L	1000	6.10	107	63-131	2	24	
Batch 6K15027 - EPA 3005A										
Blank (6K15027-BLK1)				Prepared: 11/15/2006 13:35 Analyzed: 11/15/2006 15:19						
Silver	2.0 U	10.0	ug/L							
LCS (6K15027-BS1)				Prepared: 11/15/2006 13:35 Analyzed: 11/15/2006 15:25						

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QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sample Notes
Metals by EPA 6000/7000 Series Methods - Quality Control										
Batch 6K15027 - EPA 3005A										
LCS (6K15027-BS1) Continued				Prepared: 11/15/2006 13:35 Analyzed: 11/15/2006 15:25						
Silver	98.2	10.0	ug/L	100		98	80-128			
Matrix Spike (6K15027-MS1)		Source: C604153-02		Prepared: 11/15/2006 13:35 Analyzed: 11/15/2006 15:36						
Silver	98.3	10.0	ug/L	100	2.0 U	98	69-121			
Matrix Spike Dup (6K15027-MSD1)		Source: C604153-02		Prepared: 11/15/2006 13:35 Analyzed: 11/15/2006 15:42						
Silver	99.2	10.0	ug/L	100	2.0 U	99	69-121	0.9	12	
Classical Chemistry Parameters - Quality Control										
Batch 6K10008 - NO PREP										
Blank (6K10008-BLK1)				Prepared: 11/10/2006 15:00 Analyzed: 11/15/2006 11:05						
Biochemical Oxygen Demand	2 B-04, U	2	mg/L							B-04
LCS (6K10008-BS1)				Prepared: 11/10/2006 15:00 Analyzed: 11/15/2006 11:05						
Biochemical Oxygen Demand	225 B-04	2	mg/L	198		114	82-118			B-04
Duplicate (6K10008-DUP1)		Source: C604279-02		Prepared: 11/10/2006 15:00 Analyzed: 11/15/2006 11:05						
Biochemical Oxygen Demand	2 B-04, U	2	mg/L		2 U				25	B-04

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sample Notes
Classical Chemistry Parameters - Quality Control										
Batch 6K10012 - Same										
Blank (6K10012-BLK1)				Prepared: 11/10/2006 12:48 Analyzed: 11/11/2006 21:46						
Phosphorus	0.020 U	0.030	mg/L							
LCS (6K10012-BS1)				Prepared: 11/10/2006 12:48 Analyzed: 11/11/2006 21:47						
Phosphorus	2.5	0.030	mg/L	2.50		100	87-114			
Matrix Spike (6K10012-MS1)		Source: A605613-01		Prepared: 11/10/2006 12:48 Analyzed: 11/11/2006 21:53						
Phosphorus	2.6	0.030	mg/L	2.50	0.11	98	74-121			
Matrix Spike Dup (6K10012-MSD1)		Source: A605613-01		Prepared: 11/10/2006 12:48 Analyzed: 11/11/2006 21:54						
Phosphorus	2.6	0.030	mg/L	2.50	0.11	98	74-121	0.9	11	
Batch 6K10017 - NA										
Blank (6K10017-BLK1)				Prepared: 11/10/2006 10:00 Analyzed: 11/10/2006 12:49						
Sulfate	0.03 U	2.0	mg/L							
Nitrate as N	0.008 U	0.050	mg/L							
LCS (6K10017-BS1)				Prepared: 11/10/2006 10:00 Analyzed: 11/10/2006 13:10						
Sulfate	260	2.0	mg/L	250		105	90-110			
Nitrate as N	5.3	0.050	mg/L	5.00		105	90-110			
Matrix Spike (6K10017-MS1)		Source: A604281-01		Prepared: 11/10/2006 10:00 Analyzed: 11/10/2006 13:30						
Sulfate	290	2.0	mg/L	255	30	101	90-110			
Nitrate as N	5.4	0.050	mg/L	5.10	0.51	97	90-110			
Matrix Spike Dup (6K10017-MSD1)		Source: A604281-01		Prepared: 11/10/2006 10:00 Analyzed: 11/10/2006 13:49						
Sulfate	310 QM-07	2.0	mg/L	255	30	111	90-110	9	25	QM-07
Nitrate as N	6.0	0.050	mg/L	5.10	0.51	108	90-110	11	23	

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QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sample Notes
Classical Chemistry Parameters - Quality Control										
Batch 6K30003 - NO PREP										
Blank (6K30003-BLK1)				Prepared: 11/30/2006 09:25 Analyzed: 11/30/2006 14:00						
Chemical Oxygen Demand	6.8 U	10	mg/L							
LCS (6K30003-BS1)				Prepared: 11/30/2006 09:25 Analyzed: 11/30/2006 14:00						
Chemical Oxygen Demand	500	10	mg/L	500		100	90-110			
Matrix Spike (6K30003-MS1)		**Source: C604152-02**		Prepared: 11/30/2006 09:25 Analyzed: 11/30/2006 14:00						
Chemical Oxygen Demand	520	10	mg/L	500	26	99	90-110			
Matrix Spike Dup (6K30003-MSD1)		**Source: C604152-02**		Prepared: 11/30/2006 09:25 Analyzed: 11/30/2006 14:00						
Chemical Oxygen Demand	510	10	mg/L	500	26	98	90-110	1	20	

NOTES AND DEFINITIONS

B-04	The average DO update of the seeded controls does not meet the method required 0.6 - 1.0 mg/L.
D	Data reported from a dilution
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
U	Analyte included in the analysis, but not detected

LABORATORY CERTIFICATION SUMMARY

Analysis	Matrix	Cert ID	Cert Number
8260B Appendix 1	Water	NC	591
Antimony Total EPA 6010B	Water	NC	591
Arsenic Total EPA 6010B	Water	NC	591
Barium Total EPA 6010B	Water	NC	591
Beryllium Total EPA 6010B	Water	NC	591
BOD 405.1	Water	NC	591
Cadmium Total EPA 6010B	Water	NC	591
Chromium Total EPA 6010B	Water	NC	591
Cobalt Total EPA 6010B	Water	NC	591
Copper Total EPA 6010B	Water	NC	591
Lead Total EPA 6010B	Water	NC	591
Nickel Total EPA 6010B	Water	NC	591
Selenium Total EPA 6010B	Water	NC	591
Silver Total EPA 6010B	Water	NC	591
Thallium Total EPA 6010B	Water	NC	591
Vanadium Total EPA 6010B	Water	NC	591
Zinc Total EPA 6010B	Water	NC	591
COD 410.4	Water	NC	424
Nitrate as N 300	Water	NC	424
Phosphorus 365.4	Water	NC	424
Sulfate 300	Water	NC	424

WORK ORDER

Printed: 12/12/2006 12:48:20PM

C604152

ENCO Cary

Sample Receipt Conditions

Client: Joyce Engineering (JO004)
Project: North Wake Co. LF - DENR Leachate
PO #:

Lab Project Mgr: Chuck Smith
Project Number: 661.14

Report To:
Joyce Engineering (JO004)
Van Burbach
Boone Bldg. Suite 101, 2211 W. Meadowview Road
Greensboro, NC 27407
Phone: (336) 323-0092
Fax: (336) 323-0093

Invoice To:
Joyce Engineering (JO004)
Accounts Payable
1604 Ownby Lane
Richmond, VA 23220
Phone :(336) 323-0092
Fax: (336) 323-0093

Received By:	John W. Lowther	Date Received:	09-Nov-06 13:20
Logged In By:	John W. Lowther	Date Logged In:	09-Nov-06 14:30

Work Order Comments:

Default Cooler received at 3.5°C

Containers Intact	Y	Containers Properly Preserved	Y	Proper Containers Received	Y	All Samples in PreLog Received	Y	COC/Labels Agree	Y
Custody Seals Intact	Y	Volatile Containers Preserved	Y	Volatile Containers Headspace Free	Y	Aqueous Samples Checked for Residual Cl	N	Received On Ice	Y

Reviewed By

Date

ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

10775 Central Port Dr.
Orlando, FL 32824
(407) 826-5314 Fax (407) 850-6945

4810 Executive Park Court, Suite 211
Jacksonville, FL 32216-6069
(904) 296-3007 Fax (904) 296-6210

1015 Passport Way
Cary, NC 27513
(919) 677-1669 Fax (919) 677-9846

For Raleigh Not DENR

Client Name: Joyce Engineering (JO004)	Project Number: 661.14
Address: 2301 West Meadowview Road S-203	Project Name/Desc: North Wake Co. LF - DENR Leachate
City/ST/Zip: Greensboro, NC 27407	PO # / Billing Info:
Tel: (336) 323-0092 / Fax: (336) 323-0093	Reporting Contact: Van Burbach
Sampler(s) Name, Affiliation (Print): Sarah McCarthy (JEF)	Billing Contact: Accounts Payable
Sampler(s) Signature: [signature]	Facility # (if required):

Requested Turnaround Times

Note : Rush requests subject to acceptance by the facility

X Standard

___ Expedited

Due ___/___/___

Lab Workorder: C604152

Requested Analyses / Preservation (See Codes) (Combine as necessary)

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	8260B Appendix 1	Ag,As,Ba,Be,Cd,Co,Cr,Cu,Ni,Pb,Sb,Se,Tl,V,Zn	BOD 405.1	COD 410.4	Nitrate as N 300,Sulfate 300	P	Low-level Mercury				Sample Comments
	WW Pipe-01	11-9-06	1045	G	Water	7	X	X	X	X	X	X	X				
	Equip. Blank	11-9-06	1120	G	Water	7	X	X	X	X	X	X	X				
	Trip Blank				Water	3	X										

<-- Total # of Containers

Sample Kit Prepared By	Date/Time	Relinquished By: [signature]	Date/Time: 11-9-06 1325	Received By: [signature]	Date/Time: 11/9/06 13:20
Comments		Relinquished By	Date/Time	Received By	Date/Time
		Relinquished By	Date/Time	Received By	Date/Time
		Cooler #'s & Temps on Receipt: 3.7		Condition Upon Receipt: ___ Acceptable ___ Unacceptable	

Matrix : GW-Groundwater SO-Soil SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments)

Preservation: I-Ice H-HCl N-HNO3 S-H2SO4 NO-NaOH O-Other (detail in comments)

Note : All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreements exist

ENGINEERING, INC.

JOYCE ENGINEERING, INC.
QUALITY ASSURANCE
LABORATORY DATA REVIEW

Project Name: *North Wake County Sanitary Landfill – DENR Leachate List*

Project Number: *661.00.23*

Sampling Event Date: *November 9, 2006*

Laboratory: *ENCO* *Lab Report #:* *C604152*

Review Date: *1/19/07* *Initials:* *EF*

Review Date: *1/31/07* *Initials:* *VB*

Person(s) performing the review are to initial each item on this form as acknowledgement of data acceptance, or as acknowledgement of a review issue. In the case of the latter, a brief explanation should follow the applicable item.

COMPLIANCE ANALYTE LIST(S)
(check all that apply)

NC

_____ Closed Facility/C & D List

_____ Appendix I

_____ Appendix I + Detects

_____ Appendix II

__X__ Subtitle D Leachate List

Other: _____

1.0 CHAIN OF CUSTODY (COC) REVIEW

EF VB COC was properly signed by all parties.

EF VB Correct project name and number are on the form.
Project number is incorrect on the invoice and chain of custody it should read 661.00.23

EF VB Sample receipt condition at laboratory (temperature, bottleware condition, etc.) was acceptable.

EF VB Each sample and blank submitted for analysis appears in the data report.

2.0 SAMPLE HOLDING TIMES

EF VB Holding times for extraction and/or analysis were met for each analytical method.

3.0 LABORATORY QUALITY CONTROL REVIEW

EF VB Laboratory analyzed at least one internal blank for each method, where applicable.

EF VB Surrogate recoveries are provided for each analytical method, where applicable.

EF VB Surrogate recoveries for each method are within the acceptable limits (i.e., at least 50% of the surrogates were within range).

EF VB MS/MSD/LCS data results are provided for each analytical method.

EF VB MS/MSD/LCS recoveries for each method are within the acceptable limits (i.e., at least 1 of the 3 were within range).

Sulfate MSD REC%@ 111, REC% limit @ (90-110), the spike recovery was outside acceptance limit for the MSD. The batch was accepted based on a acceptable LCS recovery.

4.0 ANALYTE LISTS/METHODS

EF VB The proper number of constituents are present for each analyte list as identified above (including detects where applicable).

EF VB Proper EPA SW-846 analytical methods were used for analysis.

5.0 DATA REPORTING

EF VB All analytical reporting associated with the event was performed by the contracted lab.

EF VB Trip, field and/or equipment, and laboratory blank results have all been reported. All detects for blanks are listed below by constituent. All laboratory method blanks, if any, have been 'flagged' with a 'B' where detected in other samples as appropriate and a laboratory narrative was provided. If the sample was flagged by the laboratory and is not within 5X of the concentration in the blank (or 10X for commonly detected laboratory contaminants-acetone, methylene chloride and phthalates), list below with explanation if flags should be removed. If flags need to be added, also list below.

EQUIPMENT BLANK

Acetone @ 5.1ug/L
Antimony @ 3.1 ug/L J Need a B flag in WW Pipe-01
Barium @ 0.60 ug/L

METHOD BLANK

Antimony @ 3.40 ug/L J Need a B flag in WW Pipe-01

EF VB It is clear from the laboratory report that samples have or have not been diluted during analysis, and if the samples have been diluted, the result is reported as a multiple of the dilution (e.g., a sample diluted 10x resulting in an analytical detection of 1.0 should be reported as 10). Those that have been diluted are listed below with the dilution factor.

- ***WW Pipe-01 dilution factor was 1:10 for Method 8260 VOC's.***

EF VB The report provides the reporting limit for each constituent.

EF VB The results were reported at or below their proper reporting limits (e.g NC Solid Waste Section approved PQL's). Those that are not reported correctly are listed below (by constituent) with the proper reporting limit listed beside them. State if the reporting limit error is due to dilutions.

EF VB The following inorganic and organic constituents were reported above their respective reporting limits in groundwater samples or field/equipment/trip blanks (list by constituent and note if exclusively an Appendix II constituent). State if the concentrations are blank-qualified and/or if the detect is new and/or suspect (i.e. a common laboratory or field contaminant). This may warrant a call to the appropriate laboratory to verify the detection.

LEACHATE Sample Point: WW Pipe-01

Organics:

- ***2-Butanone @ 880 µg/L***
- ***Acetone @ 1700 µg/L***

Inorganics:

- ***Nickel @ 79.9 µg/L***

General Chemistry:

- ***BOD @ 68 mg/L***

- ***COD @ 570 mg/L***
- ***Phosphorus @ 0.50 mg/L***

EF VB The following inorganic and organic constituents were reported above their respective EPA MCL's in wells, surface points or field/equipment/trip blanks (list by constituent):

LEACHATE Sample Point: WW Pipe-01

- ***4-Methyl-2-pentanone @ 9.6 µg/L; (MCL @ 5 µg/L)***

EF VB The following inorganic and organic constituents were reported above their respective NC 2L Drinking Water Standards in wells, surface points, or field/equipment/trip blanks:

LEACHATE Sample Point: WW Pipe-01

- ***Acetone @ 1700 µg/L; (2L @ 700 µg/L)***
- ***Antimony @ 3.5 µg/L; (2L @ 1.4 µg/L) (But Blank-Qualified)***

N/A N/A The following inorganic and organic constituents were detected in a well or surface water point at concentrations outside of their historical range (more than 5X previous concentrations and including sulfide and cyanide). List by constituent. If in Detection Monitoring, are there any apparent SSI's? (if yes, do "unofficial stats" asap). **These items warrant a call to the appropriate laboratory to verify the detection(s).**

N/A N/A The following inorganic or organic constituents were detected for the **first** time in a well or surface water point. Also indicate whether or not the same constituent has been detected in other sites wells in recent events (last 1-2 years) and if it is Appendix I – 5.5 or Appendix II – 5.1. List by constituent. **This warrants a call to the appropriate laboratory to verify the detection(s).**

EF VB Other report issues:
Report does not need low level Mercury Analysis.

EF VB List all details for initial and follow up notifications to laboratories below. State the issue(s), the person contacted, the date of contact, the method of contact (email, phone, etc.) and your initials. Then list details of the follow-up contact/response/action(s)