REPORT OF

SEMI-ANNUAL GROUNDWATER COMPLIANCE MONITORING (SEPTEMBER 2008) SOLID WASTE LANDFILL INTERNATIONAL PAPER RIEGELWOOD, NORTH CAROLINA

Prepared for

INTERNATIONAL PAPER
RIEGELWOOD, NORTH CAROLINA

Prepared by

MACTEC ENGINEERING AND CONSULTING, INC.
WILMINGTON, NORTH CAROLINA

MACTEC Project No. 6550-08-0479
October 15, 2008

MACTEC

engineering and constructing a better tomorrow

October 15, 2008

Mr. Edward Kreul
Environmental Performance Manager
International Paper
Riegelwood Mill
865 John L. Riegel Road
Riegelwood, North Carolina 28456

Subject: **Semi-Annual Groundwater Compliance Monitoring Results (September 2008) Permit No. 24-02 International Paper, Riegelwood, North Carolina MACTEC Project No. 6550-08-0479**

Dear Mr. Kreul:

MACTEC Engineering and Consulting, Inc. (MACTEC), is pleased to provide the attached results of the 2008 semi-annual groundwater compliance-monitoring event in the vicinity of International Paper's solid waste landfill. These activities were conducted in general accordance with those outlined in MACTEC's Proposal No. PROP08WILM23, dated February 29, 2008. International Paper authorized this work with Purchase Order No. S066115470, dated March 19, 2008. The sampling activities were conducted to comply with the North Carolina Department of Environment and Natural Resources (NCDENR) Division of Waste Management – Solid Waste Section requirements for groundwater monitoring.

The sampling event was conducted on September 10 & 11, 2008. This work consisted of collecting samples for analysis from six monitoring wells: MW-1A, MW-1B, MW-4A, MW-5A, MW-7A, and MW-8A; and three water samples, designated as: Primary, Secondary and Under-Drain, obtained from the New Landfill Cell 1. These samples were submitted to Environmental Science Corporation, Inc. (a North Carolina certified laboratory) for analysis of select compounds.

The attachments to this document include the following:

- NCDENR Environmental Monitoring Reporting Form
- Table 1 - Groundwater analytical results;
- Table 2 – Historical groundwater sample results;
- Table 3 – Landfill Cell 1 sample results;
- Figure – 1 Vicinity location map;
- Figure 2 – Plan-view map showing well locations;

MACTEC Engineering and Consulting, Inc.
5710 Oleander Drive, Suite 110
Wilmington, North Carolina 28403
(910) 452-1185 p • (910) 791-1338 f

- Copies of the original laboratory reports and chain-of-custody documentation (Appendix A); and
- Documentation of field activities including measurements of water levels, pH, specific conductance, and temperature are contained in the field sampling reports (Appendix B).

It continues to be our pleasure to serve as International Paper's environmental consultant for this project. Should you have questions concerning the enclosed information, please contact us.

Sincerely,

MACTEC ENGINNERING AND CONSULTING, INC.

B. Walker Jones, REM
Principal Scientist

J. Chris Pruneau, L.G.
Principal Hydrogeologist

Attachments

NCDENR ENVIRONMENTAL
MONITORING REPORTING FORM

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

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).
- In accordance with NC General Statutes Chapter 89C and 89E and NC Solid Waste Management Rules 15A NCAC 13B, be sure to affix a seal to the bottom of this page, when applicable.
- 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):

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

Name: B. Walker Jones Phone: (910) 452-1185

E-mail: bwjones@mactec.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
International Paper	Riegelwood Mill 865 john L. Riegel Road Riegelwood, NC 28456	24-02	0.0500	September 11, 2008

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 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.

Daniel E Atkinson Senior Geologist 910 452-1185

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

Signature 10/22/08 Date

Affix NC Licensed/ Professional Geologist/Engineer Seal here:

NORTH CAROLINA LICENSED SEAL 2043 GEOLOGIST DANIEL E. ATKINSON

Revised 01/2007

INTERNATIONAL PAPER - RIEGELWOOD MILL, NC
LANDFILL COMPLIANCE MONITORING GROUNDWATER RESULTS - SEPTEMBER 2008

FACILITY PERMIT	WELL ID	CAS Number	SWS ID	PARAMETER	RESULT	UNITS	Q	METHOD	MDL	SWSL	DILUTION FACTOR	COLLECT DATE	EXTRACTION DATE	ANALYSIS DATE
24-02	MW-1A	16887-00-6	301	Chloride	14000	ug/l		9056	1000	NE	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-1A	16984-48-8	312	Fluoride	100	ug/l	U	9056	100	2	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-1A	14797-55-8	303	Nitrate	100	ug/l	U	9056	100	10	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-1A	14808-79-8	315	Sulfate	42000	ug/l		9056	5000	250	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-1A	00010-29-7	321	pH	4.6	su	T8	9040C		NE	1	11-Sep-08		14-Sep-08
24-02	MW-1A		324	Specific Conductance	160	umhos/cm		9050A		NE	1	11-Sep-08		15-Sep-08
24-02	MW-1A	7440-38-2	14	Arsenic	0.28	ug/l	J	6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-1A	7440-43-9	34	Cadmium	0.5	ug/l	U	6020	0.5	0.001	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-1A	7440-50-8	54	Copper	1	ug/l	U	6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-1A	7782-49-2	183	Selenium	0.81	ug/l	J	6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-1A	7440-66-6	213	Zinc	25	ug/l		6020	10	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-1A		311	Dissolved Solids	74000	ug/l	J3	2540C	10000	NE	1	11-Sep-08	15-Sep-08	17-Sep-08
24-02	MW-1A		316	BOD	5000	ug/l	U	SM5210B	5000	NE	1	11-Sep-08		12-Sep-08
24-02	MW-1A	7439-97-6	132	Mercury	0.2	ug/l	U	7470A	0.2	0.0002	1	11-Sep-08	13-Sep-08	17-Sep-08
24-02	MW-1A	7440-39-3	15	Barium	120	ug/l		6010B	5	0.1	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-1A	7440-47-3	51	Chromium	10	ug/l	U	6010B	10	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-1A	7439-89-6	340	Iron	1400	ug/l		6010B	100	0.3	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-1A	7439-92-1	131	Lead	5	ug/l	U	6010B	5	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-1A	7439-96-5	342	Manganese	13	ug/l		6010B	10	0.05	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-1A	7440-22-4	184	Silver	10	ug/l	U	6010B	10	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-1A	7440-62-2	209	Vanadium	13	ug/l		6010B	10	0.025	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-1A		357	TOC	2700	ug/l		9060A	1000	NE	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-1A		396	TOX	26	ug/l	JP1	9020	100	NE	1	11-Sep-08	12-Sep-08	18-Sep-08
24-02	MW-1A	E-10117	317	COD	20000	ug/l	U	410.4	20000	NE	1	11-Sep-08	17-Sep-08	19-Sep-08
24-02	MW-1B	16887-00-6	301	Chloride	5000	ug/l		9056	1000	NE	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-1B	16984-48-8	312	Fluoride	140	ug/l		9056	100	2	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-1B	14797-55-8	303	Nitrate	150	ug/l		9056	100	10	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-1B	14808-79-8	315	Sulfate	37000	ug/l		9056	5000	250	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-1B	00010-29-7	321	pH	7.2	su	T8	9040C		NE	1	11-Sep-08		14-Sep-08
24-02	MW-1B		324	Specific Conductance	480	umhos/cm		9050A		NE	1	11-Sep-08		15-Sep-08
24-02	MW-1B	7440-38-2	14	Arsenic	1.8	ug/l		6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-1B	7440-43-9	34	Cadmium	0.5	ug/l	U	6020	0.5	0.001	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-1B	7440-50-8	54	Copper	1	ug/l	U	6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-1B	7782-49-2	183	Selenium	0.39	ug/l	J	6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-1B	7440-66-6	213	Zinc	10	ug/l	U	6020	10	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-1B		311	Dissolved Solids	280000	ug/l		2540C	10000	NE	1	11-Sep-08	15-Sep-08	17-Sep-08
24-02	MW-1B		316	BOD	5000	ug/l	U	SM5210B	5000	NE	1	11-Sep-08		12-Sep-08
24-02	MW-1B	7439-97-6	132	Mercury	0.2	ug/l	U	7470A	0.2	0.0002	1	11-Sep-08	13-Sep-08	17-Sep-08
24-02	MW-1B	7440-39-3	15	Barium	22	ug/l		6010B	5	0.1	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-1B	7440-47-3	51	Chromium	10	ug/l	U	6010B	10	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-1B	7439-89-6	340	Iron	1400	ug/l		6010B	100	0.3	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-1B	7439-92-1	131	Lead	5	ug/l	U	6010B	5	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-1B	7439-96-5	342	Manganese	41	ug/l		6010B	10	0.05	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-1B	7440-22-4	184	Silver	10	ug/l	U	6010B	10	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-1B	7440-62-2	209	Vanadium	10	ug/l	U	6010B	10	0.025	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-1B		357	TOC	4000	ug/l		9060A	1000	NE	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-1B		396	TOX	33	ug/l	J	9020	100	NE	1	11-Sep-08	12-Sep-08	18-Sep-08
24-02	MW-1B	E-10117	317	COD	20000	ug/l	U	410.4	20000	NE	1	11-Sep-08	17-Sep-08	19-Sep-08
24-02	MW-4A	16887-00-6	301	Chloride	14000	ug/l		9056	1000	NE	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-4A	16984-48-8	312	Fluoride	81	ug/l	J	9056	100	2	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-4A	14797-55-8	303	Nitrate	18	ug/l	J	9056	100	10	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-4A	14808-79-8	315	Sulfate	43000	ug/l		9056	5000	250	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-4A		311	Dissolved Solids	95000	ug/l		2540C	10000	NE	1	11-Sep-08	12-Sep-08	15-Sep-08
24-02	MW-4A	00010-29-7	321	pH	4.5	su	T8	9040C		NE	1	11-Sep-08		15-Sep-08
24-02	MW-4A		324	Specific Conductance	160	umhos/cm		9050A		0.01	1	11-Sep-08		15-Sep-08
24-02	MW-4A	7440-38-2	14	Arsenic	1	ug/l	U	6020	1	0.001	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-4A	7440-43-9	34	Cadmium	0.22	ug/l	J	6020	0.5	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-4A	7440-50-8	54	Copper	1	ug/l	U	6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-4A	7782-49-2	183	Selenium	0.69	ug/l	J	6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-4A	7440-66-6	213	Zinc	6.4	ug/l	J	6020	10	NE	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-4A		316	BOD	5000	ug/l	U	SM5210B	5000	NE	1	11-Sep-08		12-Sep-08
24-02	MW-4A	7439-97-6	132	Mercury	0.2	ug/l	U	7470A	0.2	0.0002	1	11-Sep-08	13-Sep-08	17-Sep-08

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LANDFILL COMPLIANCE MONITORING GROUNDWATER RESULTS - SEPTEMBER 2008

FACILITY PERMIT	WELL ID	CAS Number	SWS ID	PARAMETER	RESULT	UNITS	Q	METHOD	MDL	SWSL	DILUTION FACTOR	COLLECT DATE	EXTRACTION DATE	ANALYSIS DATE
24-02	MW-4A	7440-39-3	15	Barium	47	ug/l		6010B	5	0.1	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-4A	7440-47-3	51	Chromium	10	ug/l	U	6010B	10	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-4A	7439-89-6	340	Iron	700	ug/l		6010B	100	0.3	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-4A	7439-92-1	131	Lead	5	ug/l	U	6010B	5	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-4A	7439-96-5	342	Manganese	24	ug/l		6010B	10	0.05	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-4A	7440-22-4	184	Silver	10	ug/l	U	6010B	10	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-4A	7440-62-2	209	Vanadium	10	ug/l	U	6010B	10	0.025	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-4A		357	TOC	7800	ug/l		9060A	1000	NE	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-4A		396	TOX	48	ug/l	J	9020	100	NE	1	11-Sep-08	12-Sep-08	18-Sep-08
24-02	MW-4A	E-10117	317	COD	13000	ug/l	J	410.4	20000	NE	1	11-Sep-08	17-Sep-08	19-Sep-08
24-02	MW-5A	16887-00-6	301	Chloride	130000	ug/l		9056	1000	NE	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-5A	16984-48-8	312	Fluoride	110	ug/l		9056	100	2	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-5A	14797-55-8	303	Nitrate	240	ug/l		9056	100	10	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-5A	14808-79-8	315	Sulfate	3600	ug/l	J	9056	5000	250	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-5A		311	Dissolved Solids	1000000	ug/l		2540C	10000	NE	1	11-Sep-08	12-Sep-08	15-Sep-08
24-02	MW-5A	00010-29-7	321	pH	7	su	T8	9040C		NE	1	11-Sep-08		15-Sep-08
24-02	MW-5A		324	Specific Conductance	1700	umhos/cm		9050A		0.01	1	11-Sep-08		15-Sep-08
24-02	MW-5A	7440-38-2	14	Arsenic	0.66	ug/l	J	6020	1	0.001	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-5A	7440-43-9	34	Cadmium	0.5	ug/l	U	6020	0.5	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-5A	7440-50-8	54	Copper	0.9	ug/l	J	6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-5A	7782-49-2	183	Selenium	1.4	ug/l		6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-5A	7440-66-6	213	Zinc	8.4	ug/l	J	6020	10	NE	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-5A		316	BOD	9600	ug/l	J4	SM5210B	5000	NE	1	11-Sep-08		12-Sep-08
24-02	MW-5A	7439-97-6	132	Mercury	0.2	ug/l	U	7470A	0.2	0.0002	1	11-Sep-08	13-Sep-08	17-Sep-08
24-02	MW-5A	7440-39-3	15	Barium	120	ug/l		6010B	5	0.1	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-5A	7440-47-3	51	Chromium	10	ug/l	U	6010B	10	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-5A	7439-89-6	340	Iron	2400	ug/l		6010B	100	0.3	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-5A	7439-92-1	131	Lead	5	ug/l	U	6010B	5	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-5A	7439-96-5	342	Manganese	180	ug/l		6010B	10	0.05	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-5A	7440-22-4	184	Silver	10	ug/l	U	6010B	10	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-5A	7440-62-2	209	Vanadium	7.7	ug/l	J	6010B	10	0.025	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-5A		357	TOC	35000	ug/l		9060A	1000	NE	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-5A		396	TOX	460	ug/l	J	9020	1000	NE	10	11-Sep-08	12-Sep-08	18-Sep-08
24-02	MW-5A	E-10117	317	COD	66000	ug/l		410.4	20000	NE	1	11-Sep-08	17-Sep-08	19-Sep-08
24-02	MW-7A	16887-00-6	301	Chloride	160000	ug/l		9056	1000	NE	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-7A	16984-48-8	312	Fluoride	180	ug/l		9056	100	2	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-7A	14797-55-8	303	Nitrate	270	ug/l		9056	100	10	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-7A		311	Dissolved Solids	740000	ug/l		2540C	10000	250	1	11-Sep-08	12-Sep-08	15-Sep-08
24-02	MW-7A	00010-29-7	321	pH	6.5	su	T8	9040C		NE	1	11-Sep-08		15-Sep-08
24-02	MW-7A		324	Specific Conductance	1200	umhos/cm		9050A		NE	1	11-Sep-08		15-Sep-08
24-02	MW-7A	14808-79-8	315	Sulfate	120000	ug/l		9056	5000	0.01	1	11-Sep-08	13-Sep-08	13-Sep-08
24-02	MW-7A	7440-38-2	14	Arsenic	3	ug/l		6020	1	0.001	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-7A	7440-43-9	34	Cadmium	0.5	ug/l	U	6020	0.5	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-7A	7440-50-8	54	Copper	1.4	ug/l		6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-7A	7782-49-2	183	Selenium	0.81	ug/l	J	6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-7A	7440-66-6	213	Zinc	9.3	ug/l	J	6020	10	NE	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-7A		316	BOD	11000	ug/l	J4	SM5210B	5000	NE	1	11-Sep-08		12-Sep-08
24-02	MW-7A	7439-97-6	132	Mercury	0.2	ug/l	U	7470A	0.2	0.0002	1	11-Sep-08	13-Sep-08	17-Sep-08
24-02	MW-7A	7440-39-3	15	Barium	71	ug/l		6010B	5	0.1	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-7A	7440-47-3	51	Chromium	10	ug/l	U	6010B	10	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-7A	7439-89-6	340	Iron	4400	ug/l		6010B	100	0.3	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-7A	7439-92-1	131	Lead	5	ug/l	U	6010B	5	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-7A	7439-96-5	342	Manganese	94	ug/l		6010B	10	0.05	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-7A	7440-22-4	184	Silver	10	ug/l	U	6010B	10	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-7A	7440-62-2	209	Vanadium	4.1	ug/l	J	6010B	10	0.025	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-7A		357	TOC	24000	ug/l		9060A	1000	NE	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-7A		396	TOX	820	ug/l	J	9020	1000	NE	10	11-Sep-08	12-Sep-08	18-Sep-08
24-02	MW-7A	E-10117	317	COD	25000	ug/l		410.4	20000	NE	1	11-Sep-08	17-Sep-08	19-Sep-08
24-02	MW-8A	16887-00-6	301	Chloride	2000	ug/l		9056	1000	NE	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-8A	16984-48-8	312	Fluoride	190	ug/l		9056	100	2	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-8A	14797-55-8	303	Nitrate	100	ug/l	U	9056	100	10	1	11-Sep-08	12-Sep-08	12-Sep-08

INTERNATIONAL PAPER - RIEGELWOOD MILL, NC
LANDFILL COMPLIANCE MONITORING GROUNDWATER RESULTS - SEPTEMBER 2008

FACILITY PERMIT	WELL ID	CAS Number	SWS ID	PARAMETER	RESULT	UNITS	Q	METHOD	MDL	SWSL	DILUTION FACTOR	COLLECT DATE	EXTRACTION DATE	ANALYSIS DATE
24-02	MW-8A	14808-79-8	315	Sulfate	89000	ug/l		9056	5000	250	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	MW-8A		311	Dissolved Solids	510000	ug/l		2540C	10000	NE	1	11-Sep-08	12-Sep-08	15-Sep-08
24-02	MW-8A	00010-29-7	321	pH	6.6	su	T8	9040C		NE	1	11-Sep-08		15-Sep-08
24-02	MW-8A		324	Specific Conductance	770	umhos/cm		9050A		0.01	1	11-Sep-08		15-Sep-08
24-02	MW-8A	7440-38-2	14	Arsenic	0.34	ug/l	J	6020	1	0.001	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-8A	7440-43-9	34	Cadmium	0.5	ug/l	U	6020	0.5	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-8A	7440-50-8	54	Copper	1	ug/l		6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-8A	7782-49-2	183	Selenium	0.51	ug/l	J	6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-8A	7440-66-6	213	Zinc	10	ug/l		6020	10	NE	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	MW-8A		316	BOD	5000	ug/l	U	SM5210B	5000	NE	1	11-Sep-08		12-Sep-08
24-02	MW-8A	7439-97-6	132	Mercury	0.2	ug/l	U	7470A	0.2	0.0002	1	11-Sep-08	13-Sep-08	17-Sep-08
24-02	MW-8A	7440-39-3	15	Barium	85	ug/l		6010B	5	0.1	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-8A	7440-47-3	51	Chromium	10	ug/l	U	6010B	10	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-8A	7439-89-6	340	Iron	210	ug/l		6010B	100	0.3	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-8A	7439-92-1	131	Lead	5	ug/l	U	6010B	5	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-8A	7439-96-5	342	Manganese	11	ug/l		6010B	10	0.05	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-8A	7440-22-4	184	Silver	10	ug/l	U	6010B	10	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-8A	7440-62-2	209	Vanadium	10	ug/l	U	6010B	10	0.025	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-8A		357	TOC	6200	ug/l		9060A	1000	NE	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	MW-8A		396	TOX	18	ug/l	J	9020	100	NE	1	11-Sep-08	12-Sep-08	18-Sep-08
24-02	MW-8A	E-10117	317	COD	5900	ug/l	J	410.4	20000	NE	1	11-Sep-08	17-Sep-08	19-Sep-08
24-02	PRIMARY			Phosphate,Ortho	250	ug/l	U	4500P-E	250	NE	10	11-Sep-08	12-Sep-08	12-Sep-08
24-02	PRIMARY	16887-00-6	301	Chloride	96000	ug/l		9056	1000	NE	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	PRIMARY	16984-48-8	312	Fluoride	100	ug/l	U	9056	100	2	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	PRIMARY	14797-55-8	303	Nitrate	100	ug/l	U	9056	100	10	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	PRIMARY	00010-29-7	321	pH	6.8	su	T8	9040C		NE	1	11-Sep-08		14-Sep-08
24-02	PRIMARY		324	Specific Conductance	4100	umhos/cm		9050A		NE	1	11-Sep-08		15-Sep-08
24-02	PRIMARY	14808-79-8	315	Sulfate	410000	ug/l		9056	25000	250	5	11-Sep-08	13-Sep-08	13-Sep-08
24-02	PRIMARY	7440-38-2	14	Arsenic	19	ug/l		6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	PRIMARY	7440-43-9	34	Cadmium	0.5	ug/l	U	6020	0.5	0.001	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	PRIMARY	7440-50-8	54	Copper	3.7	ug/l		6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	PRIMARY	7782-49-2	183	Selenium	2	ug/l		6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	PRIMARY	7440-66-6	213	Zinc	52	ug/l		6020	10	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	PRIMARY		311	Dissolved Solids	3200000	ug/l		2540C	10000	NE	1	11-Sep-08	13-Sep-08	17-Sep-08
24-02	PRIMARY		316	BOD	21000	ug/l	J4	SM5210B	5000	NE	1	11-Sep-08		12-Sep-08
24-02	PRIMARY	7439-97-6	132	Mercury	0.14	ug/l	J	7470A	0.2	0.0002	1	11-Sep-08	13-Sep-08	17-Sep-08
24-02	PRIMARY	7440-39-3	15	Barium	200	ug/l		6010B	5	0.1	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	PRIMARY	7440-47-3	51	Chromium	18	ug/l		6010B	10	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	PRIMARY	7439-89-6	340	Iron	7300	ug/l		6010B	100	0.3	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	PRIMARY	7439-92-1	131	Lead	5	ug/l	U	6010B	5	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	PRIMARY	7439-96-5	342	Manganese	660	ug/l		6010B	10	0.05	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	PRIMARY	7440-22-4	184	Silver	10	ug/l	U	6010B	10	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	PRIMARY	7440-62-2	209	Vanadium	130	ug/l		6010B	10	0.025	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	PRIMARY		357	TOC	120000	ug/l		9060A	10000	NE	10	11-Sep-08	16-Sep-08	17-Sep-08
24-02	PRIMARY		396	TOX	97	ug/l	J	9020	100	NE	1	11-Sep-08	12-Sep-08	18-Sep-08
24-02	PRIMARY	E-10117	317	COD	370000	ug/l		410.4	20000	NE	1	11-Sep-08	17-Sep-08	19-Sep-08
24-02	SECONDARY			Phosphate,Ortho	2000	ug/l		4500P-E	120	NE	5	11-Sep-08	12-Sep-08	12-Sep-08
24-02	SECONDARY	16887-00-6	301	Chloride	57000	ug/l		9056	1000	NE	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	SECONDARY	16984-48-8	312	Fluoride	720	ug/l		9056	100	2	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	SECONDARY	14797-55-8	303	Nitrate	49	ug/l	J	9056	100	10	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	SECONDARY	00010-29-7	321	pH	6.8	su	T8	9040C		NE	1	11-Sep-08		14-Sep-08
24-02	SECONDARY		324	Specific Conductance	3100	umhos/cm		9050A		NE	1	11-Sep-08		15-Sep-08
24-02	SECONDARY	14808-79-8	315	Sulfate	190000	ug/l		9056	10000	250	2	11-Sep-08	13-Sep-08	13-Sep-08
24-02	SECONDARY	7440-38-2	14	Arsenic	0.78	ug/l	J	6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	SECONDARY	7440-43-9	34	Cadmium	0.5	ug/l	U	6020	0.5	0.001	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	SECONDARY	7440-50-8	54	Copper	0.51	ug/l	J	6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	SECONDARY	7782-49-2	183	Selenium	1.3	ug/l		6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	SECONDARY	7440-66-6	213	Zinc	11	ug/l		6020	10	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	SECONDARY		311	Dissolved Solids	2100000	ug/l		2540C	10000	NE	1	11-Sep-08	13-Sep-08	17-Sep-08
24-02	SECONDARY		316	BOD	12000	ug/l	J4	SM5210B	5000	NE	1	11-Sep-08		12-Sep-08
24-02	SECONDARY	7439-97-6	132	Mercury	0.2	ug/l	U	7470A	0.2	0.0002	1	11-Sep-08	13-Sep-08	17-Sep-08

INTERNATIONAL PAPER - RIEGELWOOD MILL, NC
LANDFILL COMPLIANCE MONITORING GROUNDWATER RESULTS - SEPTEMBER 2008

FACILITY PERMIT	WELL ID	CAS Number	SWS ID	PARAMETER	RESULT	UNITS	Q	METHOD	MDL	SWSL	DILUTION FACTOR	COLLECT DATE	EXTRACTION DATE	ANALYSIS DATE
24-02	SECONDARY	7440-39-3	15	Barium	80	ug/l		6010B	5	0.1	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	SECONDARY	7440-47-3	51	Chromium	13	ug/l		6010B	10	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	SECONDARY	7439-89-6	340	Iron	1100	ug/l		6010B	100	0.3	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	SECONDARY	7439-92-1	131	Lead	5	ug/l	U	6010B	5	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	SECONDARY	7439-96-5	342	Manganese	550	ug/l		6010B	10	0.05	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	SECONDARY	7440-22-4	184	Silver	10	ug/l	U	6010B	10	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	SECONDARY	7440-62-2	209	Vanadium	13	ug/l		6010B	10	0.025	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	SECONDARY		357	TOC	46000	ug/l		9060A	10000	NE	10	11-Sep-08	16-Sep-08	17-Sep-08
24-02	SECONDARY		396	TOX	59	ug/l	J	9020	100	NE	1	11-Sep-08	12-Sep-08	18-Sep-08
24-02	SECONDARY	E-10117	317	COD	100000	ug/l		410.4	20000	NE	1	11-Sep-08	17-Sep-08	19-Sep-08
24-02	UNDERDRAIN			Phosphate,Ortho	250	ug/l	U	4500P-E	250	NE	10	11-Sep-08	12-Sep-08	12-Sep-08
24-02	UNDERDRAIN	16984-48-8	312	Fluoride	100	ug/l	U	9056	100	NE	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	UNDERDRAIN	14797-55-8	303	Nitrate	21	ug/l	J	9056	100	2	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	UNDERDRAIN	14808-79-8	315	Sulfate	130000	ug/l		9056	5000	10	1	11-Sep-08	12-Sep-08	12-Sep-08
24-02	UNDERDRAIN	00010-29-7	321	pH	6.9	su	T8	9040C		NE	1	11-Sep-08		14-Sep-08
24-02	UNDERDRAIN		324	Specific Conductance	4100	umhos/cm		9050A		NE	1	11-Sep-08		15-Sep-08
24-02	UNDERDRAIN	16887-00-6	301	Chloride	230000	ug/l		9056	2000	250	2	11-Sep-08	13-Sep-08	13-Sep-08
24-02	UNDERDRAIN	7440-38-2	14	Arsenic	3.4	ug/l		6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	UNDERDRAIN	7440-43-9	34	Cadmium	0.5	ug/l	U	6020	0.5	0.001	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	UNDERDRAIN	7440-50-8	54	Copper	0.96	ug/l	J	6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	UNDERDRAIN	7782-49-2	183	Selenium	3.7	ug/l		6020	1	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	UNDERDRAIN	7440-66-6	213	Zinc	18	ug/l		6020	10	0.01	1	11-Sep-08	14-Sep-08	15-Sep-08
24-02	UNDERDRAIN		311	Dissolved Solids	2800000	ug/l		2540C	10000	NE	1	11-Sep-08	15-Sep-08	17-Sep-08
24-02	UNDERDRAIN		316	BOD	9100	ug/l	J4	SM5210B	5000	NE	1	11-Sep-08		12-Sep-08
24-02	UNDERDRAIN	7439-97-6	132	Mercury	0.2	ug/l	U	7470A	0.2	0.0002	1	11-Sep-08	13-Sep-08	17-Sep-08
24-02	UNDERDRAIN	7440-39-3	15	Barium	120	ug/l		6010B	5	0.1	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	UNDERDRAIN	7440-47-3	51	Chromium	29	ug/l		6010B	10	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	UNDERDRAIN	7439-89-6	340	Iron	11000	ug/l		6010B	100	0.3	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	UNDERDRAIN	7439-92-1	131	Lead	5	ug/l	U	6010B	5	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	UNDERDRAIN	7439-96-5	342	Manganese	760	ug/l		6010B	10	0.05	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	UNDERDRAIN	7440-22-4	184	Silver	10	ug/l	U	6010B	10	0.01	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	UNDERDRAIN	7440-62-2	209	Vanadium	73	ug/l		6010B	10	0.025	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	UNDERDRAIN		357	TOC	95000	ug/l		9060A	1000	NE	1	11-Sep-08	16-Sep-08	17-Sep-08
24-02	UNDERDRAIN		396	TOX	520	ug/l	J	9020	1000	NE	10	11-Sep-08	12-Sep-08	18-Sep-08
24-02	UNDERDRAIN	E-10117	317	COD	230000	ug/l		410.4	20000	NE	1	11-Sep-08	17-Sep-08	19-Sep-08

Notes:

CAS Number - Chemical Abstracts Service is the chemical substance identifier number

SWS ID # - Number assigned to each parameter/analyte by the Solid Waste Section.

MDL - Laboratory Method Detection Limit

SWSL - Solid Waste Section Limits

Qualifiers (Q):

T8 (ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

U ND (Not Detected)

J4 The associated batch QC was outside the established quality control range for accuracy.

O (ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

J3 The associated batch QC was outside the established quality control range for precision.

P1 RPD value not applicable for sample concentrations less than 5 times the reporting limit.

J (EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

ESC Note: Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

TABLES

TABLE 1
SEMI-ANNUAL GROUNDWATER ANALYSIS RESULTS
INTERNATIONAL PAPER
RIEGELWOOD, NORTH CAROLINA
MACTEC JOB NO. 6550-08-0479
SEPTEMBER 2008 EVENT

		Montioring Well	MW-1A		MW-1B		MW-4A		MW-5A		MW-7A		MW-8A		2L Standard	GWP Standard	SWSL
		Collection Date	9/11/08		9/11/08		9/11/08		9/11/08		9/11/08		9/11/08				
Method	Parameter	Units	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q			
SM5210B	BOD	mg/l	<5.0	J4	<5.0	J4	<5.0	J4	9.6	J4	11	J4	<5.0	J4	NE	NE	NE
410.4	COD	mg/l	<20		<20		13	J	66		25		5.9	J	NE	NE	NE
5320B	TOX	mg/l	0.026	J, P1	0.033	J	0.048	J	0.46	J	0.82	J	0.018	J	NE	NE	NE
5310B	TOC (Total Organic	mg/l	2.7		4		7.8		35		24		6.2		NE	NE	NE
2540C	Dissolved Solids	mg/l	74	J3	280		95		1000		740		510		500	--	NE
4500H-B	pH	su	4.6	T8	7.2	T8	4.5	T8	7	T8	6.5	T8	6.6	T8	6.5-8.5	--	NE
120.1	Specific Conductance	umhos/cm	160		480		160		1700		1200		770		NE	NE	NE
300	Sulfate	mg/l	42		37		43		3.6	J	120		89		250	--	250
300	Chloride	mg/l	14		5		14		130		160		2		250	--	NE
300	Fluoride	mg/l	<0.10		0.14		0.081	J	0.11		0.18		0.19		2	--	2
300	Nitrate	mg/l	<0.10		0.15		0.018	J	0.24		0.27		<0.10		10	--	10
6020	Arsenic	mg/l	0.00028	J	0.0018		<0.0010		0.00066	J	0.003		0.00034	J	0.05	--	0.01
6010B	Barium	mg/l	0.12		0.022		0.047		0.12		0.071		0.085		2	--	0.1
6020	Cadmium	mg/l	<0.00050		<0.00050		0.00022	J	<0.00050		<0.00050		<0.00050		0.00175	--	0.001
6010B	Chromium	mg/l	<0.010		<0.010		<0.010		<0.010		<0.010		<0.010		0.05	--	0.01
6020	Copper	mg/l	<0.0010		<0.0010		<0.0010		0.0009	J	0.0014		0.001		1	--	0.01
6010B	Iron	mg/l	1.4		1.4		0.7		2.4		4.4		0.21		0.3	--	0.3
6010B	Lead	mg/l	<0.0050		<0.0050		<0.0050		<0.0050		<0.0050		<0.0050		0.015	--	0.01
6010B	Manganese	mg/l	0.013		0.041		0.024		0.18		0.094		0.011		0.05	--	0.05
7470A	Mercury	mg/l	<0.00020		<0.00020		<0.00020		<0.00020		<0.00020		<0.00020		0.00105	--	0.0002
6020	Selenium	mg/l	0.00081	J	0.00039	J	0.00069	J	0.0014		0.00081	J	0.00051	J	0.05	--	0.01
6010B	Silver	mg/l	<0.010		<0.010		<0.010		<0.010		<0.010		<0.010		0.0175	--	0.01
6010B	Vanadium	mg/l	0.013		<0.010		<0.010		0.0077	J	0.0041	J	<0.010		NE	0.0035	0.025
6020	Zinc	mg/l	0.025		<0.010		0.0064	J	0.0084	J	0.0093	J	0.01		1.05	--	0.01

Notes

Samples were collected on 09/11/08.
A less than symbol (<) indicates the parameter was not detected above laboratory quantitation limits.
2L Standard - Title 15, North Carolina Administrative Code, Subchapter 2L, class GA groundwater standards
GWP Standard - Ground Water Protection Standard (used when no 2L Standards are established)
SWSL - Solid Waste Section Limits
Bold values indicate concentrations in excess of the 2L N.C. Ground-Water Standards
NE = Not Established
Shaded cells with no bold are laboratory detection limits above the groundwater Standards

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Qualifiers (Q):

T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.
J4	The associated batch QC was outside the established quality control range for accuracy.
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
J3	The associated batch QC was outside the established quality control range for precision.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

ESC Note: Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

TABLE 2
ANNUAL GROUNDWATER ANALYSIS RESULTS
INTERNATIONAL PAPER
RIEGELWOOD, NORTH CAROLINA
MACTEC JOB NO. 6550-08-0479

PARAMETER	MONITORING WELL MW-1A																							2L Std	GWP Std	SWSL
	1997	1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008				
	SEPT	APRIL	SEPT	MAR	NOV	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT			
BOD, mg/L	<2	<2	<2	<2	5	12	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	< 5	< 2	<5	<2.00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NE	NE	NE
COD, mg/L	<5	6.34	6.27	<5	46	<5.0	<5.0	<5.0	<5.0	25	<5.0	7	<20.0	< 20	< 20	<20	21	<20	<20	<20	<20	<20	<20	NE	NE	NE
TOX, mg/L	0.0179	0.0119	0.02	<0.005	0.015	<0.010	0.022	0.0271	0.0173	0.0299	0.0156	0.022	<.010	0.013	< 0.100	<0.100	<0.100	<0.10	<0.10	<0.10	<0.10	0.0092	0.026	NE	NE	NE
TOC, as C, mg/L	4.99	2.01	2.46	1.72	7	3.3	2.1	3.64	3.40	2.90	<0.5	4.3	2.3	2.6	1.3	1.8	3.8	2.3	2.8	1.9	3.7	43	2.7	NE	NE	NE
TDS, mg/L	90	110	110	113	96.4	31	103	123	116	112	133	111	110	100	99	94	210	62	90	86	200	260	74	500	--	NE
pH	4.75	4.37	4.22	4.19	4.34	3.97	4.23	4.03	3.82	3.90	4.02	3.72	4.20	6.6	4.1	4.4	6.8	3.9	5.2	4.4	6.7	7.9	4.6	6.5-8.5	--	NE
Conductivity, umohs/cm	159	189	194	188	178	187.5	176	190	193	188	198	194	190	200	170	170	320	170	150	170	320	410	160	NE	NE	NE
Sulfate, mg/L	29.2	52.2	53.9	61.7	63.5	39	36	61	58	35	59	49	62	55	50	54	38	40	33	42	21	51	42	250	--	250
Chloride, as Cl, mg/L	20.8	12.9	19.7	13.3	14.5	20.5	22.5	9.2	8.2	11.0	8.4	8.8	6.2	9.6	8.3	10.0	11.0	13	12	15	4.8	5.8	14	250	--	NE
Fluoride, as F, mg/L	<0.1	<0.1	<0.1	<0.1	0.14	0.49	0.17	<0.2	0.17	0.16	0.12	0.2	0.2	< 0.100	0.11	<0.100	<0.100	<0.10	0.32	<0.10	0.15	0.069	<0.10	2	--	2
Nitrate, as NO3-N, mg/L	<0.1	<0.5	<0.5	<0.1	0.09	0.17	0.15	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	< 0.100	< 0.100	<0.100	<0.100	<0.10	<0.10	<0.10	<0.10	0.097	<0.10	10	--	10
Arsenic, as As, mg/L	<0.025	<0.025	<0.025	<0.025	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<.01	< 0.010	< 0.010	0.026	0.031	<0.020	<0.020	<0.020	<0.020	0.018	0.00028	0.05	--	0.01
Barium, as Ba, mg/L	0.082	0.129	0.114	0.152	0.141	0.121	<0.1	0.148	0.156	0.148	0.148	0.139	0.16	0.150	0.140	0.120	0.020	0.11	0.12	0.12	<0.0050	0.028	0.12	2	--	0.1
Cadmium, as Cd, mg/L	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0050	<0.005	<0.0100	<0.005	< 0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.00050	<0.00050	0.00175	--	0.001
Chromium, as Cr, mg/L	0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.02	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.010	< 0.010	< 0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05	--	0.01
Copper, as Cu, mg/L	0.009	<0.005	<0.005	<0.005	<0.02	<0.02	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.010	< 0.010	< 0.010	<0.020	<0.020	<0.020	<0.020	<0.020	0.021	<0.0050	<0.0010	1	--	0.01
Iron, as Fe, mg/L	0.834	1.5	1.96	2.52	2.28	1.97	2.63	2.73	3.31	2.35	2.34	2.56	2.6	2.80	1.90	1.60	12.00	0.34	1.2	1.7	<0.10	14	1.4	0.3	--	0.3
Lead, as Pb, mg/L	<0.020	<0.020	<0.020	<0.020	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.005	< 0.005	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.015	--	0.01
Manganese, as Mn, mg/L	<0.010	0.017	0.0225	0.0212	0.0244	0.0169	0.017	0.0757	0.0249	0.0208	0.0195	0.0201	0.03	0.020	0.017	0.018	0.330	0.016	0.02	0.014	0.026	0.32	0.013	0.05	--	0.05
Mercury, as Hg, mg/L	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00105	--	0.0002
Selenium, as Se, mg/L	<0.100	<0.100	<0.100	<0.100	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.010	< 0.010	0.01	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.0050	0.00081	0.05	--	0.01
Silver, as Ag, mg/L	<0.015	<0.015	<0.015	<0.015	<0.01	<0.02	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.005	< 0.0050	< 0.0050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.032	<0.010	0.0175	--	0.01
Vanadium, mg/L	NA	NA	NA	NA	NA	<0.05	<0.05	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.010	< 0.010	< 0.010	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	0.0044	0.013	NE	0.0035	0.025
Zinc, as Zn, mg/L	0.01	0.01	<0.100	0.0218	<0.02	<0.02	<0.02	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	0.044	0.032	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.050	0.025	1.05	--	0.01

NOTES:
< Symbol = Below Laboratory Detectable Limits
2L Std - Title 15, North Carolina Administrative Code, Subchapter 2L, class GA groundwater standard.
GWP Std - Ground Water Protection Standard (used when no 2L Standards are established)
SWSL - Solid Waste Section Limits - target laboratory method detection limits
Bold text denotes results that exceed NC ground-water standards
Data is reported in milligrams per liter (mg/L) unless otherwise noted
NA = Not Analyzed
NE = Not Established
Refer to laboratory reports for actual sample dates

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TABLE 2 Continued
ANNUAL GROUNDWATER ANALYSIS RESULTS
INTERNATIONAL PAPER
RIEGELWOOD, NORTH CAROLINA
MACTEC JOB NO. 6550-08-0479

PARAMETER	MONITORING WELL MW-1B																							2L Std	GWP Std	SWSL
	1997	1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008				
	SEPT	APRIL	SEPT	MAR	NOV	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT			
BOD, mg/L	<2	<2	<2	<2	>27*	2	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	< 5	< 2	<5	<2.00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NE	NE	NE
COD, mg/L	9.47	8.46	6.55	5.18	6.00	9	5	<5.0	<5.0	<5.0	27	6	<20	< 20	94	<20	<20	<20	<20	<20	<20	<20	<20	NE	NE	NE
TOX, mg/L	0.007	0.0	0.01	<0.005	<0.01	<0.020	<0.01	0.0463	0.0171	0.0443	0.0195	0.03	<0.010	NR	< 0.100	<0.100	<0.100	<0.10	<0.10	<0.10	<0.10	0.015	0.033	NE	NE	NE
TOC, as C, mg/L	8.19	1.54	<0.100	1.02	8.40	5.3	1.7	3.18	16.80	<0.5	<0.5	5.50	1.90	2.3	1.3	1.0	2.1	1.6	2.4	1.5	4	2.4	4	NE	NE	NE
TDS, mg/L	293	367	352	391	387	290	411	360	394	339	364	293	320	280	320	310	100	160	190	180	110	76	280	500	--	NE
pH	7.38	7.42	7.19	7.35	7.27	7.37	7.26	7.47	7.64	7.35	7.42	7.41	7.30	6.4	6.9	7.4	5.0	6.5	6.8	6.8	4.4	4.8	7.2	6.5-8.5	--	NE
Conductivity, umohs/cm	449	499	554	564	543	583	599	501	610	513	596	442	540	480	540	500	160	310	280	290	160	160	480	NE	NE	NE
Sulfate Turbidimetric, mg/L	30	48.2	55.2	56.7	49.0	50.0	44.5	49	51	38	60.0	35	42	39	40	34	38	20	15	20	48	48	37	250	--	250
Chloride, as Cl, mg/L	9.01	7.40	12.60	10.00	12.90	13.5	14.0	7.9	6.1	8.1	6.4	12.0	8.0	6.4	5.6	6.4	11.0	6.5	4.2	4.8	11	14	5	250	--	NE
Fluoride, as F, mg/L	0.138	0.155	0.145	0.162	0.150	0.44	0.15	<0.2	0.15	0.13	0.12	0.19	0.15	0.18	0.18	0.14	<0.100	<0.10	0.11	0.12	0.15	0.13	0.14	2	--	2
Nitrate, as NO3-N, mg/L	0.11	<0.5	<0.5	<0.1	0.08	0.33	0.13	<0.2	<0.2	0.38	0.2	0.45	<0.1	< 0.100	0.22	<0.100	<0.100	<0.10	<0.10	<0.10	<0.10	<0.10	0.15	10	--	10
Arsenic, as As, mg/L	<0.025	<0.025	<0.025	<0.025	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.010	< 0.010	<0.010	<0.020	<0.020	<0.020	<0.020	<0.020	0.31	<0.0050	0.0018	0.05	--	0.01
Barium, as Ba, mg/L	0.054	0.041	0.044	0.038	<0.1	<0.1	<0.1	<0.100	<0.100	<0.100	<0.100	<0.0100	0.022	0.016	0.049	0.024	0.095	0.013	0.018	0.016	0.2	0.12	0.022	2	--	0.1
Cadmium, as Cd, mg/L	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0050	<0.005	<0.0100	<0.005	< 0.005	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.00050	<0.00050	0.00175	--	0.001
Chromium, as Cr, mg/L	0.012	<0.010	<0.010	<0.010	<0.01	<0.01	<0.02	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.010	< 0.010	0.028	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.0035	<0.010	0.05	--	0.01
Copper, as Cu, mg/L	<0.005	<0.005	<0.005	<0.005	<0.02	<0.02	<0.01	<0.0100	<0.0100	<0.0100	<0.0101	<0.0100	<0.010	< 0.010	< 0.010	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.0050	<0.0010	1	--	0.01
Iron, as Fe, mg/L	1.30	0.665	1.79	0.37	<0.1	1.28	<0.1	0.212	0.508	1.37	<0.0102	0.38	0.38	0.29	11.00	3.70	5.40	3.00	3.1	3.5	11	1.9	1.4	0.3	--	0.3
Lead, as Pb, mg/L	0.023	<0.020	<0.020	<0.020	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0100	<0.0103	<0.0100	<0.005	< 0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.015	--	0.01
Manganese, as Mn, mg/L	0.077	0.046	0.072	0.028	0.026	0.0486	<0.01	<0.0100	0.0161	0.0429	<0.0104	0.0136	<0.01	0.010	0.130	0.300	0.015	0.047	0.16	0.05	1.2	0.015	0.041	0.05	--	0.05
Mercury, as Hg, mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003	<0.0003	<0.0003	<0.0105	<0.0003	<0.0002	< 0.0002	< 0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00105	--	0.0002
Selenium, as Se, mg/L	<0.100	<0.100	<0.100	<0.100	<0.01	<0.01	<0.01	<0.0100	0.0142	<0.0100	<0.0106	<0.0100	<0.010	< 0.010	< 0.010	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.0050	0.00039	0.05	--	0.01
Silver, as Ag, mg/L	<0.015	<0.015	<0.015	<0.015	<0.01	<0.02	<0.01	<0.0100	<0.0100	<0.0100	<0.0107	<0.0100	<0.005	< 0.005	< 0.0050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.0061	<0.010	0.0175	--	0.01
Vanadium, mg/L	NA	NA	NA	NA	NA	<0.05	<0.05	<0.0500	<0.0500	<0.0500	<0.0108	<0.0500	<0.010	< 0.010	< 0.010	<0.010	0.015	<0.010	<0.010	<0.010	<0.010	0.015	<0.010	NE	0.0035	0.025
Zinc, as Zn, mg/L	0.021	0.012	<0.100	0.0149	<0.02	<0.02	<0.02	<0.0200	<0.0200	<0.0200	<0.0109	<0.0200	<0.030	< 0.030	0.054	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.050	<0.010	1.05	--	0.01

NOTES:
< Symbol = Below Laboratory Detectable Limits
2L Std - Title 15, North Carolina Administrative Code, Subchapter 2L, class GA groundwater standard.
GWP Std - Ground Water Protection Standard (used when no 2L Standards are established)
SWSL - Solid Waste Section Limits - target laboratory method detection limits
Bold text denotes results that exceed NC ground-water standards
Data is reported in milligrams per liter (mg/L) unless otherwise noted
NA = Not Analyzed
NE = Not Established
Refer to laboratory reports for actual sample dates

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CHECKED BY: AEG 10/3/08
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TABLE 2 Continued
ANNUAL GROUNDWATER ANALYSIS RESULTS
INTERNATIONAL PAPER
RIEGELWOOD, NORTH CAROLINA
MACTEC JOB NO. 6550-08-0479

PARAMETER	MONITORING WELL MW-4A																							2L Std	GWP Std	SWSL
	1997	1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008				
	SEPT	APRIL	SEPT	MAR	NOV	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT			
BOD, mg/L	<2	<2	<2	<2	4	4	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	< 5	<2	<5	<2.00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NE	NE	NE
COD, mg/L	16.7	9.52	11.3	14.5	10	16	9.8	12	6	22	41	<5.0	<20	< 20	27	24	< 20	<20	<20	<20	<20	18	13	NE	NE	NE
TOX, mg/L	0.047	0.039	0.041	0.013	<0.01	0.037	0.019	0.0329	0.0297	0.0255	0.0215	0.027	<0.010	0.018	<0.100	<0.100	<0.100	<0.10	<0.10	<0.10	<0.10	0.019	0.048	NE	NE	NE
TOC, as C, mg/L	6.33	4.65	2.06	3.24	7.2	5.3	5	4.99	4.7	3.1	2.7	3.4	4.4	6.7	6.2	6.3	3.4	6.7	5.7	5.6	7.3	4.7	7.8	NE	NE	NE
TDS, mg/L	104	155	131	170	117	35	108	153	112	104	186	77	120	190	160	200	200	180	210	110	88	160	95	500	--	NE
pH	5.00	5.72	5.31	5.08	5.60	5.17	4.72	5.05	4.64	4.65	4.61	4.66	5.40	5.9	4.7	4.8	4.8	5.0	4.7	5.2	3.9	4.2	4.5	6.5-8.5	--	NE
Conductivity, umohs/cm	158	224	202	269	222	198.4	157	216.7	179	152	125	122	200	270	280	310	240	320	310	190	230	250	160	NE	NE	NE
Sulfate Turbidimetric, mg/L	30.6	36.4	40	72.4	48.8	39	34	60	41	35	28	29	46	60	51	75	52	82	77	54	75	76	43	250	--	250
Chloride, as Cl, mg/L	20.2	28.9	29	29	26.5	25.5	29.5	19	17	16	13	9.8	19	24	34	34	24	31	28	10	16	22	14	250	--	NE
Fluoride, as F, mg/L	<0.1	<0.1	<0.1	<0.1	0.29	0.42	0.2	<0.2	0.15	0.11	<0.10	0.18	<0.10	< 0.100	< 0.100	0.110	0.120	0.180	0.12	<0.10	<0.10	<0.10	0.081	2	--	2
Nitrate, as NO3-N, mg/L	<0.1	<0.1	<0.1	<0.1	0.06	0.22	0.26	<0.2	<0.2	0.38	<0.2	<0.2	<0.1	< 0.100	< 0.100	<0.100	<0.100	<0.10	<0.10	<0.10	<0.10	<0.10	0.018	10	--	10
Arsenic, as As, mg/L	<0.025	<0.025	<0.025	<0.025	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.010	< 0.010	< 0.010	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.0010	<0.0010	0.05	--	0.01
Barium, as Ba, mg/L	0.093	0.04	0.0344	0.0683	<0.1	<0.1	<0.1	<0.100	<0.100	<0.100	<0.100	<0.0100	0.043	0.075	0.066	0.081	0.074	0.071	0.087	0.039	<0.0050	0.051	0.047	2	--	0.1
Cadmium, as Cd, mg/L	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0050	<0.005	<0.0100	<0.005	< 0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0	0.0002	0.00175	--	0.001
Chromium, as Cr, mg/L	<0.010	<0.010	<0.010	<0.010	<0.01	<0.01	<0.02	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.010	< 0.010	0.02	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05	--	0.01
Copper, as Cu, mg/L	0.005	<0.005	<0.005	<0.005	<0.02	<0.02	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.010	< 0.010	< 0.010	<0.020	<0.020	<0.020	<0.020	<0.020	0.062	<0.0010	<0.0010	1	--	0.01
Iron, as Fe, mg/L	13.3	1.67	5.32	2.09	2.59	5.61	1.2	3.51	0.345	0.239	<0.100	0.519	6.1	10	9.2	9.3	3.8	11.0	9	8.6	<0.10	6.6	0.7	0.3	--	0.3
Lead, as Pb, mg/L	<0.020	<0.020	<0.020	<0.020	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.005	< 0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.015	--	0.01
Manganese, as Mn, mg/L	0.076	0.096	0.053	0.058	0.055	0.0472	0.0397	0.0480	0.0394	0.0423	0.0301	0.0276	0.054	0.078	0.120	0.110	0.048	0.061	0.064	0.04	0.025	0.062	0.024	0.05	--	0.05
Mercury, as Hg, mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0002	< 0.0002	< 0.00020	< 0.00020	< 0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0	<0.00020	0.00105	--	0.0002
Selenium, as Se, mg/L	<0.100	<0.100	<0.100	<0.100	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.010	< 0.010	< 0.010	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.00066	0.0007	0.05	--	0.01
Silver, as Ag, mg/L	<0.015	<0.015	<0.015	<0.015	<0.01	<0.02	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.005	< 0.0050	< 0.0050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.0175	--	0.01
Vanadium, mg/L	NA	NA	NA	NA	NA	<0.05	<0.05	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.010	< 0.010	< 0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NE	0.0035	0.025
Zinc, as Zn, mg/L	0.035	0.038	<0.100	0.019	<0.02	0.0473	<0.02	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.030	< 0.030	< 0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.0035	0.0064	1.05	--	0.01

NOTES:
< Symbol = Below Laboratory Detectable Limits
2L Std - Title 15, North Carolina Administrative Code, Subchapter 2L, class GA groundwater standard.
GWP Std - Ground Water Protection Standard (used when no 2L Standards are established)
SWSL - Solid Waste Section Limits - target laboratory method detection limits
Bold text denotes results that exceed NC ground-water standards
Data is reported in milligrams per liter (mg/L) unless otherwise noted
NA = Not Analyzed
NE = Not Established
Refer to laboratory reports for actual sample dates

PREPARED BY: BWJ 10/2/08
CHECKED BY: AEG 10/3/08
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TABLE 2 Continued
ANNUAL GROUNDWATER ANALYSIS RESULTS
INTERNATIONAL PAPER
RIEGELWOOD, NORTH CAROLINA
MACTEC JOB NO. 6550-08-0479

PARAMETER	MONITORING WELL MW-5A																							2L Std	GWP Std	SWSL
	1997	1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008				
	SEPT.	APRIL	SEPT	MAR	NOV	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT			
BOD, mg/L	11.5	4.23	8.96	10.9	9	12	4	4	<2.0	3	10	16	4	< 5	<5	<5	3	<5.0	<5.0	6.3	<5.0	<5.0	9.6	NE	NE	NE
COD, mg/L	203	193	99.9	181	107	212	125	222	171	93	166	66	160	110	190	52	93	95	120	120	92	74	66	NE	NE	NE
TOX, mg/L	3.58	2.5	1.4	3.37	0.099	2.46	1.22	2.68	1.4	0.502	0.574	0.25	1.6	0.870	<4.0	0.170	< 1.00	<5.0	<5.0	<0.10	<2.0	0.35	0.46	NE	NE	NE
TOC, as C, mg/L	105	62.2	23	46.3	23.5	81.5	22.3	90.3	75.6	7.5	<0.5	30.1	49	40	56	16	13	27	33	<1.0	37	31	35	NE	NE	NE
TDS, mg/L	2390	1700	954	1820	1116	1599	1216	2220	1847	1540	879	704	1400	160	1,600	640	970	850	960	1100	980	1100	1000	500	--	NE
pH	6.81	6.87	6.51	6.72	6.67	6.71	6.61	6.71	6.96	7.53	7.24	7.54	6.9	6.4	6.5	7.3	6.9	6.8	6.7	6.7	6.8	7.6	7	6.5-8.5	--	NE
Conductivity, umohs/cm	3260	2880	1590	3170	1703	3146	1792	2581	2564	1557	1808	1126	2300	1,900	2,900	1,100	1,800	1,500	1700	1900	1700	1800	1700	NE	NE	NE
Sulfate Turbidimetric, mg/L	25.6	65.2	55.9	26.7	42	62.0	78.0	49	29	21	43.0	32	57	110	<5.0	9.5	<5.00	<5.0	5	<5.0	<5.0	4.1	3.6	250	--	250
Chloride, as Cl, mg/L	600	265	249	479	119	396	211	440	300	130	150	95	280	170	410	64	180	170	170	220	170	130	130	250	--	NE
Fluoride, as F, mg/L	0.104	<0.1	<0.1	<0.1	0.17	0.34	0.21	<0.2	0.27	<0.10	0.1	0.46	0.13	< 0.100	< 0.100	<0.100	<0.100	<0.10	<0.10	<0.10	<0.10	<0.10	0.11	2	--	2
Nitrate, as NO3-N, mg/L	0.835	0.948	0.344	5.09	0.57	0.13	0.22	<0.2	<0.2	<0.2	<0.2	<0.2	<0.100	< 0.100	< 0.100	<0.100	0.26	<0.10	<0.10	<0.10	<0.10	<0.10	0.24	10	--	10
Arsenic, as As, mg/L	<0.025	<0.025	<0.025	<0.025	<0.01	<0.01	<0.01	<0.0100	<0.0100	0.0113	<0.0100	<0.0100	<0.010	< 0.010	< 0.010	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.00059	0.00066	0.05	--	0.01
Barium, as Ba, mg/L	0.181	0.193	0.0583	0.032	<0.1	0.139	<0.1	0.112	0.159	<0.100	0.111	<0.0100	0.18	0.140	0.190	0.052	0.032	0.088	0.12	0.13	0.011	0.11	0.12	2	--	0.1
Cadmium, as Cd, mg/L	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0050	<0.005	<0.0100	<.005	< 0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.00050	<0.00050	0.0018	--	0.001
Chromium, as Cr, mg/L	0.014	0.012	<0.010	<0.010	<0.01	<0.01	<0.02	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.010	< 0.010	0.015	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05	--	0.01
Copper, as Cu, mg/L	0.005	<0.005	<0.005	<0.010	<0.02	<0.02	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.010	< 0.010	< 0.010	<0.020	<0.020	<0.020	<0.020	<0.020	0.021	<0.0010	0.0009	1	--	0.01
Iron, as Fe, mg/L	3.01	6.05	2.6	1.93	1.36	3.79	0.805	5.15	17.9	1.71	4.21	0.248	1.8	21	4.7	0.6	0.1	1.5	2	1.5	0.31	0.46	2.4	0.3	--	0.3
Lead, as Pb, mg/L	0.036	<0.020	<0.020	<0.020	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.005	< 0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.015	--	0.01
Manganese, as Mn, mg/L	0.650	0.745	0.183	0.386	0.273	0.279	0.166	0.995	0.572	0.252	0.259	0.235	0.730	0.540	0.730	0.190	0.016	0.270	0.37	0.45	<0.010	0.34	0.18	0.05	--	0.05
Mercury, as Hg, mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	<0.0002	<0.0002	<0.00020	<0.00020	0.0011	--	0.0002
Selenium, as Se, mg/L	<0.100	<0.100	<0.100	<0.100	<0.01	<0.01	<0.01	0.0117	0.0159	<0.0100	<0.0100	<0.0100	<0.010	< 0.010	< 0.010	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.0018	0.0014	0.05	--	0.01
Silver, as Ag, mg/L	<0.015	<0.015	<0.015	<0.015	<0.01	<0.02	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.005	< 0.0050	< 0.0050	<0.010	<0.010	<0.010	0.046	<0.010	<0.010	<0.010	<0.010	0.0175	--	0.01
Vanadium, mg/L	NA	NA	NA	NA	NA	<0.05	<0.05	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.010	0.014	0.012	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.0041	0.0077	NE	0.0035	0.025
Zinc, as Zn, mg/L	<0.010	0.029	<0.100	<0.01	<0.02	<0.02	<0.02	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.030	< 0.030	0.063	<0.030	<0.030	<0.030	<0.030	<0.030	1.0	0.0042	0.0084	1.05	--	0.01

NOTES:
< Symbol = Below Laboratory Detectable Limits
2L Std - Title 15, North Carolina Administrative Code, Subchapter 2L, class GA groundwater standard.
GWP Std - Ground Water Protection Standard (used when no 2L Standards are established)
SWSL - Solid Waste Section Limits - target laboratory method detection limits
Bold text denotes results that exceed NC ground-water standards
Data is reported in milligrams per liter (mg/L) unless otherwise noted
NA = Not Analyzed
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Refer to laboratory reports for actual sample dates

PREPARED BY: BWJ 10/2/08
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TABLE 2 Continued
ANNUAL GROUNDWATER ANALYSIS RESULTS
INTERNATIONAL PAPER
RIEGELWOOD, NORTH CAROLINA
MACTEC JOB NO. 6550-08-0479

PARAMETER	MONITORING WELL MW-7A																							2L Std	GWP Std	SWSL
	1997	1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008				
	SEPT	APRIL	SEPT	MAR	NOV	MAR	SEPT	MAR.	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT			
BOD, mg/L	4.02	6.02	<2	<2	3	2	<1.0	2	<2.0	<2.0	<2.0	3	<2.0	< 5	<5	<5	<2.00	<5.0	<5.0	<5.0	<5.0	<5.0	11	NE	NE	NE
COD, mg/L	115	179	156	154	108	118	114	154	96	132	157	61	110	110	120	130	130	120	120	140	120	63	25	NE	NE	NE
TOX, mg/L	2.560	2.28	1.97	2.21	0.540	1.02	1.4	1.79	0.976	0.914	0.964	0.91	1.5	1.30	12.00	1.60	< 5.0	<5.0	<5.0	0.51	<20	1.1	0.82	NE	NE	NE
TOC, as C, mg/L	47.2	35	28.6	25.8	43.1	31.3	50.2	55.8	41.4	22.4	<0.5	29.7	32	42	34	37	50	35	35	35	43	28	24	NE	NE	NE
TDS, mg/L	1370	1390	1190	1230	1200	832	1596	1740	1501	2110	1354	1168	1100	1400	1200	1400	1100	1000	1200	1200	1000	1100	740	500	--	NE
pH	6.79	6.83	6.59	6.7	6.74	6.94	6.79	6.86	7.07	6.86	6.84	6.66	6.9	6.7	6.9	6.8	6.9	6.9	7.2	7.0	6.9	7.4	6.5	6.5-8.5	--	NE
Conductivity, umohs/cm	2190	2520	2290	2160	2250	1456	1445	2096	1628	1546	1928	1784	1800	2,200	2,100	2,200	1,600	1,800	2000	2000	1700	1900	1200	NE	NE	NE
Sulfate Turbidimetric, mg/L	0.395	2.26	0.824	7.22	<5.0	<5.0	<5.0	31	38	23	36	28	61	81	71	78	61	45	59	41	41	53	120	250	--	250
Chloride, as Cl, mg/L	515	527	550	437	477	274	281	360	230	260	330	320	250	290	250	260	180	170	200	200	200	270	160	250	--	NE
Fluoride, as F, mg/L	0.134	0.101	0.108	0.103	0.58	0.49	0.26	0.28	0.32	0.27	0.1	0.25	<0.100	0.140	0.120	<0.100	<0.100	0.110	0.13	<0.10	0.12	0.05	0.18	2	--	2
Nitrate, as NO3-N, mg/L	<0.1	<0.1	<0.1	<0.1	0.03	0.16	0.39	<0.2	<0.2	<0.2	<0.2	<0.2	<0.100	< 0.100	< 0.100	<0.100	0.17	<0.10	<0.10	<0.10	<0.10	<0.10	0.27	10	--	10
Arsenic, as As, mg/L	<0.025	<0.025	<0.025	0.0338	<0.01	0.0191	0.0105	0.017	<0.0100	0.0109	0.0136	<0.0100	0.016	0.013	<0.010	<0.020	0.035	<0.020	0.024	0.026	<0.020	0.016	0.003	0.05	--	0.01
Barium, as Ba, mg/L	0.073	0.075	0.0704	0.0876	<0.1	<0.1	<0.1	<0.100	<0.100	<0.100	<0.100	<0.0100	0.052	0.062	0.042	0.059	0.065	0.037	0.054	0.056	0.07	0.062	0.071	2	--	0.1
Cadmium, as Cd, mg/L	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0050	<0.005	<0.0100	<0.005	< 0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.00050	<0.00050	0.00175	--	0.001
Chromium, as Cr, mg/L	<0.010	<0.010	0.0106	0.0288	<0.01	<0.01	<0.02	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.010	< 0.010	0.032	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05	--	0.01
Copper, as Cu, mg/L	<0.005	<0.005	<0.005	<0.005	<0.02	<0.02	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.010	< 0.010	< 0.010	<0.020	<0.020	<0.020	<0.020	<0.020	0.18	<0.0010	0.0014	1	--	0.01
Iron, as Fe, mg/L	39.8	40.9	37	57.4	23.2	21.4	11.4	24.4	16.1	15.6	17.3	33.7	23	30	15	22.0	31.0	14.0	21	30	12	28	4.4	0.3	--	0.3
Lead, as Pb, mg/L	0.027	<0.020	<0.020	<0.020	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.005	< 0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	0.0051	0.0072	0.0057	<0.0050	<0.0050	0.015	--	0.01
Manganese, as Mn, mg/L	0.795	0.794	0.691	0.759	0.522	0.352	0.267	0.404	0.402	0.396	0.463	0.447	0.490	0.610	0.360	0.520	0.230	0.340	0.34	0.51	0.079	0.68	0.094	0.05	--	0.05
Mercury, as Hg, mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	0.00105	--	0.0002
Selenium, as Se, mg/L	<0.100	<0.100	<0.100	<0.100	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.010	< 0.010	< 0.010	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.0045	0.00081	0.05	--	0.01
Silver, as Ag, mg/L	<0.015	<0.015	<0.015	<0.015	<0.02	<0.01	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	0.0064	< 0.0050	< 0.0050	<0.010	<0.010	<0.010	<0.010	<0.010	0.022	<0.010	<0.010	0.0175	--	0.01
Vanadium, mg/L	NA	NA	NA	NA	NA	<0.05	<0.05	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.011	0.022	0.01	0.014	0.017	0.014	0.014	0.028	<0.010	0.0091	0.0041	NE	0.0035	0.025
Zinc, as Zn, mg/L	<0.010	0.017	<0.100	0.0348	<0.02	<0.02	<0.02	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	0.072	< 0.030	< 0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.67	<0.010	0.0093	1.05	--	0.01

NOTES:
< Symbol = Below Laboratory Detectable Limits
2L Std - Title 15, North Carolina Administrative Code, Subchapter 2L, class GA groundwater standard.
GWP Std - Ground Water Protection Standard (used when no 2L Standards are established)
SWSL - Solid Waste Section Limits - target laboratory method detection limits
Bold text denotes results that exceed NC ground-water standards
Data is reported in milligrams per liter (mg/L) unless otherwise noted
NA = Not Analyzed
NE = Not Established
Refer to laboratory reports for actual sample dates

PREPARED BY: BWJ 10/2/08
CHECKED BY: AEG 10/3/08
h:\CLIENTS\IP\LANDFILL\08DATA\08Sept TBLS.XLS

TABLE 2 Continued
ANNUAL GROUNDWATER ANALYSIS RESULTS
INTERNATIONAL PAPER
RIEGELWOOD, NORTH CAROLINA
MACTEC JOB NO. 6550-08-0479

PARAMETER	MONITORING WELL MW-8A																							2L Std	GWP Std	SWSL
	1997	1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008				
	SEPT.	APRIL	SEPT	MAR	NOV	MAR	SEPT	MAR.	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT	MAR	SEPT			
BOD, mg/L	3.48	<2	<2	<2	4	4	<1.0	<2.0	<2.0	6	<2.0	<2.0	<2.0	< 5	<5	<5	<2.00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NE	NE	NE
COD, mg/L	110	19.3	12.6	9.96	46	8	<5.0	6	<5.0	7	59	8	<20	< 20	30	<20	<20	<20	<20	<20	<20	<20	5.9	NE	NE	NE
TOX, mg/L	0.012	0.028	0.014	0.028	<0.01	<0.010	0.018	0.0217	0.0198	0.0397	0.041	0.014	<0.01	< 0.010	<100	<0.100	<0.100	<5.0	<0.10	0.56	<0.10	0.03	0.018	NE	NE	NE
TOC, as C, mg/L	5.04	4.65	3.42	2.11	8.4	3.4	3.9	4	3.3	<0.5	<0.5	4.4	5.9	4	5.2	3.4	6.5	3.0	4	2.9	9	3.9	6.2	NE	NE	NE
TDS, mg/L	448	407	464	346	337	256	448	295	480	418	862	399	500	1,100	580	400	480	330	350	300	370	730	510	500	--	NE
pH	7.32	7.24	7.02	7.03	6.86	7.13	6.89	7.39	7.49	7.44	7.04	7.47	7.1	6.5	6.5	6.9	7.0	6.8	6.8	7.0	7	7.6	6.6	6.5-8.5	--	NE
Conductivity, umohs/cm	662	634	701	547	526	619	667	505	670	602	965	442	790	710	830	670	780	600	600	600	640	990	770	NE	NE	NE
Sulfate Turbidimetric, mg/L	134	26.5	111	80.3	33	43	74	32	100	30	290	28	91	70	130	68	38	21	9.8	13	20	370	89	250	--	250
Chloride, as Cl, mg/L	9.6	3.82	12.2	6.76	11	13.5	8.5	2.0	3.9	3.9	4.0	2.1	4.4	3	3.0	3.0	4.4	3.8	1.7	2.8	5.1	3.2	2	250	--	NE
Fluoride, as F, mg/L	0.118	0.183	0.168	0.187	0.23	0.45	0.26	<0.2	0.35	0.17	<0.10	0.3	<0.100	0.220	0.320	0.240	0.360	0.220	0.16	0.2	0.21	0.12	0.19	2	--	2
Nitrate, as NO3-N, mg/L	<0.1	<0.1	<0.1	<0.1	0.07	0.19	0.37	<0.2	<0.2	0.38	0.22	<0.2	<0.100	< 0.100	< 0.100	<0.100	<0.100	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	10	--	10
Arsenic, as As, mg/L	<0.025	<0.025	<0.025	<0.025	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0100	0.011	<0.0100	<0.010	< 0.010	< 0.010	<0.020	0.021	<0.020	<0.020	<0.020	0.022	<0.0010	0.00034	0.05	--	0.01
Barium, as Ba, mg/L	0.09	0.054	0.0601	0.0691	<0.1	<0.1	<0.1	<0.100	<0.100	<0.100	0.164	<0.0100	0.081	0.080	0.110	0.072	0.100	0.079	0.13	0.1	0.089	0.074	0.085	2	--	0.1
Cadmium, as Cd, mg/L	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0050	<0.005	<0.0100	<0.005	< 0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.00050	<0.00050	0.00175	--	0.001
Chromium, as Cr, mg/L	<0.010	<0.010	<0.010	<0.010	<0.01	<0.01	<0.02	<0.0100	<0.0100	<0.0100	0.0259	<0.0100	<0.010	< 0.010	0.012	<0.010	<0.010	<0.010	<0.010	<0.010	0.015	<0.010	<0.010	0.05	--	0.01
Copper, as Cu, mg/L	<0.005	<0.005	<0.005	<0.005	<0.02	<0.02	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.010	< 0.010	< 0.010	<0.020	<0.020	<0.020	<0.020	<0.020	0.32	0.0021	0.001	1	--	0.01
Iron, as Fe, mg/L	0.832	4.24	0.68	0.85	0.25	0.258	0.198	0.230	0.289	0.310	4.33	0.190	0.390	0.68	5.50	2.30	8.40	0.47	1	0.82	5.7	0.33	0.21	0.3	--	0.3
Lead, as Pb, mg/L	0.02	<0.020	<0.020	<0.020	<0.01	<0.01	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.005	< 0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.015	--	0.01
Manganese, as Mn, mg/L	0.123	0.171	0.172	0.016	0.035	0.0109	0.066	0.0134	0.0231	0.0158	2.29	0.275	0.500	0.280	2.000	0.068	0.800	0.180	0.1	0.04	0.077	0.015	0.011	0.05	--	0.05
Mercury, as Hg, mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00105	--	0.0002
Selenium, as Se, mg/L	<0.100	<0.100	<0.100	<0.100	<0.01	<0.01	<0.01	<0.0100	0.0114	<0.0100	<0.0100	<0.0100	<0.010	< 0.010	< 0.010	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.0010	0.00051	0.05	--	0.01
Silver, as Ag, mg/L	<0.015	<0.015	<0.015	<0.015	<0.01	<0.02	<0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.005	< 0.0050	< 0.0050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.0033	<0.010	0.0175	--	0.01
Vanadium, mg/L	NA	NA	NA	NA	NA	<0.05	<0.05	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.010	< 0.010	< 0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NE	0.0035	0.025
Zinc, as Zn, mg/L	<0.010	0.015	<0.100	<0.01	<0.02	<0.02	<0.02	<0.0200	<0.0200	<0.0200	0.0244	<0.0200	<0.030	< 0.030	< 0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.4	0.017	0.01	1.05	--	0.01

NOTES:
< Symbol = Below Laboratory Detectable Limits
2L Std - Title 15, North Carolina Administrative Code, Subchapter 2L, class GA groundwater standard.
GWP Std - Ground Water Protection Standard (used when no 2L Standards are established)
SWSL - Solid Waste Section Limits - target laboratory method detection limits
Bold text denotes results that exceed NC ground-water standards
Data is reported in milligrams per liter (mg/L) unless otherwise noted
NA = Not Analyzed
NE = Not Established
Refer to laboratory reports for actual sample dates

PREPARED BY: BWJ 10/2/08
CHECKED BY: AEG 10/3/08
h:\CLIENTS\IP\LANDFILL\08DATA\08Sept TBLS.XLS

TABLE 3
NEW LANDFILL CELL 1 ANALYSIS RESULTS
INTERNATIONAL PAPER
RIEGELWOOD, NORTH CAROLINA
MACTEC JOB NO. 6550-08-0479

		Client Sample ID	Primary Leachate Collection System		Secondary Leachate Collection System		Under-Drain Leachate Collection System		*2L Standard*	*GWP Standard*	*SWSL*
		Collect Date	9/11/08		9/11/08		9/11/08				
Method	Parameter	Units	Value	Q	Value	Q	Value	Q			
SM5210B	BOD	mg/l	21	J4	12	J4	9.1	J4	NE	NE	NE
410.4	COD	mg/l	370		100		230		NE	NE	NE
5320B	TOX	mg/l	0.097	J	0.059	J	0.52	J	NE	NE	NE
5310B	TOC	mg/l	120		46		95		NE	NE	NE
2540C	Dissolved Solids	mg/l	3200		2100		2800		500	--	NE
4500H-B	pH	su	6.8	T8	6.8	T8	6.9	T8	6.5-8.5	--	NE
120.1	Specific Conductance	umhos/cm	4100		3100		4100		NE	NE	NE
300	Sulfate	mg/l	410		190		130		250	--	250
300	Chloride	mg/l	96		57		230		250	--	NE
300	Fluoride	mg/l	<0.10		0.72		<0.10		2	--	2
300	Nitrate	mg/l	<0.10		0.049	J	0.021	J	10	--	10
300	Phosphate,Ortho*	mg/l	<0.25	O	2		<0.25	O	NE	NE	NE
6020	Arsenic	mg/l	0.019		0.00078	J	0.0034		0.05	--	0.01
6010B	Barium	mg/l	0.2		0.08		0.12		2	--	0.1
6020	Cadmium	mg/l	<0.00050		<0.00050		<0.00050		0.00175	--	0.001
6010B	Chromium	mg/l	0.018		0.013		0.029		0.05	--	0.01
6020	Copper	mg/l	0.0037		0.00051	J	0.00096	J	1	--	0.01
6010B	Iron	mg/l	7.3		1.1		11		0.3	--	0.3
6010B	Lead	mg/l	<0.0050		<0.0050		<0.0050		0.015	--	0.01
6010B	Manganese	mg/l	0.66		0.55		0.76		0.05	--	0.05
7470A	Mercury	mg/l	0.00014	J	<0.00020		<0.00020		0.00105	--	0.0002
6020	Selenium	mg/l	0.002		0.0013		0.0037		0.05	--	0.01
6010B	Silver	mg/l	<0.010		<0.010		<0.010		0.0175	--	0.01
6010B	Vanadium	mg/l	0.13		0.013		0.073		NE	0.0035	0.025
6020	Zinc	mg/l	0.052		0.011		0.018		1.05	--	0.01

Notes

Samples were collected on 09/11/07.

A less than symbol (<) indicates the parameter was not detected above laboratory quantitation limits.

2L Standard - 15A NCAC 2L Groundwater Standards

GWP Standard - Ground Water Protection Standard (used when no 2L Standards are established)

SWSL - Solid Waste Section Limits

Bold values indicate concentrations in excess of N.C. Ground-Water Standards

NE = Not Established

Shaded cells with no bold are laboratory detection limits above the groundwater Standards

PREPARED BY: BWJ 10/2/08

CHECKED BY: AEG 10/3/08

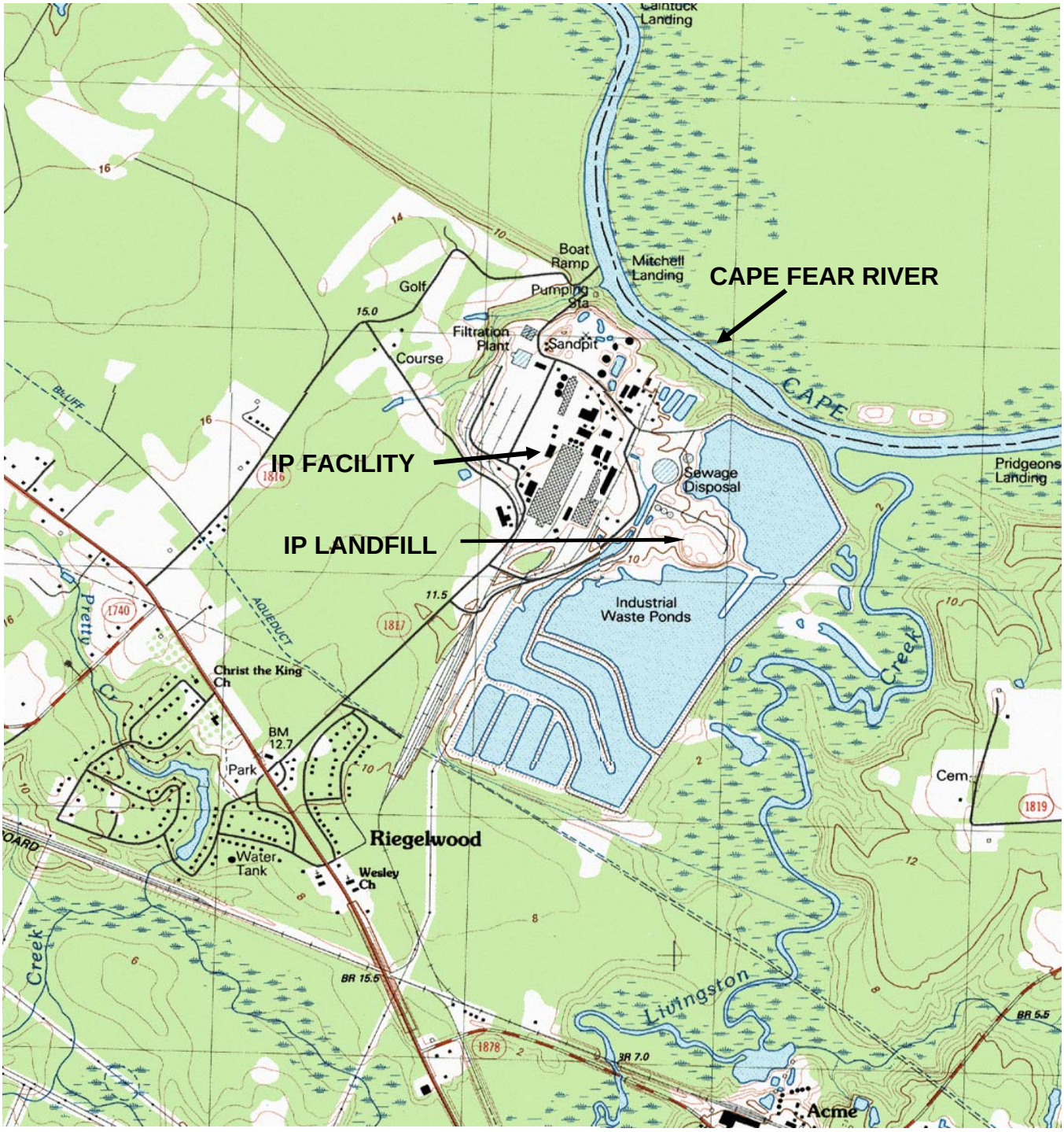
h:\CLIENTS\IP\LANDFILL\08DATA\08Sept TBLS.XLS

Qualifiers (Q):

T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.
J4	The associated batch QC was outside the established quality control range for accuracy.
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

ESC Note: Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

FIGURES



0 2000' 4000'

APPROX. SCALE IN FEET

MACTEC
ENGINEERING & CONSULTING SERVICES, INC.
5710 OLEANDER DRIVE, SUITE 110
WILMINGTON, NC 28403
PHONE (910) 452-1185
FAX (910) 791-1338

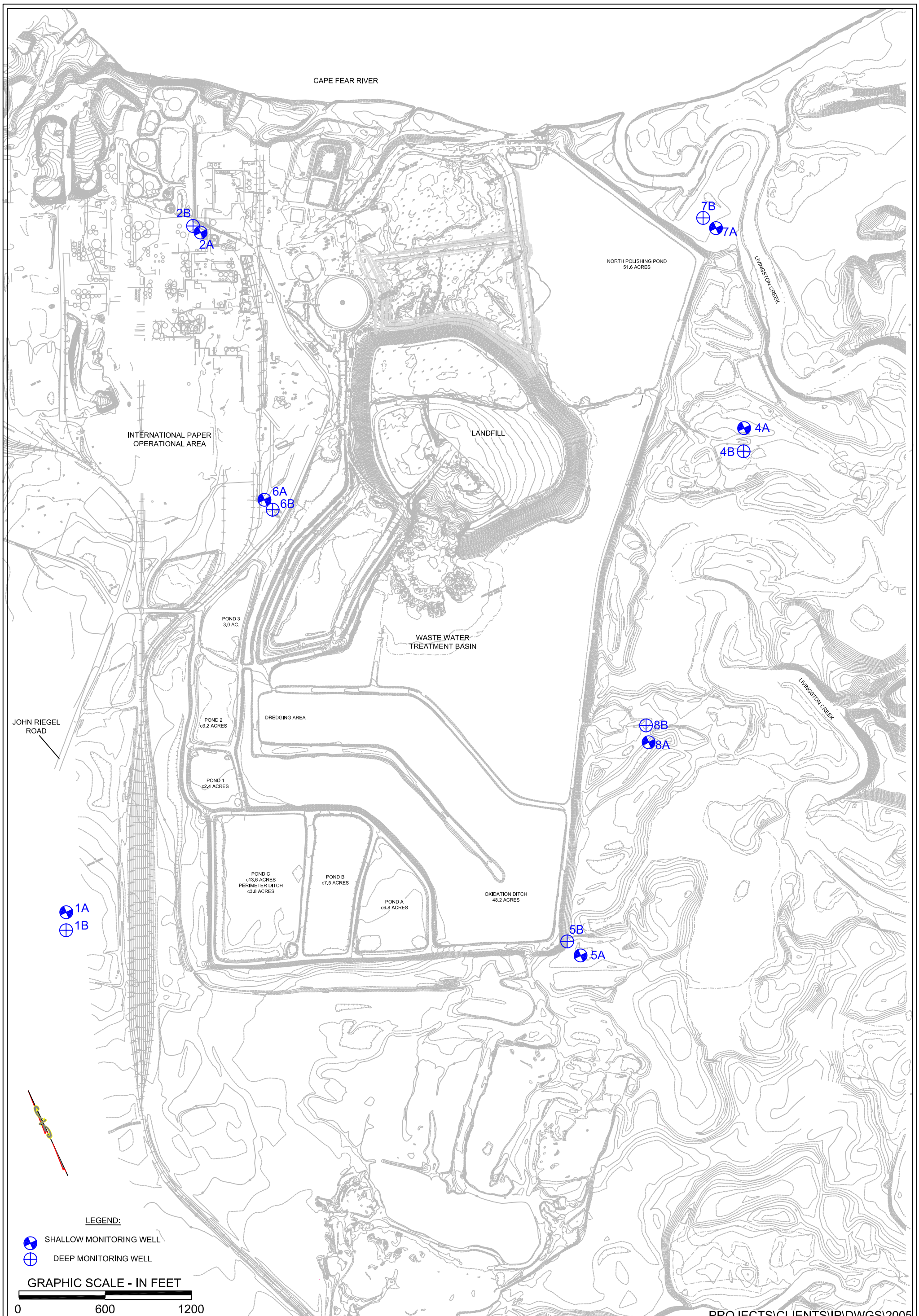
TOPOGRAPHIC SITE MAP

INTERNATIONAL PAPER

REIGLEWOOD, NC

USGS - ACME TOPOGRAPHIC MAP, 1984

DRAWN: WBM	JOB #: 6550-08-0479
APPROVAL:	DATE:
SCALE: AS SHOWN	FIG. NO. 1



SITE MAP
LANDFILL COMPLIANCE MONITORING
INTERNATIONAL PAPER, RIEGELWOOD MILL
RIEGELWOOD, NORTH CAROLINA

MACTEC
5710 OLEANER DRIVE
SUITE 110
WILMINGTON, NORTH CAROLINA

DRAWN:	WBM	JOB:	6550-05-0250
APPROVAL:		DATE:	
SCALE:	AS SHOWN	FIG:	2

APPENDIX A

ENVIRONMENTAL
SCIENCE CORP.

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Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Mr. B. Walker Jones
MACTEC - Wilmington, NC
5710 Oleander Drive, Suite 110

Wilmington, NC 28403

Report Summary

Friday September 19, 2008

Report Number: L364683
Samples Received: 09/12/08
Client Project: 6550-08-0479 TASK02

Description: IP Landfill

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jimmy Hunt

Jimmy Hunt, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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ENVIRONMENTAL
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REPORT OF ANALYSIS

Mr. B. Walker Jones
MACTEC - Wilmington, NC
5710 Oleander Drive, Suite 110
Wilmington, NC 28403

September 19, 2008

ESC Sample # : L364683-01

Date Received : September 12, 2008
Description : IP Landfill

Site ID :

Sample ID : MW-1A

Project # : 6550-08-0479 TASK02

Collected By : B. Mabie
Collection Date : 09/11/08 12:55

Parameter	Result	MDL	RDL	Units	Method	Date	Dil.	SWSL
Chloride	14000	220	1000	ug/l	9056	09/12/08	1	
Fluoride	U	32.	100	ug/l	9056	09/12/08	1	2000
Nitrate	U	15.	100	ug/l	9056	09/12/08	1	10000
Sulfate	42000	170	5000	ug/l	9056	09/12/08	1	250000
BOD	U	1600	5000	ug/l	SM5210B	09/12/08	1	
COD	U	2700	20000	ug/l	410.4	09/19/08	1	
pH	4.6			su	9040C	09/14/08	1	
Specific Conductance	160			umhos/cm	9050A	09/15/08	1	
TOC (Total Organic Carbon)	2700	310	1000	ug/l	9060A	09/17/08	1	
TOX	26.	4.3	100	ug/l	9020	09/18/08	1	
Dissolved Solids	74000	3300	10000	ug/l	2540C	09/17/08	1	
Arsenic	0.28	0.22	1.0	ug/l	6020	09/15/08	1	10
Cadmium	U	0.15	0.50	ug/l	6020	09/15/08	1	1
Copper	U	0.48	1.0	ug/l	6020	09/15/08	1	10
Selenium	0.81	0.32	1.0	ug/l	6020	09/15/08	1	10
Zinc	25.	3.3	10.	ug/l	6020	09/15/08	1	10
Mercury	U	0.044	0.20	ug/l	7470A	09/17/08	1	.2
Barium	120	1.1	5.0	ug/l	6010B	09/17/08	1	100
Chromium	U	2.0	10.	ug/l	6010B	09/17/08	1	10
Iron	1400	24.	100	ug/l	6010B	09/17/08	1	300
Lead	U	1.9	5.0	ug/l	6010B	09/17/08	1	10
Manganese	13.	1.1	10.	ug/l	6010B	09/17/08	1	50
Silver	U	3.2	10.	ug/l	6010B	09/17/08	1	10
Vanadium	13.	1.9	10.	ug/l	6010B	09/17/08	1	25

U = ND (Not Detected)
SWSL = Solid Waste Section Limit
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.
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.
Reported: 09/19/08 16:54 Printed: 09/19/08 16:55
L364683-01 (PH) - 4.6@20.2c

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SCIENCE CORP.

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Mt. Juliet, TN 37122
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Est. 1970

REPORT OF ANALYSIS

Mr. B. Walker Jones
MACTEC - Wilmington, NC
5710 Oleander Drive, Suite 110
Wilmington, NC 28403

September 19, 2008

ESC Sample # : L364683-02

Date Received : September 12, 2008
Description : IP Landfill

Site ID :

Sample ID : MW-1B

Project # : 6550-08-0479 TASK02

Collected By : B. Mabie
Collection Date : 09/11/08 12:50

Parameter	Result	MDL	RDL	Units	Method	Date	Dil.	SWSL
Chloride	5000	220	1000	ug/l	9056	09/12/08	1	
Fluoride	140	32.	100	ug/l	9056	09/12/08	1	2000
Nitrate	150	15.	100	ug/l	9056	09/12/08	1	10000
Sulfate	37000	170	5000	ug/l	9056	09/12/08	1	250000
BOD	U	1600	5000	ug/l	SM5210B	09/12/08	1	
COD	U	2700	20000	ug/l	410.4	09/19/08	1	
pH	7.2			su	9040C	09/14/08	1	
Specific Conductance	480			umhos/cm	9050A	09/15/08	1	
TOC (Total Organic Carbon)	4000	310	1000	ug/l	9060A	09/17/08	1	
TOX	33.	4.3	100	ug/l	9020	09/18/08	1	
Dissolved Solids	280000	3300	10000	ug/l	2540C	09/17/08	1	
Arsenic	1.8	0.22	1.0	ug/l	6020	09/15/08	1	10
Cadmium	U	0.15	0.50	ug/l	6020	09/15/08	1	1
Copper	U	0.48	1.0	ug/l	6020	09/15/08	1	10
Selenium	0.39	0.32	1.0	ug/l	6020	09/15/08	1	10
Zinc	U	3.3	10.	ug/l	6020	09/15/08	1	10
Mercury	U	0.044	0.20	ug/l	7470A	09/17/08	1	.2
Barium	22.	1.1	5.0	ug/l	6010B	09/17/08	1	100
Chromium	U	2.0	10.	ug/l	6010B	09/17/08	1	10
Iron	1400	24.	100	ug/l	6010B	09/17/08	1	300
Lead	U	1.9	5.0	ug/l	6010B	09/17/08	1	10
Manganese	41.	1.1	10.	ug/l	6010B	09/17/08	1	50
Silver	U	3.2	10.	ug/l	6010B	09/17/08	1	10
Vanadium	U	1.9	10.	ug/l	6010B	09/17/08	1	25

U = ND (Not Detected)
SWSL = Solid Waste Section Limit
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)
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L364683-02 (PH) - 7.2@20.6c

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REPORT OF ANALYSIS

Mr. B. Walker Jones
MACTEC - Wilmington, NC
5710 Oleander Drive, Suite 110
Wilmington, NC 28403

September 19, 2008

ESC Sample # : L364683-03

Date Received : September 12, 2008
Description : IP Landfill

Site ID :

Sample ID : MW-4A

Project # : 6550-08-0479 TASK02

Collected By : B. Mabie
Collection Date : 09/11/08 10:45

Parameter	Result	MDL	RDL	Units	Method	Date	Dil.	SWSL
Chloride	14000	220	1000	ug/l	9056	09/12/08	1	
Fluoride	81.	32.	100	ug/l	9056	09/12/08	1	2000
Nitrate	18.	15.	100	ug/l	9056	09/12/08	1	10000
Sulfate	43000	170	5000	ug/l	9056	09/12/08	1	250000
BOD	U	1600	5000	ug/l	SM5210B	09/12/08	1	
COD	13000	2700	20000	ug/l	410.4	09/19/08	1	
pH	4.5			su	9040C	09/15/08	1	
Specific Conductance	160			umhos/cm	9050A	09/15/08	1	
TOC (Total Organic Carbon)	7800	310	1000	ug/l	9060A	09/17/08	1	
TOX	48.	4.3	100	ug/l	9020	09/18/08	1	
Dissolved Solids	95000	3300	10000	ug/l	2540C	09/15/08	1	
Arsenic	U	0.22	1.0	ug/l	6020	09/15/08	1	10
Cadmium	0.22	0.15	0.50	ug/l	6020	09/15/08	1	1
Copper	U	0.48	1.0	ug/l	6020	09/15/08	1	10
Selenium	0.69	0.32	1.0	ug/l	6020	09/15/08	1	10
Zinc	6.4	3.3	10.	ug/l	6020	09/15/08	1	10
Mercury	U	0.044	0.20	ug/l	7470A	09/17/08	1	.2
Barium	47.	1.1	5.0	ug/l	6010B	09/17/08	1	100
Chromium	U	2.0	10.	ug/l	6010B	09/17/08	1	10
Iron	700	24.	100	ug/l	6010B	09/17/08	1	300
Lead	U	1.9	5.0	ug/l	6010B	09/17/08	1	10
Manganese	24.	1.1	10.	ug/l	6010B	09/17/08	1	50
Silver	U	3.2	10.	ug/l	6010B	09/17/08	1	10
Vanadium	U	1.9	10.	ug/l	6010B	09/17/08	1	25

U = ND (Not Detected)
SWSL = Solid Waste Section Limit
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)
Note:
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L364683-03 (PH) - 4.5@18.8c

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REPORT OF ANALYSIS

Mr. B. Walker Jones
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5710 Oleander Drive, Suite 110
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September 19, 2008

ESC Sample # : L364683-04

Date Received : September 12, 2008
Description : IP Landfill

Site ID :

Sample ID : MW-5A

Project # : 6550-08-0479 TASK02

Collected By : B. Mabie
Collection Date : 09/11/08 11:35

Parameter	Result	MDL	RDL	Units	Method	Date	Dil.	SWSL
Chloride	130000	220	1000	ug/l	9056	09/12/08	1	
Fluoride	110	32.	100	ug/l	9056	09/12/08	1	2000
Nitrate	240	15.	100	ug/l	9056	09/12/08	1	10000
Sulfate	3600	170	5000	ug/l	9056	09/12/08	1	250000
BOD	9600	1600	5000	ug/l	SM5210B	09/12/08	1	
COD	66000	2700	20000	ug/l	410.4	09/19/08	1	
pH	7.0			su	9040C	09/15/08	1	
Specific Conductance	1700			umhos/cm	9050A	09/15/08	1	
TOC (Total Organic Carbon)	35000	310	1000	ug/l	9060A	09/17/08	1	
TOX	460	43.	1000	ug/l	9020	09/18/08	10	
Dissolved Solids	1000000	3300	10000	ug/l	2540C	09/15/08	1	
Arsenic	0.66	0.22	1.0	ug/l	6020	09/15/08	1	10
Cadmium	U	0.15	0.50	ug/l	6020	09/15/08	1	1
Copper	0.90	0.48	1.0	ug/l	6020	09/15/08	1	10
Selenium	1.4	0.32	1.0	ug/l	6020	09/15/08	1	10
Zinc	8.4	3.3	10.	ug/l	6020	09/15/08	1	10
Mercury	U	0.044	0.20	ug/l	7470A	09/17/08	1	.2
Barium	120	1.1	5.0	ug/l	6010B	09/17/08	1	100
Chromium	U	2.0	10.	ug/l	6010B	09/17/08	1	10
Iron	2400	24.	100	ug/l	6010B	09/17/08	1	300
Lead	U	1.9	5.0	ug/l	6010B	09/17/08	1	10
Manganese	180	1.1	10.	ug/l	6010B	09/17/08	1	50
Silver	U	3.2	10.	ug/l	6010B	09/17/08	1	10
Vanadium	7.7	1.9	10.	ug/l	6010B	09/17/08	1	25

U = ND (Not Detected)
SWSL = Solid Waste Section Limit
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)
Note:
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L364683-04 (TOX) - diluted, breakthrough at 1x
L364683-04 (PH) - 7.0@17.6c

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REPORT OF ANALYSIS

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5710 Oleander Drive, Suite 110
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September 19, 2008

ESC Sample # : L364683-05

Date Received : September 12, 2008
Description : IP Landfill

Site ID :

Sample ID : MW-7A

Project # : 6550-08-0479 TASK02

Collected By : B. Mabie
Collection Date : 09/11/08 10:15

Parameter	Result	MDL	RDL	Units	Method	Date	Dil.	SWSL
Chloride	160000	220	1000	ug/l	9056	09/12/08	1	
Fluoride	180	32.	100	ug/l	9056	09/12/08	1	2000
Nitrate	270	15.	100	ug/l	9056	09/12/08	1	10000
Sulfate	120000	170	5000	ug/l	9056	09/13/08	1	250000
BOD	11000	1600	5000	ug/l	SM5210B	09/12/08	1	
COD	25000	2700	20000	ug/l	410.4	09/19/08	1	
pH	6.5			su	9040C	09/15/08	1	
Specific Conductance	1200			umhos/cm	9050A	09/15/08	1	
TOC (Total Organic Carbon)	24000	310	1000	ug/l	9060A	09/17/08	1	
TOX	820	43.	1000	ug/l	9020	09/18/08	10	
Dissolved Solids	740000	3300	10000	ug/l	2540C	09/15/08	1	
Arsenic	3.0	0.22	1.0	ug/l	6020	09/15/08	1	10
Cadmium	U	0.15	0.50	ug/l	6020	09/15/08	1	1
Copper	1.4	0.48	1.0	ug/l	6020	09/15/08	1	10
Selenium	0.81	0.32	1.0	ug/l	6020	09/15/08	1	10
Zinc	9.3	3.3	10.	ug/l	6020	09/15/08	1	10
Mercury	U	0.044	0.20	ug/l	7470A	09/17/08	1	.2
Barium	71.	1.1	5.0	ug/l	6010B	09/17/08	1	100
Chromium	U	2.0	10.	ug/l	6010B	09/17/08	1	10
Iron	4400	24.	100	ug/l	6010B	09/17/08	1	300
Lead	U	1.9	5.0	ug/l	6010B	09/17/08	1	10
Manganese	94.	1.1	10.	ug/l	6010B	09/17/08	1	50
Silver	U	3.2	10.	ug/l	6010B	09/17/08	1	10
Vanadium	4.1	1.9	10.	ug/l	6010B	09/17/08	1	25

U = ND (Not Detected)
SWSL = Solid Waste Section Limit
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)
Note:
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L364683-05 (PH) - 6.5@18.4c
L364683-05 (TOX) - diluted, breakthrough at 1x

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REPORT OF ANALYSIS

Mr. B. Walker Jones
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5710 Oleander Drive, Suite 110
Wilmington, NC 28403

September 19, 2008

ESC Sample # : L364683-06

Date Received : September 12, 2008
Description : IP Landfill

Site ID :

Sample ID : MW-8A

Project # : 6550-08-0479 TASK02

Collected By : B. Mabie
Collection Date : 09/11/08 11:15

Parameter	Result	MDL	RDL	Units	Method	Date	Dil.	SWSL
Chloride	2000	220	1000	ug/l	9056	09/12/08	1	
Fluoride	190	32.	100	ug/l	9056	09/12/08	1	2000
Nitrate	U	15.	100	ug/l	9056	09/12/08	1	10000
Sulfate	89000	170	5000	ug/l	9056	09/12/08	1	250000
BOD	U	1600	5000	ug/l	SM5210B	09/12/08	1	
COD	5900	2700	20000	ug/l	410.4	09/19/08	1	
pH	6.6			su	9040C	09/15/08	1	
Specific Conductance	770			umhos/cm	9050A	09/15/08	1	
TOC (Total Organic Carbon)	6200	310	1000	ug/l	9060A	09/17/08	1	
TOX	18.	4.3	100	ug/l	9020	09/18/08	1	
Dissolved Solids	510000	3300	10000	ug/l	2540C	09/15/08	1	
Arsenic	0.34	0.22	1.0	ug/l	6020	09/15/08	1	10
Cadmium	U	0.15	0.50	ug/l	6020	09/15/08	1	1
Copper	1.0	0.48	1.0	ug/l	6020	09/15/08	1	10
Selenium	0.51	0.32	1.0	ug/l	6020	09/15/08	1	10
Zinc	10.	3.3	10.	ug/l	6020	09/15/08	1	10
Mercury	U	0.044	0.20	ug/l	7470A	09/17/08	1	.2
Barium	85.	1.1	5.0	ug/l	6010B	09/17/08	1	100
Chromium	U	2.0	10.	ug/l	6010B	09/17/08	1	10
Iron	210	24.	100	ug/l	6010B	09/17/08	1	300
Lead	U	1.9	5.0	ug/l	6010B	09/17/08	1	10
Manganese	11.	1.1	10.	ug/l	6010B	09/17/08	1	50
Silver	U	3.2	10.	ug/l	6010B	09/17/08	1	10
Vanadium	U	1.9	10.	ug/l	6010B	09/17/08	1	25

U = ND (Not Detected)
SWSL = Solid Waste Section Limit
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)
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L364683-06 (PH) - 6.6@18.3c

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REPORT OF ANALYSIS

Mr. B. Walker Jones
MACTEC - Wilmington, NC
5710 Oleander Drive, Suite 110
Wilmington, NC 28403

September 19, 2008

ESC Sample # : L364683-07

Date Received : September 12, 2008
Description : IP Landfill

Site ID :

Sample ID : PRIMARY

Project # : 6550-08-0479 TASK02

Collected By : B. Mabie
Collection Date : 09/11/08 12:15

Parameter	Result	MDL	RDL	Units	Method	Date	Dil.	SWSL
Chloride	96000	220	1000	ug/l	9056	09/12/08	1	
Fluoride	U	32.	100	ug/l	9056	09/12/08	1	2000
Nitrate	U	15.	100	ug/l	9056	09/12/08	1	10000
Sulfate	410000	830	25000	ug/l	9056	09/13/08	5	250000
BOD	21000	1600	5000	ug/l	SM5210B	09/12/08	1	
COD	370000	2700	20000	ug/l	410.4	09/19/08	1	
pH	6.8			su	9040C	09/14/08	1	
Phosphate,Ortho	U	41.	250	ug/l	4500P-E	09/12/08	10	
Specific Conductance	4100			umhos/cm	9050A	09/15/08	1	
TOC (Total Organic Carbon)	120000	3100	10000	ug/l	9060A	09/17/08	10	
TOX	97.	4.3	100	ug/l	9020	09/18/08	1	
Dissolved Solids	3200000	3300	10000	ug/l	2540C	09/17/08	1	
Arsenic	19.	0.22	1.0	ug/l	6020	09/15/08	1	10
Cadmium	U	0.15	0.50	ug/l	6020	09/15/08	1	1
Copper	3.7	0.48	1.0	ug/l	6020	09/15/08	1	10
Selenium	2.0	0.32	1.0	ug/l	6020	09/15/08	1	10
Zinc	52.	3.3	10.	ug/l	6020	09/15/08	1	10
Mercury	0.14	0.044	0.20	ug/l	7470A	09/17/08	1	.2
Barium	200	1.1	5.0	ug/l	6010B	09/17/08	1	100
Chromium	18.	2.0	10.	ug/l	6010B	09/17/08	1	10
Iron	7300	24.	100	ug/l	6010B	09/17/08	1	300
Lead	U	1.9	5.0	ug/l	6010B	09/17/08	1	10
Manganese	660	1.1	10.	ug/l	6010B	09/17/08	1	50
Silver	U	3.2	10.	ug/l	6010B	09/17/08	1	10
Vanadium	130	1.9	10.	ug/l	6010B	09/17/08	1	25

U = ND (Not Detected)
SWSL = Solid Waste Section Limit
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)
Note:
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L364683-07 (PORTHO) - diluted due to sample color
L364683-07 (PH) - 6.8@20.2c

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REPORT OF ANALYSIS

Mr. B. Walker Jones
MACTEC - Wilmington, NC
5710 Oleander Drive, Suite 110
Wilmington, NC 28403

September 19, 2008

ESC Sample # : L364683-08

Date Received : September 12, 2008
Description : IP Landfill

Site ID :

Sample ID : SECONDARY

Project # : 6550-08-0479 TASK02

Collected By : B. Mabie
Collection Date : 09/11/08 12:30

Parameter	Result	MDL	RDL	Units	Method	Date	Dil.	SWSL
Chloride	57000	220	1000	ug/l	9056	09/12/08	1	
Fluoride	720	32.	100	ug/l	9056	09/12/08	1	2000
Nitrate	49.	15.	100	ug/l	9056	09/12/08	1	10000
Sulfate	190000	330	10000	ug/l	9056	09/13/08	2	250000
BOD	12000	1600	5000	ug/l	SM5210B	09/12/08	1	
COD	100000	2700	20000	ug/l	410.4	09/19/08	1	
pH	6.8			su	9040C	09/14/08	1	
Phosphate,Ortho	2000	21.	120	ug/l	4500P-E	09/12/08	5	
Specific Conductance	3100			umhos/cm	9050A	09/15/08	1	
TOC (Total Organic Carbon)	46000	3100	10000	ug/l	9060A	09/17/08	10	
TOX	59.	4.3	100	ug/l	9020	09/18/08	1	
Dissolved Solids	2100000	3300	10000	ug/l	2540C	09/17/08	1	
Arsenic	0.78	0.22	1.0	ug/l	6020	09/15/08	1	10
Cadmium	U	0.15	0.50	ug/l	6020	09/15/08	1	1
Copper	0.51	0.48	1.0	ug/l	6020	09/15/08	1	10
Selenium	1.3	0.32	1.0	ug/l	6020	09/15/08	1	10
Zinc	11.	3.3	10.	ug/l	6020	09/15/08	1	10
Mercury	U	0.044	0.20	ug/l	7470A	09/17/08	1	.2
Barium	80.	1.1	5.0	ug/l	6010B	09/17/08	1	100
Chromium	13.	2.0	10.	ug/l	6010B	09/17/08	1	10
Iron	1100	24.	100	ug/l	6010B	09/17/08	1	300
Lead	U	1.9	5.0	ug/l	6010B	09/17/08	1	10
Manganese	550	1.1	10.	ug/l	6010B	09/17/08	1	50
Silver	U	3.2	10.	ug/l	6010B	09/17/08	1	10
Vanadium	13.	1.9	10.	ug/l	6010B	09/17/08	1	25

U = ND (Not Detected)
SWSL = Solid Waste Section Limit
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)
Note:
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L364683-08 (PH) - 6.8@20.3c

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REPORT OF ANALYSIS

Mr. B. Walker Jones
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5710 Oleander Drive, Suite 110
Wilmington, NC 28403

September 19, 2008

ESC Sample # : L364683-09

Date Received : September 12, 2008
Description : IP Landfill

Site ID :

Sample ID : UNDERDRAIN

Project # : 6550-08-0479 TASK02

Collected By : B. Mabie
Collection Date : 09/11/08 12:40

Parameter	Result	MDL	RDL	Units	Method	Date	Dil.	SWSL
Chloride	230000	440	2000	ug/l	9056	09/13/08	2	
Fluoride	U	32.	100	ug/l	9056	09/12/08	1	2000
Nitrate	21.	15.	100	ug/l	9056	09/12/08	1	10000
Sulfate	130000	170	5000	ug/l	9056	09/12/08	1	250000
BOD	9100	1600	5000	ug/l	SM5210B	09/12/08	1	
COD	230000	2700	20000	ug/l	410.4	09/19/08	1	
pH	6.9			su	9040C	09/14/08	1	
Phosphate,Ortho	U	41.	250	ug/l	4500P-E	09/12/08	10	
Specific Conductance	4100			umhos/cm	9050A	09/15/08	1	
TOC (Total Organic Carbon)	95000	310	1000	ug/l	9060A	09/17/08	1	
TOX	520	43.	1000	ug/l	9020	09/18/08	10	
Dissolved Solids	2800000	3300	10000	ug/l	2540C	09/17/08	1	
Arsenic	3.4	0.22	1.0	ug/l	6020	09/15/08	1	10
Cadmium	U	0.15	0.50	ug/l	6020	09/15/08	1	1
Copper	0.96	0.48	1.0	ug/l	6020	09/15/08	1	10
Selenium	3.7	0.32	1.0	ug/l	6020	09/15/08	1	10
Zinc	18.	3.3	10.	ug/l	6020	09/15/08	1	10
Mercury	U	0.044	0.20	ug/l	7470A	09/17/08	1	.2
Barium	120	1.1	5.0	ug/l	6010B	09/17/08	1	100
Chromium	29.	2.0	10.	ug/l	6010B	09/17/08	1	10
Iron	11000	24.	100	ug/l	6010B	09/17/08	1	300
Lead	U	1.9	5.0	ug/l	6010B	09/17/08	1	10
Manganese	760	1.1	10.	ug/l	6010B	09/17/08	1	50
Silver	U	3.2	10.	ug/l	6010B	09/17/08	1	10
Vanadium	73.	1.9	10.	ug/l	6010B	09/17/08	1	25

U = ND (Not Detected)
SWSL = Solid Waste Section Limit
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)
Note:
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Reported: 09/19/08 16:54 Printed: 09/19/08 16:55
L364683-09 (TOX) - diluted, breakthrough at 1x
L364683-09 (PH) - 6.9@20.6c
L364683-09 (PORTHO) - diluted due to sample color

Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L364683-01	pH	T8
	Arsenic	J
	Selenium	J
	BOD	J4
	Dissolved Solids	J3
	TOX	JP1
L364683-02	pH	T8
	Selenium	J
	BOD	J4
	TOX	J
L364683-03	pH	T8
	Cadmium	J
	Selenium	J
	Zinc	J
	BOD	J4
	Fluoride	J
	Nitrate	J
	COD	J
	TOX	J
L364683-04	pH	T8
	Vanadium	J
	Arsenic	J
	Copper	J
	Zinc	J
	BOD	J4
	Sulfate	J
	TOX	J
L364683-05	pH	T8
	Vanadium	J
	Selenium	J
	Zinc	J
	BOD	J4
	TOX	J
L364683-06	pH	T8
	Arsenic	J
	Selenium	J
	BOD	J4
	COD	J
	TOX	J
L364683-07	pH	T8
	Mercury	J
	BOD	J4
	TOX	J
	Phosphate,Ortho	O
L364683-08	pH	T8
	Arsenic	J
	Copper	J
	BOD	J4
	Nitrate	J
	TOX	J
L364683-09	pH	T8
	Copper	J
	BOD	J4
	Nitrate	J
	TOX	J
	Phosphate,Ortho	O

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
09/19/08 at 16:55:11

TSR Signing Reports: 350
R5 - Desired TAT

EDD=SWSL; All invoices need PO number; No "E" qualifiers; Send blank chains with kits.

Sample: L364683-01 Account: LAWENGWN Received: 09/12/08 09:00 Due Date: 09/19/08 00:00 RPT Date: 09/19/08 16:54
EDD=SWSL. No 3030C, BODLL per Jimmy; Added PO per Bill Mabie - jeh 9/17/08
Sample: L364683-02 Account: LAWENGWN Received: 09/12/08 09:00 Due Date: 09/19/08 00:00 RPT Date: 09/19/08 16:54
EDD=SWSL. No 3030C, BODLL per Jimmy.
Sample: L364683-03 Account: LAWENGWN Received: 09/12/08 09:00 Due Date: 09/19/08 00:00 RPT Date: 09/19/08 16:54
EDD=SWSL. No 3030C, BODLL per Jimmy.
Sample: L364683-04 Account: LAWENGWN Received: 09/12/08 09:00 Due Date: 09/19/08 00:00 RPT Date: 09/19/08 16:54
EDD=SWSL. No 3030C, BODLL per Jimmy.
Sample: L364683-05 Account: LAWENGWN Received: 09/12/08 09:00 Due Date: 09/19/08 00:00 RPT Date: 09/19/08 16:54
EDD=SWSL. No 3030C, BODLL per Jimmy.
Sample: L364683-06 Account: LAWENGWN Received: 09/12/08 09:00 Due Date: 09/19/08 00:00 RPT Date: 09/19/08 16:54
EDD=SWSL. No 3030C, BODLL per Jimmy.
Sample: L364683-07 Account: LAWENGWN Received: 09/12/08 09:00 Due Date: 09/19/08 00:00 RPT Date: 09/19/08 16:54
EDD=SWSL. No 3030C, BODLL per Jimmy.
Sample: L364683-08 Account: LAWENGWN Received: 09/12/08 09:00 Due Date: 09/19/08 00:00 RPT Date: 09/19/08 16:54
EDD=SWSL. No 3030C, BODLL per Jimmy.
Sample: L364683-09 Account: LAWENGWN Received: 09/12/08 09:00 Due Date: 09/19/08 00:00 RPT Date: 09/19/08 16:54
EDD=SWSL. No 3030C, BODLL per Jimmy.

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September 19, 2008

Laboratory Blank

Analyte	Result	Units	Date Analyzed	Batch
TOX	< .1	mg/l	09/17/08 03:13	WG383032
Phosphate,Ortho	< .025	mg/l	09/12/08 16:29	WG383089
BOD	-0.0100	mg/l	09/12/08 09:15	WG383098
Chloride	< 1	mg/l	09/12/08 11:49	WG383105
Fluoride	< .1	mg/l	09/12/08 11:49	WG383105
Nitrate	< .1	mg/l	09/12/08 11:49	WG383105
Sulfate	< 5	mg/l	09/12/08 11:49	WG383105
Dissolved Solids	< 10	mg/l	09/15/08 14:46	WG383182
Specific Conductance	0.640	umhos/cm	09/15/08 15:00	WG383235
Sulfate	< 5	mg/l	09/13/08 20:15	WG383277
Chloride	< 1	mg/l	09/13/08 15:58	WG383279
Sulfate	< 5	mg/l	09/13/08 15:58	WG383279
Dissolved Solids	< 10	mg/l	09/17/08 09:20	WG383332
pH	6.30	su	09/14/08 19:44	WG383339
Mercury	< .0002	mg/l	09/17/08 12:28	WG383341
Arsenic	< .001	mg/l	09/15/08 15:47	WG383379
Cadmium	< .0005	mg/l	09/15/08 15:47	WG383379
Copper	< .001	mg/l	09/15/08 15:47	WG383379
Selenium	< .001	mg/l	09/15/08 15:47	WG383379
Zinc	< .01	mg/l	09/15/08 15:47	WG383379
pH	6.60	su	09/15/08 12:21	WG383428
Dissolved Solids	< 10	mg/l	09/17/08 09:00	WG383544
TOC (Total Organic Carbon)	< 1	mg/l	09/17/08 13:14	WG383615
Barium	< .005	mg/l	09/17/08 03:26	WG383741
Chromium	< .01	mg/l	09/17/08 03:26	WG383741
Iron	< .1	mg/l	09/17/08 03:26	WG383741
Lead	< .005	mg/l	09/17/08 03:26	WG383741
Manganese	< .01	mg/l	09/17/08 03:26	WG383741
Silver	< .01	mg/l	09/17/08 03:26	WG383741
Vanadium	< .01	mg/l	09/17/08 03:26	WG383741
COD	< 20	mg/l	09/19/08 14:51	WG383991

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
TOX	mg/l	0.0326	0.0260	22.5	20	L364683-01	WG383032
TOX	mg/l	0.0543	0.0590	8.39	20	L364683-08	WG383032
Phosphate,Ortho	mg/l	0.00	0.00	0.00	20	L364683-07	WG383089
BOD	mg/l	0.00	0.00	0.00	10	L364730-01	WG383098
BOD	mg/l	23.4	21.0	10.8	10	L364667-01	WG383098
BOD	mg/l	0.00	0.00	0.00	10	L364683-06	WG383098
BOD	mg/l	10.8	16.0	38.8	10	L364681-01	WG383098

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Analyte	Units	Duplicate Result	Duplicate	RPD	Limit	Ref Samp	Batch
Chloride	mg/l	90.7	90.0	0.775	20	L364653-01	WG383105
Nitrate	mg/l	0.338	0.340	0.590	20	L364666-01	WG383105
Nitrate	mg/l	0.00	0.00	0.00	20	L364721-01	WG383105
Dissolved Solids	mg/l	2220	2300	3.49	5	L364631-07	WG383182
Specific Conductance	umhos	1530	1500	2.05	20	L364425-01	WG383235
Specific Conductance	umhos	1570	1600	2.15	20	L364736-15	WG383235
Sulfate	mg/l	109.	110.	0.913	20	L364725-03	WG383277
Sulfate	mg/l	39.4	40.0	1.51	20	L364940-01	WG383277
Chloride	mg/l	30.4	30.0	1.32	20	L364993-02	WG383279
Chloride	mg/l	0.00	0.00	0.00	20	L364993-08	WG383279
Sulfate	mg/l	8.32	8.30	0.241	20	L364993-02	WG383279
Sulfate	mg/l	0.00	0.00	0.00	20	L364993-08	WG383279
Dissolved Solids	mg/l	39.0	38.0	2.60	5	L364915-05	WG383332
pH	su	7.30	7.20	1.38	20	L364683-02	WG383339
pH	su	8.50	8.50	0.00	20	L364736-09	WG383339
Mercury	mg/l	0.00	0.00	0.00	20	L364683-01	WG383341
Arsenic	mg/l	0.00	0.00	0.00	20	L364869-01	WG383379
Cadmium	mg/l	0.00	0.00	0.00	20	L364869-01	WG383379
Copper	mg/l	0.00	0.00	0.00	20	L364869-01	WG383379
Selenium	mg/l	0.00	0.00	0.00	20	L364869-01	WG383379
Zinc	mg/l	0.00	0.00	0.00	20	L364869-01	WG383379
pH	su	4.70	4.50	4.35	20	L364683-03	WG383428
pH	su	3.50	3.50	0.00	20	L364936-04	WG383428
Dissolved Solids	mg/l	80.0	74.0	7.79	5	L364683-01	WG383544
TOC (Total Organic Carbon)	mg/l	6.52	7.40	12.6	20	L364446-05	WG383615
TOC (Total Organic Carbon)	mg/l	6.32	6.20	1.92	20	L364683-06	WG383615
Barium	mg/l	0.0793	0.0800	0.879	20	L364869-01	WG383741
Chromium	mg/l	0.00	0.00	0.00	20	L364869-01	WG383741
Iron	mg/l	0.00	0.00	0.00	20	L364869-01	WG383741
Lead	mg/l	0.00	0.00	0.00	20	L364869-01	WG383741
Manganese	mg/l	0.0145	0.0140	3.51	20	L364869-01	WG383741
Silver	mg/l	0.00	0.00150	NA	20	L364869-01	WG383741
Vanadium	mg/l	0.00	0.00040	NA	20	L364869-01	WG383741
COD	mg/l	4.94	5.90	17.7	20	L364683-06	WG383991
COD	mg/l	81.0	84.0	3.64	20	L364725-01	WG383991

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
TOX	mg/l	.2	0.217	109.	85-115	WG383032
Phosphate,Ortho	mg/l	.75	0.755	101.	85-115	WG383089
BOD	mg/l	198	127.	64.1	85-115	WG383098
BOD	mg/l	198	140.	70.7	85-115	WG383098
BOD	mg/l	198	160.	80.8	85-115	WG383098

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BOD	mg/l	198	195.	98.5	85-115	WG383098

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Chloride	mg/l	40	37.1	92.8	90-110	WG383105
Fluoride	mg/l	8	7.99	99.9	90-110	WG383105
Nitrate	mg/l	8	7.83	97.9	90-110	WG383105
Sulfate	mg/l	40	37.9	94.8	90-110	WG383105
Dissolved Solids	mg/l	8800	8660	98.5	85-115	WG383182
Specific Conductance	umhos/cm	519	540.	104.	85-115	WG383235
Sulfate	mg/l	40	37.8	94.5	90-110	WG383277
Chloride	mg/l	40	38.2	95.5	90-110	WG383279
Sulfate	mg/l	40	38.8	97.0	90-110	WG383279
Dissolved Solids	mg/l	8800	8530	97.0	85-115	WG383332
pH	su	6.5	6.50	100.	97.19-10	WG383339
Mercury	mg/l	.003	0.00289	96.3	85-115	WG383341
Arsenic	mg/l	.0567	0.0557	98.2	85-115	WG383379
Cadmium	mg/l	.0567	0.0575	101.	85-115	WG383379
Copper	mg/l	.0567	0.0582	103.	85-115	WG383379
Selenium	mg/l	.0567	0.0539	95.1	85-115	WG383379
Zinc	mg/l	.0567	0.0575	101.	85-115	WG383379
pH	su	6.5	6.40	98.5	97.19-10	WG383428
Dissolved Solids	mg/l	8800	8550	97.1	85-115	WG383544
TOC (Total Organic Carbon)	mg/l	75	74.5	99.3	85-115	WG383615
Barium	mg/l	1.13	1.15	102.	85-115	WG383741
Chromium	mg/l	1.13	1.12	99.1	85-115	WG383741
Iron	mg/l	1.13	1.16	103.	85-115	WG383741
Lead	mg/l	1.13	1.16	103.	85-115	WG383741
Manganese	mg/l	1.13	1.14	101.	85-115	WG383741
Silver	mg/l	1.13	1.10	97.3	85-115	WG383741
Vanadium	mg/l	1.13	1.14	101.	85-115	WG383741
COD	mg/l	383	385.	101.	90-110	WG383991

Laboratory Control Sample Duplicate

Analyte	Units	LCSD Res	Ref Res	RPD	Limit	%Rec	Batch
TOX	mg/l	0.216	0.217	0.739	20	108	WG383032
Phosphate,Ortho	mg/l	0.758	0.755	0.397	20	101	WG383089
Chloride	mg/l	37.3	37.1	0.538	20	93	WG383105
Fluoride	mg/l	8.02	7.99	0.375	20	100	WG383105
Nitrate	mg/l	7.89	7.83	0.763	20	99	WG383105
Sulfate	mg/l	38.1	37.9	0.526	20	95	WG383105
Dissolved Solids	mg/l	8680	8660	0.185	20	99	WG383182
Specific Conductance	umhos	540.	540.	0.00	20	104	WG383235
Sulfate	mg/l	37.9	37.8	0.264	20	95	WG383277

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Laboratory Control Sample Duplicate

Analyte	Units	LCSD Res	Ref Res	RPD	Limit	%Rec	Batch
Chloride	mg/l	38.4	38.2	0.522	20	96	WG383279
Sulfate	mg/l	38.9	38.8	0.257	20	97	WG383279
Dissolved Solids	mg/l	8620	8530	1.03	20	98	WG383332
pH	su	6.50	6.50	0.00	20	100	WG383339
pH	su	6.40	6.40	0.00	20	98	WG383428
Dissolved Solids	mg/l	8570	8550	0.234	20	97	WG383544
TOC (Total Organic Carbon)	mg/l	74.0	74.5	0.633	20	99	WG383615
COD	mg/l	376.	385.	2.37	20	98	WG383991

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
TOX	mg/l	0.332	0.0180	.3	105.	80-120	L364683-06	WG383032
Phosphate,Ortho	mg/l	18.8	6.00	.5	102.	80-120	L364586-01	WG383089
Nitrate	mg/l	5.23	0.340	5	97.8	80-120	L364666-03	WG383105
Sulfate	mg/l	70.6	21.0	50	99.2	80-120	L364869-01	WG383277
Chloride	mg/l	55.9	4.50	50	103.	80-120	L364993-01	WG383279
Sulfate	mg/l	49.1	0.00	50	98.2	80-120	L364993-01	WG383279
Mercury	mg/l	0.0027	0.00	.003	91.0	70-130	L364683-01	WG383341
Arsenic	mg/l	0.0540	0.00	.0567	95.2	75-125	L364869-01	WG383379
Cadmium	mg/l	0.0538	0.00	.0567	94.9	75-125	L364869-01	WG383379
Copper	mg/l	0.0530	0.00	.0567	93.5	75-125	L364869-01	WG383379
Selenium	mg/l	0.0514	0.00	.0567	90.7	75-125	L364869-01	WG383379
Zinc	mg/l	0.0558	0.00	.0567	98.4	75-125	L364869-01	WG383379
TOC (Total Organic Carbon)	mg/l	51.3	2.70	50	97.2	80-120	L364683-01	WG383615
Barium	mg/l	1.21	0.0800	1.13	100.	75-125	L364869-01	WG383741
Chromium	mg/l	1.12	0.00	1.13	99.1	75-125	L364869-01	WG383741
Iron	mg/l	1.16	0.00	1.13	103.	75-125	L364869-01	WG383741
Lead	mg/l	1.15	0.00	1.13	102.	75-125	L364869-01	WG383741
Manganese	mg/l	1.17	0.0140	1.13	102.	75-125	L364869-01	WG383741
Silver	mg/l	1.09	0.0015	1.13	96.3	75-125	L364869-01	WG383741
Vanadium	mg/l	1.14	0.0004	1.13	101.	75-125	L364869-01	WG383741
COD	mg/l	392.	0.00	400	98.0	90-110	L364725-03	WG383991

Matrix Spike Duplicate

Analyte	Units	MSD Res	Ref Res	RPD	Limit	%Rec	Ref Samp	Batch
TOX	mg/l	0.338	0.332	1.66	20	107.	L364683-06	WG383032
Phosphate,Ortho	mg/l	18.1	18.8	3.79	20	96.8	L364586-01	WG383089
Nitrate	mg/l	5.29	5.23	1.14	20	99.0	L364666-03	WG383105
Sulfate	mg/l	72.2	70.6	2.24	20	102.	L364869-01	WG383277

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Analyte	Units	Matrix Spike Duplicate MSD Res	Ref Res	RPD	Limit	%Rec	Ref Samp	Batch
Chloride	mg/l	56.7	55.9	1.42	20	104.	L364993-01	WG383279
Sulfate	mg/l	50.2	49.1	2.22	20	100.	L364993-01	WG383279
Mercury	mg/l	0.0027	0.0027	1.45	20	92.3	L364683-01	WG383341
Arsenic	mg/l	0.0549	0.0540	1.65	20	96.8	L364869-01	WG383379
Cadmium	mg/l	0.0547	0.0538	1.66	20	96.5	L364869-01	WG383379
Copper	mg/l	0.0528	0.0530	0.378	20	93.1	L364869-01	WG383379
Selenium	mg/l	0.0527	0.0514	2.50	20	92.9	L364869-01	WG383379
Zinc	mg/l	0.0569	0.0558	1.95	20	100.	L364869-01	WG383379
TOC (Total Organic Carbon)	mg/l	52.1	51.3	1.49	20	98.7	L364683-01	WG383615
Barium	mg/l	1.24	1.21	2.45	20	103.	L364869-01	WG383741
Chromium	mg/l	1.14	1.12	1.77	20	101.	L364869-01	WG383741
Iron	mg/l	1.19	1.16	2.55	20	105.	L364869-01	WG383741
Lead	mg/l	1.17	1.15	1.72	20	104.	L364869-01	WG383741
Manganese	mg/l	1.18	1.17	0.851	20	103.	L364869-01	WG383741
Silver	mg/l	1.10	1.09	0.913	20	97.2	L364869-01	WG383741
Vanadium	mg/l	1.15	1.14	0.873	20	102.	L364869-01	WG383741
COD	mg/l	394.	392.	0.509	5	98.5	L364725-03	WG383991

Batch number /Run number / Sample number cross reference

WG383089: R465444: L364683-07 08 09
WG383105: R465506: L364683-01 02 03 04 05 06 07 08 09
WG383339: R465927: L364683-01 02 07 08 09
WG383182: R466445: L364683-03 04 05 06
WG383428: R466624: L364683-03 04 05 06
WG383235: R466644: L364683-01 02 03 04 05 06 07 08 09
WG383279: R466744: L364683-07 08 09
WG383277: R466924: L364683-05
WG383379: R467305: L364683-01 02 03 04 05 06 07 08 09
WG383332: R468024: L364683-07 08
WG383544: R468066: L364683-01 02 09
WG383098: R468664: L364683-01 02 03 04 05 06 07 08 09
WG383341: R469286: L364683-01 02 03 04 05 06 07 08 09
WG383741: R469404: L364683-01 02 03 04 05 06 07 08 09
WG383615: R469405: L364683-01 02 03 04 05 06 07 08 09
WG383032: R471224: L364683-01 02 03 04 05 06 07 08 09
WG383991: R471504: L364683-01 02 03 04 05 06 07 08 09

* * Calculations are performed prior to rounding of reported values .

ENVIRONMENTAL
SCIENCE CORP.

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Tax I.D. 62-0814289

Est. 1970

MACTEC - Wilmington, NC
Mr. B. Walker Jones
5710 Oleander Drive, Suite 110
Wilmington, NC 28403

Quality Assurance Report
Level II

L364683

September 19, 2008

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

MACTEC - Wilmington, NC

5710 Oleander Drive, Suite 110
Wilmington,NC 28403

Alternate billing information:

Chain of Custody
Page 1 of 4

Prepared by:
ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (800) 767-5859
FAX (615) 758-5859

Report to: Mr. B. Walker Jones
Email: bwjones@mactec.com

Project Description: IP Landfill
City/State Collected: Ridgewood, NC

Phone: (910) 452-1185
FAX: (910) 791-1338
Client Project #: 6550-08-0479 TASK02
Lab Project #: ~~LAWENGWN 6550050311~~

Collected by (print): B. Mabie
Site/Facility ID#:
P.O.#:

Collected by (signature):
Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed: STANDARD
Email? __No __Yes
FAX? __No __Yes

Acctnum: LAWENGWN (lab use only)
Template/Prelogin: T38584/ P255281
Cooler #: 8/2718
Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	BOD 1L-HDPE-NoPres	COD 250mlHDPE-H2SO4	Cl, F, NO3, pH, SO4 125mlHDPE-NoPres	Metals 500mlHDPE-HNO3	PORTHO 250mlHDPE-NoPres	SPCON 250mlHDPE-NoPres	TDS 250mlHDPE-NoPres	TOC 250mlAmb-Septa-HCl	Remarks/Contaminant	Sample # (lab only)
MW-1A	GRAB	GW	—	9.11.08	1255	8	X	X	X	X		X	X	X		L364683-01
MW-1B		GW	—		1250	8	X	X	X	X		X	X	X		-02
MW-4A		GW	—		1045	8	X	X	X	X		X	X	X		-03
MW-5A		GW	—		1135	8	X	X	X	X		X	X	X		-04
MW-7A		GW	—		1015	8	X	X	X	X		X	X	X		-05
MW-8A		GW	—		1115	8	X	X	X	X		X	X	X		-06
PRIMARY		GW	—		1215	9	X	X	X	X	X	X	X	X		-07
SECONDARY		GW	—		1230	9	X	X	X	X	X	X	X	X		-08
UNDERDRAIN		GW	—		1240	9	X	X	X	X	X	X	X	X		-09

*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

Remarks: Metals = As, Hg, Ba, Cd, Cr, Cu, Fe, Pb, Mn, Se, Ag, V, Zn

pH _____ Temp _____
Flow _____ Other _____

9669 7441 0305 / 9669 7441 0327 / 9669 7441 0338 / 9669 7441 0316

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (lab use only) OK
	9.11.08	1630			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 2.3°C Bottles Received: 75	COC Seal Intact: X Y ___ N ___ NA
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) C. Jones	Date: 9.12.08 Time: 0900	pH Checked: L2 NCF:

APPENDIX B

FIELD SAMPLING REPORT

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5710 OLEANDER DRIVE, SUITE 110
WILMINGTON, NC 28403
PHONE (910) 452-1185
FAX (910) 791-1338

JOB NAME: IP - LANDFILL
JOB NUMBER: 6550-08-0479

SAMPLING INFORMATION

SOIL SAMPLING DATA

SAMPLE ID NUMBER: NA HAZARDOUS: UNKNOWN
SAMPLING DATE / TIME: NA / NA
SAMPLER TYPE & MATERIAL: NA
SAMPLE DESCRIPTION: NA

WELL SAMPLING DATA

SAMPLE ID NUMBER: MW-1A HAZARDOUS: UNKNOWN
SAMPLING DATE / TIME: 9/11/2008 / 1255
SAMPLER TYPE & MATERIAL: LOW FLOW PERISTALTIC PUMP & DEDICATED CLEAN TUBING
SAMPLE DESCRIPTION: CLOUDY
TOTAL WELL DEPTH (FT): 29.50 DEPTH TO WATER (FT): 16.37
PURGE & SAMPLE PROCEDURES: Well was purged under low-flow conditions until field parameters stabilized. A quiescent low-flow grab sample was collected the following day (within a 24-hr period of purging).
PURGE DATE: 9/10/2008 START TIME: 1245 END TIME: 1300

LABORATORY CONTAINER INFORMATION

CONTAINER		NUMBER	PRESERVATIVE	COMMENTS		
TYPE	VOLUME		/PREPARATION			
PLASTIC -HDPE	1L	1	No Pres	BOD	SM 5210B	
PLASTIC -HDPE	250 ML	1	H2SO4	COD	410.4	
PLASTIC -HDPE	125 ML	1	No Pres	Cl,F,NO3,Ph,SO4	300	
PLASTIC -HDPE	500 ML	1	HNO3	METALS	7470A/6010B	
PLASTIC -HDPE	250 ML	1	No Pres	SP COND	120.1	
PLASTIC -HDPE	250 ML	1	No Pres	TDS	2540C	
AMBER GLASS	250 ML	1	HCL	TOC	5310B	
AMBER GLASS	1L	1	H2SO4	TOX	5320B	

FIELD MEASUREMENTS

PARAMETER	EQUIP ID	PURGE DATA				SAMPLE DATA
		1st READING	2nd READING	3rd READING	4th READING	
TEMP. (ºC)	HANNA	21.4	20.6	20.5	19.6	20.1
pH (STD)	"	8.38	8.01	7.95	7.93	7.89
SPEC. COND (uS/cm)	"	471	443	445	446	451
APPEARANCE	-	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
TIME	-	1245	1250	1255	1300	1255
DATE	-	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/11/2008

GENERAL INFORMATION

WEATHER: SUNNY AIR TEMP (ºF): 80
SAMPLES COLLECTED BY: W. Mabie/F. Stroehmer
SPECIAL HANDLING: PACKAGED ON ICE
MODE OF SHIPMENT: FEDEX
HANNA METER CALIBRATED 09/10/08 AND 09/11/08 PRIOR TO PURGING AND SAMPLING.

Prepared by: BWJ 10/3/08 Checked by: AEG 10/03/08

Clients/IP/Landfill/Fieldrpt/SEPT08.xls

FIELD SAMPLING REPORT

MACTEC
ENGINEERING & CONSULTING SERVICES, INC.
5710 OLEANDER DRIVE, SUITE 110
WILMINGTON, NC 28403
PHONE (910) 452-1185
FAX (910) 791-1338

JOB NAME: IP - LANDFILL
JOB NUMBER: 6550-08-0479

SAMPLING INFORMATION

SOIL SAMPLING DATA

SAMPLE ID NUMBER: NA HAZARDOUS: YES NO UNKNOWN
SAMPLING DATE / TIME: NA / NA
SAMPLER TYPE & MATERIAL: NA
SAMPLE DESCRIPTION: NA

WELL SAMPLING DATA

SAMPLE ID NUMBER: MW-1B HAZARDOUS: YES NO UNKNOWN
SAMPLING DATE / TIME: 9/11/2008 / 1250
SAMPLER TYPE & MATERIAL: LOW FLOW PERISTALTIC PUMP & DEDICATED CLEAN TUBING
SAMPLE DESCRIPTION: CLEAR
TOTAL WELL DEPTH (FT): 50.00 DEPTH TO WATER (FT): 16.88
PURGE & SAMPLE PROCEDURES: Well was purged under low-flow conditions until field parameters stabilized. A quiescent low-flow grab sample was collected the following day (within a 24-hr period of purging).
PURGE DATE: 9/10/2008 START TIME: 1305 END TIME: 1325

LABORATORY CONTAINER INFORMATION

CONTAINER		NUMBER	PRESERVATIVE /PREPARATION	COMMENTS		
TYPE	VOLUME					
PLASTIC -HDPE	1L	1	No Pres	BOD	SM 5210B	
PLASTIC -HDPE	250 ML	1	H2SO4	COD	410.4	
PLASTIC -HDPE	125 ML	1	No Pres	Cl,F,NO3,Ph,SO4	300	
PLASTIC -HDPE	250 ML	1	HNO3	METALS	7470A/6010B	
PLASTIC -HDPE	250 ML	1	No Pres	SP COND	120.1	
PLASTIC -HDPE	250 ML	1	No Pres	TDS	2540C	
AMBER GLASS	250 ML	1	HCL	TOC	5310B	
AMBER GLASS	1L	1	H2SO4	TOX	5320B	

FIELD MEASUREMENTS

PARAMETER	EQUIP ID	PURGE DATA				SAMPLE DATA
		1st READING	2nd READING	3rd READING	4th READING	
TEMP. (ºC)	HANNA	19.9	20.9	20.8	20.7	20.9
pH (STD)	"	6.81	5.25	5.24	5.28	5.32
SPEC. COND (uS/cm)	"	155	153	158	160	169
APPEARANCE	-	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
TIME	-	1305	1315	1320	1325	1250
DATE	-	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/11/2008

GENERAL INFORMATION

WEATHER: SUNNY AIR TEMP (ºF): 80
SAMPLES COLLECTED BY: W. Mabie/F. Stroehmer
SPECIAL HANDLING: PACKAGED ON ICE
MODE OF SHIPMENT: FEDEX
HANNA METER CALIBRATED 09/10/08 AND 09/11/08 PRIOR TO PURGING AND SAMPLING.

Prepared by: BWJ 10/3/08 Checked by: AEG 10/03/08

Clients/IP/Landfill/Fieldrpt/SEPT08.xls

FIELD SAMPLING REPORT

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ENGINEERING & CONSULTING SERVICES, INC.
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WILMINGTON, NC 28403
PHONE(910) 452-1185
FAX (910) 791-1338

JOB NAME: IP - LANDFILL
JOB NUMBER: 6550-08-0479

SAMPLING INFORMATION

SOIL SAMPLING DATA

SAMPLE ID NUMBER: NA HAZARDOUS: YES NO UNKNOWN
SAMPLING DATE / TIME: NA / NA
SAMPLER TYPE & MATERIAL: NA
SAMPLE DESCRIPTION: NA

WELL SAMPLING DATA

SAMPLE ID NUMBER: MW-4A HAZARDOUS: YES NO UNKNOWN
SAMPLING DATE / TIME: 9/11/2008 / 1045
SAMPLER TYPE & MATERIAL: LOW FLOW PERISTALTIC PUMP & DEDICATED CLEAN TUBING
SAMPLE DESCRIPTION: CLEAR
TOTAL WELL DEPTH (FT): 12.00 DEPTH TO WATER (FT): 3.11
PURGE & SAMPLE PROCEDURES: Well was purged under low-flow conditions until field parameters stabilized. A quiescent low-flow grab sample was collected the following day (within a 24-hr period of purging).
PURGE DATE: 9/10/2008 START TIME: 1130 END TIME: 1145

LABORATORY CONTAINER INFORMATION

CONTAINER		NUMBER	PRESERVATIVE /PREPARATION	COMMENTS		
TYPE	VOLUME					
PLASTIC -HDPE	1L	1	No Pres	BOD	SM 5210B	
PLASTIC -HDPE	250 ML	1	H2SO4	COD	410.4	
PLASTIC -HDPE	125 ML	1	No Pres	Cl,F,NO3,Ph,SO4	300	
PLASTIC -HDPE	250 ML	1	HNO3	METALS	7470A/6010B	
PLASTIC -HDPE	250 ML	1	No Pres	SP COND	120.1	
PLASTIC -HDPE	250 ML	1	No Pres	TDS	2540C	
AMBER GLASS	250 ML	1	HCL	TOC	5310B	
AMBER GLASS	1L	1	H2SO4	TOX	5320B	

FIELD MEASUREMENTS

PARAMETER	EQUIP ID	PURGE DATA				SAMPLE DATA
		1st READING	2nd READING	3rd READING	4th READING	
TEMP. (ºC)	HANNA	23.1	23.4	22.9	22.8	23.4
pH (STD)	"	6.74	5.94	5.31	5.32	5.81
SPEC. COND (uS/cm)	"	244	249	245	246	231
APPEARANCE	-	CLOUDY	CLEAR	CLEAR	CLEAR	CLEAR
TIME	-	1130	1135	1140	1145	1045
DATE	-	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/11/2008

GENERAL INFORMATION

WEATHER: SUNNY AIR TEMP (ºF): 80
SAMPLES COLLECTED BY: W. Mabie/F. Stroehmer
SPECIAL HANDLING: PACKAGED ON ICE
MODE OF SHIPMENT: FEDEX
HANNA METER CALIBRATED 09/10/08 AND 09/11/08 PRIOR TO PURGING AND SAMPLING.

Prepared by: BWJ 10/3/08 Checked by: AEG 10/03/08

Clients/IP/Landfill/Fieldrpt/SEPT08.xls

FIELD SAMPLING REPORT

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5710 OLEANDER DRIVE, SUITE 110
WILMINGTON, NC 28403
PHONE (910) 452-1185
FAX (910) 791-1338

JOB NAME: IP - LANDFILL
JOB NUMBER: 6550-08-0479

SAMPLING INFORMATION

SOIL SAMPLING DATA

SAMPLE ID NUMBER: NA HAZARDOUS: YES NO UNKNOWN
SAMPLING DATE / TIME: NA / NA
SAMPLER TYPE & MATERIAL: NA
SAMPLE DESCRIPTION: NA

WELL SAMPLING DATA

SAMPLE ID NUMBER: MW-5A HAZARDOUS: YES NO UNKNOWN
SAMPLING DATE / TIME: 9/11/2008 / 1135
SAMPLER TYPE & MATERIAL: LOW FLOW PERISTALTIC PUMP & DEDICATED CLEAN TUBING
SAMPLE DESCRIPTION: CLEAR
TOTAL WELL DEPTH (FT): 20.11 DEPTH TO WATER (FT): 8.41
PURGE & SAMPLE PROCEDURES: Well was purged under low-flow conditions until field parameters stabilized. A quiescent low-flow grab sample was collected the following day (within a 24-hr period of purging).
PURGE DATE: 9/10/2008 START TIME: 1210 END TIME: 1225

LABORATORY CONTAINER INFORMATION

CONTAINER TYPE	CONTAINER VOLUME	NUMBER	PRESERVATIVE /PREPARATION	COMMENTS		
PLASTIC -HDPE	1L	1	No Pres	BOD	SM 5210B	
PLASTIC -HDPE	250 ML	1	H2SO4	COD	410.4	
PLASTIC -HDPE	125 ML	1	No Pres	Cl,F,NO3,Ph,SO4	300	
PLASTIC -HDPE	250 ML	1	HNO3	METALS	7470A/6010B	
PLASTIC -HDPE	250 ML	1	No Pres	SP COND	120.1	
PLASTIC -HDPE	250 ML	1	No Pres	TDS	2540C	
AMBER GLASS	250 ML	1	HCL	TOC	5310B	
AMBER GLASS	1L	1	H2SO4	TOX	5320B	

FIELD MEASUREMENTS

PARAMETER	EQUIP ID	PURGE DATA 1st READING	2nd READING	3rd READING	4th READING	SAMPLE DATA
TEMP. (ºC)	HANNA	23.8	22.8	23.1	23.5	22.6
pH (STD)	"	7.25	7.18	7.23	7.27	7.03
SPEC. COND (uS/cm)	"	1714	1699	1653	1633	1643
APPEARANCE	-	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
TIME	-	1210	1215	1220	1225	1135
DATE	-	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/11/2008

GENERAL INFORMATION

WEATHER: SUNNY AIR TEMP (ºF): 80
SAMPLES COLLECTED BY: W. Mabie/F. Stroehmer
SPECIAL HANDLING: PACKAGED ON ICE
MODE OF SHIPMENT: FEDEX
HANNA METER CALIBRATED 09/10/08 AND 09/11/08 PRIOR TO PURGING AND SAMPLING.

Prepared by: BWJ 10/3/08 Checked by: AEG 10/03/08

Clients/IP/Landfill/Fieldrpt/SEPT08.xls

FIELD SAMPLING REPORT

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5710 OLEANDER DRIVE, SUITE 110
WILMINGTON, NC 28403
PHONE (910) 452-1185
FAX (910) 791-1338

JOB NAME: IP - LANDFILL
JOB NUMBER: 6550-08-0479

SAMPLING INFORMATION

SOIL SAMPLING DATA

SAMPLE ID NUMBER: NA HAZARDOUS: YES NO UNKNOWN
SAMPLING DATE / TIME: NA / NA
SAMPLER TYPE & MATERIAL: NA
SAMPLE DESCRIPTION: NA

WELL SAMPLING DATA

SAMPLE ID NUMBER: MW-7A HAZARDOUS: YES NO UNKNOWN
SAMPLING DATE / TIME: 9/11/2008 / 1015
SAMPLER TYPE & MATERIAL: LOW FLOW PERISTALTIC PUMP & DEDICATED CLEAN TUBING
SAMPLE DESCRIPTION: CLEAR
TOTAL WELL DEPTH (FT): 13.17 DEPTH TO WATER (FT): 4.1
PURGE & SAMPLE PROCEDURES: Well was purged under low-flow conditions until field parameters stabilized. A quiescent low-flow grab sample was collected the following day (within a 24-hr period of purging).
PURGE DATE: 9/10/2008 START TIME: 1105 END TIME: 1125

LABORATORY CONTAINER INFORMATION

CONTAINER TYPE	CONTAINER VOLUME	NUMBER	PRESERVATIVE /PREPARATION	COMMENTS		
PLASTIC -HDPE	1L	1	No Pres	BOD	SM 5210B	
PLASTIC -HDPE	250 ML	1	H2SO4	COD	410.4	
PLASTIC -HDPE	125 ML	1	No Pres	Cl,F,NO3,Ph,SO4	300	
PLASTIC -HDPE	250 ML	1	HNO3	METALS	7470A/6010B	
PLASTIC -HDPE	250 ML	1	No Pres	SP COND	120.1	
PLASTIC -HDPE	250 ML	1	No Pres	TDS	2540C	
AMBER GLASS	250 ML	1	HCL	TOC	5310B	
AMBER GLASS	1L	1	H2SO4	TOX	5320B	

FIELD MEASUREMENTS

PARAMETER	EQUIP ID	PURGE DATA 1st READING	2nd READING	3rd READING	4th READING	SAMPLE DATA
TEMP. (ºC)	HANNA	23.0	23.0	22.6	22.9	22.8
pH (STD)	"	6.84	7.05	7.04	7.11	6.82
SPEC. COND (uS/cm)	"	1728	1570	1610	1604	1352
APPEARANCE	-	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
TIME	-	1105	1115	1120	1125	1015
DATE	-	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/11/2008

GENERAL INFORMATION

WEATHER: SUNNY AIR TEMP (ºF): 80
SAMPLES COLLECTED BY: W. Mabie/F. Stroehmer
SPECIAL HANDLING: PACKAGED ON ICE
MODE OF SHIPMENT: FEDEX
HANNA METER CALIBRATED 09/10/08 AND 09/11/08 PRIOR TO PURGING AND SAMPLING.

Prepared by: BWJ 10/3/08 Checked by: AEG 10/03/08

Clients/IP/Landfill/Fieldrpt/SEPT08.xls

FIELD SAMPLING REPORT

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ENGINEERING & CONSULTING SERVICES, INC.
5710 OLEANDER DRIVE, SUITE 110
WILMINGTON, NC 28403
PHONE (910) 452-1185
FAX (910) 791-1338

JOB NAME: IP - LANDFILL
JOB NUMBER: 6550-08-0479

SAMPLING INFORMATION

SOIL SAMPLING DATA

SAMPLE ID NUMBER: NA HAZARDOUS: YES NO UNKNOWN
SAMPLING DATE / TIME: NA / NA
SAMPLER TYPE & MATERIAL: NA
SAMPLE DESCRIPTION: NA

WELL SAMPLING DATA

SAMPLE ID NUMBER: MW-8A HAZARDOUS: YES NO UNKNOWN
SAMPLING DATE / TIME: 9/11/2008 / 1115
SAMPLER TYPE & MATERIAL: LOW FLOW PERISTALTIC PUMP & DEDICATED CLEAN TUBING
SAMPLE DESCRIPTION: CLEAR
TOTAL WELL DEPTH (FT): 12.67 DEPTH TO WATER (FT): 4.04
PURGE & SAMPLE PROCEDURES: Well was purged under low-flow conditions until field parameters stabilized. A quiescent low-flow grab sample was collected the following day (within a 24-hr period of purging).
PURGE DATE: 9/10/2008 START TIME: 1140 END TIME: 1200

LABORATORY CONTAINER INFORMATION

CONTAINER TYPE	CONTAINER VOLUME	NUMBER	PRESERVATIVE /PREPARATION	COMMENTS		
PLASTIC -HDPE	1L	1	No Pres	BOD	SM 5210B	
PLASTIC -HDPE	250 ML	1	H2SO4	COD	410.4	
PLASTIC -HDPE	125 ML	1	No Pres	Cl,F,NO3,Ph,SO4	300	
PLASTIC -HDPE	250 ML	1	HNO3	METALS	7470A/6010B	
PLASTIC -HDPE	250 ML	1	No Pres	SP COND	120.1	
PLASTIC -HDPE	250 ML	1	No Pres	TDS	2540C	
AMBER GLASS	250 ML	1	HCL	TOC	5310B	
AMBER GLASS	1L	1	H2SO4	TOX	5320B	

FIELD MEASUREMENTS

PARAMETER	EQUIP ID	PURGE DATA 1st READING	2nd READING	3rd READING	4th READING	SAMPLE DATA
TEMP. (ºC)	HANNA	22.5	22.4	23.0	23.2	24.0
pH (STD)	"	6.99	6.66	6.65	6.98	6.42
SPEC. COND (uS/cm)	"	1773	1492	838	856	717
APPEARANCE	-	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
TIME	-	1140	1150	1155	1200	1115
DATE	-	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/11/2008

GENERAL INFORMATION

WEATHER: SUNNY AIR TEMP (ºF): 80
SAMPLES COLLECTED BY: W. Mabie/F. Stroehmer
SPECIAL HANDLING: PACKAGED ON ICE
MODE OF SHIPMENT: FEDEX
HANNA METER CALIBRATED 09/10/08 AND 09/11/08 PRIOR TO PURGING AND SAMPLING.

Prepared by: BWJ 10/3/08 Checked by: AEG 10/03/08

Clients/IP/Landfill/Fieldrpt/SEPT08.xls

FIELD SAMPLING REPORT	MACTEC ENGINEERING & CONSULTING SERVICES, INC. 5710 OLEANDER DRIVE, SUITE 110 WILMINGTON, NC 28403 PHONE (910) 452-1185 FAX (910) 791-1338	JOB NAME: IP - LANDFILL JOB NUMBER: 6550-08-0479

SAMPLING INFORMATION

SOIL SAMPLING DATA

SAMPLE ID NUMBER: NA HAZARDOUS: YES NO UNKNOWN

SAMPLING DATE / TIME: NA / NA

SAMPLER TYPE & MATERIAL: NA

SAMPLE DESCRIPTION: NA

WELL SAMPLING DATA

SAMPLE ID NUMBER: Primary HAZARDOUS: YES NO UNKNOWN

SAMPLING DATE / TIME: 9/11/2008 / 1215

SAMPLER TYPE & MATERIAL: Collected directly from a sample port - from an existing pumping system

SAMPLE DESCRIPTION: CLEAR

PURGING: Sample port was purged for several minutes prior to sample collection

PURGE DATE 9/11/2008

LABORATORY CONTAINER INFORMATION

CONTAINER TYPE	CONTAINER VOLUME	NUMBER	PRESERVATIVE /PREPARATION	COMMENTS	
PLASTIC -HDPE	1L	1	No Pres	BOD	SM 5210B
PLASTIC -HDPE	250 ML	1	H2SO4	COD	410.4
PLASTIC -HDPE	125 ML	1	No Pres	Cl,F,NO3,Ph,SO4	300
PLASTIC -HDPE	500 ML	1	HNO3	METALS	7470A/6010B
PLASTIC -HDPE	250 ML	1	No Pres	SPCON	120.1
PLASTIC -HDPE	250 ML	1	No Pres	TDS	2540C
AMBER GLASS	250 ML	1	HCL	TOC	5310B
AMBER GLASS	1 L	1	H2SO4	TOX	5320B
PLASTIC -HDPE	250 ML	1	No Pres	POTHO PHOS	300

FIELD MEASUREMENTS

PARAMETER	EQUIP ID	SAMPLE DATA			
TEMP. (ºC)	HANNA	24.0			
pH (STD)	"	6.62			
SPEC. COND (uS/cm)	"	3370			
APPEARANCE	-	BROWN			
TIME	-	1215			
DATE	-	09/11/08			

GENERAL INFORMATION

WEATHER: SUNNY AIR TEMP (ºF): 80

SAMPLES COLLECTED BY: W. Mabie/F. Stroehmer

SPECIAL HANDLING: PACKAGED ON ICE

MODE OF SHIPMENT: FEDEX

HANNA METER CALIBRATED 09/10/08 AND 09/11/08 PRIOR TO PURGING AND SAMPLING.

Prepared by: BWJ 10/3/08 Checked by: AEG 10/03/08

Clients/IP/Landfill/Fieldrpt/SEPT08.xls

FIELD SAMPLING REPORT	MACTEC ENGINEERING & CONSULTING SERVICES, INC. 5710 OLEANDER DRIVE, SUITE 110 WILMINGTON, NC 28403 PHONE (910) 452-1185 FAX (910) 791-1338	JOB NAME: IP - LANDFILL JOB NUMBER: 6550-08-0479

SAMPLING INFORMATION

SOIL SAMPLING DATA

SAMPLE ID NUMBER: NA HAZARDOUS: YES NO UNKNOWN

SAMPLING DATE / TIME: NA / NA

SAMPLER TYPE & MATERIAL: NA

SAMPLE DESCRIPTION: NA

WELL SAMPLING DATA

SAMPLE ID NUMBER: Secondary HAZARDOUS: YES NO UNKNOWN

SAMPLING DATE / TIME: 9/11/2008 / 1230

SAMPLER TYPE & MATERIAL: Collected directly from a sample port - from an existing pumping system

SAMPLE DESCRIPTION: CLEAR

PURGING: Sample port was purged for several minutes prior to sample collection

PURGE DATE 9/11/2008

LABORATORY CONTAINER INFORMATION

CONTAINER		NUMBER	PRESERVATIVE	COMMENTS	
TYPE	VOLUME		/PREPARATION		
PLASTIC -HDPE	1L	1	No Pres	BOD	SM 5210B
PLASTIC -HDPE	250 ML	1	H2SO4	COD	410.4
PLASTIC -HDPE	125 ML	1	No Pres	Cl,F,NO3,Ph,SO4	300
PLASTIC -HDPE	500 ML	1	HNO3	METALS	7470A/6010B
PLASTIC -HDPE	250 ML	1	No Pres	SPCON	120.1
PLASTIC -HDPE	250 ML	1	No Pres	TDS	2540C
AMBER GLASS	250 ML	1	HCL	TOC	5310B
AMBER GLASS	1 L	1	H2SO4	TOX	5320B
PLASTIC -HDPE	250 ML	1	No Pres	POTHO PHOS	300

FIELD MEASUREMENTS

PARAMETER	EQUIP ID	SAMPLE DATA			
TEMP. (ºC)	HANNA	25.1			
pH (STD)	"	6.59			
SPEC. COND (uS/cm)	"	2970			
APPEARANCE	-	CLEAR			
TIME	-	1230			
DATE	-	09/11/08			

GENERAL INFORMATION

WEATHER: SUNNY AIR TEMP (ºF): 80

SAMPLES COLLECTED BY: W. Mabie/F. Stroehmer

SPECIAL HANDLING: PACKAGED ON ICE

MODE OF SHIPMENT: FEDEX

HANNA METER CALIBRATED 09/10/08 AND 09/11/08 PRIOR TO PURGING AND SAMPLING.

Prepared by: BWJ 10/3/08 Checked by: AEG 10/03/08

Clients/IP/Landfill/Fieldrpt/SEPT08.xls

FIELD SAMPLING REPORT	MACTEC ENGINEERING & CONSULTING SERVICES, INC. 5710 OLEANDER DRIVE, SUITE 110 WILMINGTON, NC 28403 PHONE (910) 452-1185 FAX (910) 791-1338	JOB NAME: IP - LANDFILL JOB NUMBER: 6550-08-0479

SAMPLING INFORMATION

SOIL SAMPLING DATA

SAMPLE ID NUMBER: NA HAZARDOUS: YES NO UNKNOWN

SAMPLING DATE / TIME: NA / NA

SAMPLER TYPE & MATERIAL: NA

SAMPLE DESCRIPTION: NA

WELL SAMPLING DATA

SAMPLE ID NUMBER: Under-Drain HAZARDOUS: YES NO UNKNOWN

SAMPLING DATE / TIME: 9/11/2008 / 1240

SAMPLER TYPE & MATERIAL: Collected directly from a discharge pipe into the underdrain vault

SAMPLE DESCRIPTION: CLEAR

PURGING: Under-Drain sample pipe was discharging into the vault at the time of sampling

PURGE DATE 9/11/2008

LABORATORY CONTAINER INFORMATION

CONTAINER		NUMBER	PRESERVATIVE /PREPARATION	COMMENTS	
TYPE	VOLUME				
PLASTIC -HDPE	1L	1	No Pres	BOD	SM 5210B
PLASTIC -HDPE	250 ML	1	H2SO4	COD	410.4
PLASTIC -HDPE	125 ML	1	No Pres	Cl,F,NO3,Ph,SO4	300
PLASTIC -HDPE	500 ML	1	HNO3	METALS	7470A/6010B
PLASTIC -HDPE	250 ML	1	No Pres	SPCON	120.1
PLASTIC -HDPE	250 ML	1	No Pres	TDS	2540C
AMBER GLASS	250 ML	1	HCL	TOC	5310B
AMBER GLASS	1 L	1	H2SO4	TOX	5320B
PLASTIC -HDPE	250 ML	1	No Pres	POTHO PHOS	300

FIELD MEASUREMENTS

PARAMETER	EQUIP ID	SAMPLE DATA			
TEMP. (ºC)	HANNA	23.9			
pH (STD)	"	6.73			
SPEC. COND (uS/cm)	"	2517			
APPEARANCE	-	BROWN			
TIME	-	1240			
DATE	-	09/11/08			

GENERAL INFORMATION

WEATHER: SUNNY AIR TEMP (ºF): 80

SAMPLES COLLECTED BY: W. Mabie/F. Stroehmer

SPECIAL HANDLING: PACKAGED ON ICE

MODE OF SHIPMENT: FEDEX

HANNA METER CALIBRATED 09/10/08 AND 09/11/08 PRIOR TO PURGING AND SAMPLING.

Prepared by: BWJ 10/3/08 Checked by: AEG 10/03/08

Clients/IP/Landfill/Fieldrpt/SEPT08.xls