PREMO GROUP INC

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July 10, 2009

Don Heardon
Compliance Unit
NCDENR-DVM, Solid Waste Section
1646 Mail Service Center
Raleigh, NC 27699-1646

RE: Facility Permit # 4203
Low Ground Landfill Semi-annual Environmental Monitoring Report
Roanoke Rapids, NC

Dear Mr. Heardon;

On behalf of International Paper, PREMO Group Inc. (PREMO) is submitting the attached Semi-annual Environmental Monitoring Report for the May 2009 sampling event at the above referenced site. Also enclosed is the North Carolina (NC) Solid Waste Section summary table along with the laboratory report from Columbia Analytical Services, and the PREMO Quality Assurance Review of the laboratory data.

The May 2009 sampling activities were conducted by PREMO. Depth to groundwater measurements were obtained from the five site monitoring wells (MWLG-1, MWLG-3, MWLG-5, MWLG-6, and MWLG-7), and the monitoring wells were then purged and sampled according to EPA protocol. Copies of the field sampling forms and field notes completed by PREMO personnel are attached to this report. The groundwater samples were preserved according to EPA protocol and shipped to Columbia Analytical Services Laboratory in Jacksonville, FL, a North Carolina certified laboratory. The analytical results for this sampling event are attached.

With the exception of iron and manganese, the laboratory analysis of samples collected from site monitoring wells were below the applicable NC standards. The results of the five (5) groundwater samples exceeded the iron and manganese NC 2L standards of 300 ug/L and 50 ug/L, respectively, except for wells MWLG-3 and MWLG-7 which only exceeded the manganese 2L standard. These results are consistent with historical sampling data, and are considered to be naturally occurring and within the range of background concentrations reported for upgradient monitoring well MWLG-1.

The detected manganese and iron concentrations in site wells are reported within the range of background concentrations for this site. The Solid Waste Section has waived the requirement to prepare a Water Quality Assessment Plan for this site. PREMO continues to concur with this waiver and does not recommend any changes to the monitoring program at this time.

If you have any questions on this report feel free to call at 770-973-2100.

Sincerely,

Patrick Kelley, CHMM
Project Manager

Peter Ramsey, PG
Senior Geologist

cc: Phil Slowiak, International Paper

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):

PREMO Group Inc. (Consultant)

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

Name: Patrick Kelley Phone: 770-973-2100 x2860

E-mail: pkelley@premiercorp-usa.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
LOW GROUND LANDFILL Roanoke Rapids, NC	Kapstone Mill 100 Gaston Road Roanoke Rapids, NC	42 03	.0500	May 20, 2009

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.

Patrick Kelley	Project Manager	770-973-2100 x2860
Facility Representative Name (Print)	Title	(Area Code) Telephone Number

Patrick Kelley 7-10-09

Signature Date

Affix NC Licensed/ Professional Geologist/Engineer Seal here:

NORTH CAROLINA LICENSED SEAL 2107 GEOLOGIST PETER E. RAMSEY 7/13/09

Revised 01/2007

International Paper 100 Gaston Road Low Ground Landfill

Roanoke Rapids Mill Roanoke Rapids, NC Monitoring Wells

Samples collected on 5/20/09 by Kent Davis of PREMO | Contact: Patrick Kelley, Premo Group

Samples were analyzed by CAS, Inc NC Cert. #: 527 | Phone 770-973-2100 #2860 or email, pkelley@premiercorp-usa.com

FACILITY PERMIT	SAMPLE ID	CAS Number	SWS ID	PARAMETER	RESULT	UNITS	LAB QUALIFIER	DILUTION FACTOR	COLLECT DATE	EXTRACTION DATE	ANALYSIS DATE
42-03	MW-LG 1	7440-38-2	14	Arsenic	1.71	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG 1	7440-39-3	15	Barium	167	ug/L		1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG 1	316	316	Biochemical Oxygen Demand	1.5	mg/L	J	1.0	5/20/09	NA	5/22/09
42-03	MW-LG 1	7440-43-9	34	Cadmium	0.48	ug/L	J	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG 1	317	317	Chemical Oxygen Demand	41	mg/L		1.0	5/20/09	NA	5/26/09
42-03	MW-LG 1	16887-00-6	301	Chloride	5.4	mg/L		1.0	5/20/09	NA	5/21/09
42-03	MW-LG 1	7440-47-3	51	Chromium	9.8	ug/L	J	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG 1	7440-50-8	54	Copper	21.9	ug/L	J	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG 1	16984-48-8	312	Fluoride	0.16	mg/L	J	1.0	5/20/09	NA	5/21/09
42-03	MW-LG 1	7439-89-6	340	Iron	17.0	mg/L		1.0	5/20/09	5/26/09	5/26/09
42-03	MW-LG 1	7439-92-1	131	Lead	17.7	ug/L		1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG 1	7439-96-5	342	Manganese	788	ug/L		1.0	5/20/09	5/27/09	5/28/09
42-03	MW-LG 1	7439-97-6	132	Mercury	0.12	ug/L	J	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG 1	14797-55-8	303	Nitrate	0.038	mg/L	U	1.0	5/20/09	NA	5/21/09
42-03	MW-LG 1	321	321	pH - Lab	6.2	pH UNITS		1.0	5/20/09	NA	5/21/09
42-03	MW-LG 1	7782-49-2	183	Selenium	0.8	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG 1	7440-22-4	184	Silver	0.10	ug/L	J	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG 1	14808-79-8	315	Sulfate	9	mg/L		1.0	5/20/09	NA	5/21/09
42-03	MW-LG 1	311	311	Total Dissolved Solids	170	mg/L		1.0	5/20/09	NA	5/27/09
42-03	MW-LG 1	E-10195	357	Total Organic Carbon	5.9	mg/L		1.0	5/20/09	NA	5/31/09
42-03	MW-LG 1	7440-66-6	213	Zinc	23	ug/L	U	1.0	5/20/09	5/27/09	5/27/09
42-03	MW-LG 1			Total Organic Halides	30	ug/L	U	1.0	5/20/09	6/17/09	6/17/09
42-03	MW-LG 3	7440-38-2	14	Arsenic	0.20	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG 3	7440-39-3	15	Barium	60.6	ug/L		1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG 3	316	316	Biochemical Oxygen Demand	1.2	mg/L	J	1.0	5/20/09	NA	5/22/09
42-03	MW-LG 3	7440-43-9	34	Cadmium	0.12	ug/L	J	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG 3	317	317	Chemical Oxygen Demand	23	mg/L		1.0	5/20/09	NA	5/26/09
42-03	MW-LG 3	16887-00-6	301	Chloride	82	mg/L		1.0	5/20/09	NA	5/21/09
42-03	MW-LG 3	7440-47-3	51	Chromium	0.8	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG 3	7440-50-8	54	Copper	1	ug/L	J	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG 3	16984-48-8	312	Fluoride	0.23	mg/L		1.0	5/20/09	NA	5/21/09
42-03	MW-LG 3	7439-89-6	340	Iron	0.188	mg/L		1.0	5/20/09	5/26/09	5/26/09
42-03	MW-LG 3	7439-92-1	131	Lead	0.20	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG 3	7439-96-5	342	Manganese	1410	ug/L		1.0	5/20/09	5/27/09	5/28/09
42-03	MW-LG 3	7439-97-6	132	Mercury	0.08	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG 3	14797-55-8	303	Nitrate	4.9	mg/L		1.0	5/20/09	NA	5/21/09
42-03	MW-LG 3	321	321	pH - Lab	6.5	pH UNITS		1.0	5/20/09	NA	5/21/09
42-03	MW-LG 3	7782-49-2	183	Selenium	2.6	ug/L		1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG 3	7440-22-4	184	Silver	0.080	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG 3	14808-79-8	315	Sulfate	200	mg/L		2.0	5/20/09	NA	5/21/09
42-03	MW-LG 3	311	311	Total Dissolved Solids	1200	mg/L		2.0	5/20/09	NA	5/27/09
42-03	MW-LG 3	E-10195	357	Total Organic Carbon	8.9	mg/L		1.0	5/20/09	NA	5/31/09
42-03	MW-LG 3	7440-66-6	213	Zinc	6	ug/L	J	1.0	5/20/09	5/27/09	5/27/09
42-03	MW-LG 3			Total Organic Halides	0.125	ug/L	U	1.0	5/20/09	6/17/09	6/17/09

International Paper **100 Gaston Road Low Ground Landfill**

Roanoke Rapids Mill **Roanoke Rapids, NC Monitoring Wells**

Samples collected on 5/20/09 by Kent Davis of PREMO | Contact: Patrick Kelley, Premo Group

Samples were analyzed by CAS, Inc NC Cert. #: 527 | Phone 770-973-2100 #2860 or email. pkelley@premiercorp-usa.com

FACILITY PERMIT	SAMPLE ID	CAS Number	SWS ID	PARAMETER	RESULT	UNITS	LAB QUALIFIER	DILUTION FACTOR	COLLECT DATE	EXTRACTION DATE	ANALYSIS DATE
42-03	MW-LG5	7440-38-2	14	Arsenic	0.5	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG5	7440-39-3	15	Barium	104	ug/L		1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG5	316	316	Biochemical Oxygen Demand	2.8	mg/L	J	1.0	5/20/09	NA	5/22/09
42-03	MW-LG5	7440-43-9	34	Cadmium	0.25	ug/L	J	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG5	317	317	Chemical Oxygen Demand	7	mg/L		1.0	5/20/09	NA	5/26/09
42-03	MW-LG5	16887-00-6	301	Chloride	2.0	mg/L		1.0	5/20/09	NA	5/21/09
42-03	MW-LG5	7440-47-3	51	Chromium	0.8	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG5	7440-50-8	54	Copper	0.9	ug/L	J	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG5	16984-48-8	312	Fluoride	0.18	mg/L	J	1.0	5/20/09	NA	5/21/09
42-03	MW-LG5	7439-89-6	340	Iron	4.85	mg/L		1.0	5/20/09	5/26/09	5/26/09
42-03	MW-LG5	7439-92-1	131	Lead	0.2	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG5	7439-96-5	342	Manganese	980	ug/L		1.0	5/20/09	5/27/09	5/28/09
42-03	MW-LG5	7439-97-6	132	Mercury	0.08	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG5	14797-55-8	303	Nitrate	0.16	mg/L	J	1.0	5/20/09	NA	5/21/09
42-03	MW-LG5	321	321	pH - Lab	6.1	pH UNITS		1.0	5/20/09	NA	5/21/09
42-03	MW-LG5	7782-49-2	183	Selenium	0.8	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG5	7440-22-4	184	Silver	0.08	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG5	14808-79-8	315	Sulfate	260	mg/L		2.0	5/20/09	NA	5/21/09
42-03	MW-LG5	311	311	Total Dissolved Solids	650	mg/L		1.0	5/20/09	NA	5/27/09
42-03	MW-LG5	E-10195	357	Total Organic Carbon	5	mg/L		1.0	5/20/09	NA	5/31/09
42-03	MW-LG5	7440-66-6	213	Zinc	24	ug/L		1.0	5/20/09	5/27/09	5/27/09
42-03	MW-LG5			Total Organic Halides	30	ug/L	U	1.0	5/20/09	6/17/09	6/17/09
42-03	MW-LG6	7440-38-2	14	Arsenic	0.72	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG6	7440-39-3	15	Barium	592	ug/L		1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG6	316	316	Biochemical Oxygen Demand	2.0	mg/L	J	1.0	5/20/09	NA	5/22/09
42-03	MW-LG6	7440-43-9	34	Cadmium	0.12	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG6	317	317	Chemical Oxygen Demand	43	mg/L		1.0	5/20/09	NA	5/26/09
42-03	MW-LG6	16887-00-6	301	Chloride	31	mg/L		5.0	5/20/09	NA	5/21/09
42-03	MW-LG6	7440-47-3	51	Chromium	3.7	ug/L		1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG6	7440-50-8	54	Copper	1.0	ug/L	J	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG6	16984-48-8	312	Fluoride	0.24	mg/L		1.0	5/20/09	NA	5/21/09
42-03	MW-LG6	7439-89-6	340	Iron	0.539	mg/L		1.0	5/20/09	5/26/09	5/26/09
42-03	MW-LG6	7439-92-1	131	Lead	0.2	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG6	7439-96-5	342	Manganese	1290	ug/L		1.0	5/20/09	5/27/09	5/28/09
42-03	MW-LG6	7439-97-6	132	Mercury	0.08	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG6	14797-55-8	303	Nitrate	0.04	mg/L	U	1.0	5/20/09	NA	5/21/09
42-03	MW-LG6	321	321	pH - Lab	6.8	pH UNITS		1.0	5/20/09	NA	5/21/09
42-03	MW-LG6	7782-49-2	183	Selenium	0.8	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG6	7440-22-4	184	Silver	0.08	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG6	14808-79-8	315	Sulfate	410	mg/L		5.0	5/20/09	NA	5/21/09
42-03	MW-LG6	311	311	Total Dissolved Solids	2300	mg/L		2.0	5/20/09	NA	5/27/09
42-03	MW-LG6	E-10195	357	Total Organic Carbon	13	mg/L		1.0	5/20/09	NA	5/31/09
42-03	MW-LG6	7440-66-6	213	Zinc	4.0	mg/L	U	1.0	5/20/09	5/27/09	5/27/09
42-03	MW-LG6			Total Organic Halides	30	ug/L	U	1.0	5/20/09	6/17/09	6/17/09

International Paper **100 Gaston Road Low Ground Landfill**

Roanoke Rapids Mill **Roanoke Rapids, NC Monitoring Wells**

Samples collected on 5/20/09 by Kent Davis of PREMO | Contact: Patrick Kelley, Premo Group

Samples were analyzed by CAS, Inc NC Cert. #: 527 | Phone 770-973-2100 #2860 or email, pkelley@premiercorp-usa.com

FACILITY PERMIT	SAMPLE ID	CAS Number	SWS ID	PARAMETER	RESULT	UNITS	LAB QUALIFIER	DILUTION FACTOR	COLLECT DATE	EXTRACTION DATE	ANALYSIS DATE
42-03	MW-LG7	7440-38-2	14	Arsenic	0.20	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG7	7440-39-3	15	Barium	89.6	ug/L		1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG7	316	316	Biochemical Oxygen Demand	1.6	mg/L	J	1.0	5/20/09	NA	5/22/09
42-03	MW-LG7	7440-43-9	34	Cadmium	0.12	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG7	317	317	Chemical Oxygen Demand	5.0	mg/L		1.0	5/20/09	NA	5/26/09
42-03	MW-LG7	16887-00-6	301	Chloride	18	mg/L		1.0	5/20/09	NA	5/21/09
42-03	MW-LG7	7440-47-3	51	Chromium	0.8	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG7	7440-50-8	54	Copper	0.7	ug/L	J	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG7	16984-48-8	312	Fluoride	0.21	mg/L		1.0	5/20/09	NA	5/21/09
42-03	MW-LG7	7439-89-6	340	Iron	0.239	mg/L		1.0	5/20/09	5/26/09	5/26/09
42-03	MW-LG7	7439-92-1	131	Lead	0.20	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG7	7439-96-5	342	Manganese	190	ug/L		1.0	5/20/09	5/27/09	5/28/09
42-03	MW-LG7	7439-97-6	132	Mercury	0.08	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG7	14797-55-8	303	Nitrate	0.36	mg/L		1.0	5/20/09	NA	5/21/09
42-03	MW-LG7	321	321	pH - Lab	7.0	pH UNITS	J	1.0	5/20/09	NA	5/21/09
42-03	MW-LG7	7782-49-2	183	Selenium	0.8	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG7	7440-22-4	184	Silver	0.080	ug/L	U	1.0	5/20/09	5/22/09	5/22/09
42-03	MW-LG7	14808-79-8	315	Sulfate	93	mg/L		1.0	5/20/09	NA	5/21/09
42-03	MW-LG7	311	311	Total Dissolved Solids	1200	mg/L		1.4	5/20/09	NA	5/27/09
42-03	MW-LG7	E-10195	357	Total Organic Carbon	3.8	mg/L		1.0	5/20/09	NA	5/31/09
42-03	MW-LG7	7440-66-6	213	Zinc	4.0	ug/L	U	1.0	5/20/09	5/27/09	5/27/09
42-03	MW-LG7			Total Organic Halides	30	ug/L	U	1.0	5/20/09	6/17/09	6/17/09

U - Undetected above the MRL/MDL

J - Estimated value above the MDL, but below the MRL

CONTENTS

PAGE	REFERENCE	DATE

Location _____ Date _____

Project / Client IA Roanoke Roads

5/20/09

Arrived on Site @ 0650
Met Larry @ 0700

Took Safety Training @ 0730-0815

Proceeded to Well locations

Calibrated YSI + Turb. Meter
Setup on LG-6 - Sampled @ 1030

Setup on LG-5 - Sample 1240

Setup on LG-3 - Sample @ 1425

Drilling Company drilling on Power Line Right of Way doing Geotechnical For Water Line.

Land Fill not mowed + Areas Around Wells not mowed - Fence OK - Free of Debris

Location _____ Date _____

Project / Client _____

Setup on LG-1 Sampled @ 1535

Setup on LG-7 Sampled @ 1640

Packed Samples & Laptop Departed to High Point to Drop Samples @ FedEx 1715

Departed For Richmond Airport @ 1730

1730

INTERNATIONAL PAPER

Groundwater Sampling Field Form

WELL No. LG-6	FACILITY NUMBER 30001 8	LOCATION	DATE 5/20/09
SAMPLE No.	PROJECT NAME IP Roanoke Rapids	FIELD PERSONNEL/COMPANY R. Davis, C. Vincent Premo	
SAMPLE TIME:	SITE	INSTRUMENT CALIBRATION DATE 5/20/09	

WELL CONDITION POOR (SATISFACTORY) NEW (if poor, explain) _____

FIELD CONDITIONS/ WEATHER Sunny 50

EQUIPMENT DECONTAMINATION: 1030

Casing Diameter: (circle one) (2") 4" 6" Other _____

Casing Volume Calculation: ($\pi r^2 h$) (7.48 gal/ft^3)

Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47

Depth to Water (feet): 10.30

Depth of Well (feet): 18.92

Water Column (feet): 8.62

Casing Volume (gallons): 1.4

Calculated Purge Volume (gallons): 4.22

Actual Purge Volume (gallons): 2.41

Measuring Point Elevation (feet): _____

Groundwater Surface Elevation: _____

Sheen / LNAPL / DNAPL present: _____

Other Remarks: _____

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMP (°C)	pH	CONDUCTIVITY (µS/cm 25° C)	DISSOLVED OXYGEN (ppm)	ORP ~~Eh~~	TURBIDITY (NTU)	ODOR / COLOR/ REMARKS	
0921	0							PURGE START	
0924	initial	17.37	6.83	2934	0.49	-196	9.01		11.[illegible]
0941	0.5	17.67	6.84	2978	0.07	-207	~~[illegible]~~ 10.1		12.4
0946	0.75	17.68	6.83	2979	0.07	-209	7.62		12.25
0950	1.0	17.68	6.83	2975	0.07	-184	4.36		12.30
1005	1.50	17.72	6.82	2989	0.14	-193	2.82		12.33
1015	1.75	17.75	6.81	2950	0.09	-197	2.12		
1020	2.0	17.75	6.81	2950	0.07	-195	2.01		12.33

Purging Equipment: _____ Sampling Equipment: _____ Sample Intake Depth: _____

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
	BOD, pH, Cond, Cl, F,		
	SO_4, NO_3, TDS	500 ml	
	TOX	1L Amber / H_2SO_4	
	TOC	125ml / HCl	
	COD	125ml / H_2SO_4	
	Metals	125ml / HNO_3	

INTERNATIONAL PAPER

Groundwater Sampling Field Form

WELL No. LG-5	FACILITY NUMBER 300018	LOCATION	DATE 5/20/09
SAMPLE No.	PROJECT NAME FP Roanoke Rapids	FIELD PERSONNEL/COMPANY Kent Davis, Larry Vincent	
SAMPLE TIME:	SITE	INSTRUMENT CALIBRATION DATE 5/20/09	

WELL CONDITION POOR (SATISFACTORY) NEW (if poor, explain) Hasp will not close enough to lock

FIELD CONDITIONS/ WEATHER Sunny 75° 1240

EQUIPMENT DECONTAMINATION

Casing Diameter: (circle one) (2") 4" 6" Other ____

Casing Volume Calculation: $(\pi r^2 h)$ (7.48 gal/ft^3)

Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47

Depth to Water (feet): 10.0

Depth of Well (feet): 19.19

Water Column (feet): 9.19

Casing Volume (gallons): 1.5

Calculated Purge Volume (gallons): 4.5

Actual Purge Volume (gallons):

Measuring Point Elevation (feet):

Groundwater Surface Elevation:

Sheen / LNAPL / DNAPL present:

Other Remarks:

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMP (°C)	pH	CONDUCTIVITY (µS/cm 25° C)	DISSOLVED OXYGEN (ppm)	ORP ~~Eh~~	TURBIDITY (NTU)	ODOR / COLOR/ REMARKS
1130	0							PURGE START
1136	INITIAL	19.34	6.11	818	0.46	52.2	3.14	10.48
1150	0.5	19.28	6.12	807	0.19	47.2	6.47	11.29
1200	0.75	19.30	6.13	809	0.15	53.1	5.37	11.58
1208	1.0	19.38	6.11	814	0.12	64.2	3.33	11.83
1218	1.25	19.35	6.11	820	0.10	68.5	2.51	12.19
1228	1.5	19.40	6.13	826	0.09	66.6	2.20	

Purging Equipment: Pearson Peri Pump 451 55# Hanna Tech Metal Sampling Equipment: _____ Sample Intake Depth: _____

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
	BOD, pH, Cond, Cl, F		
	SO_4, NO_3, TDS	500 ml	
	TOX	1L Amber / H_2SO_4	
	TOC	125ml / HCl	
	COD	125ml / H_2SO_4	
	Metals	125ml / HNO_3	

INTERNATIONAL PAPER

Groundwater Sampling Field Form

WELL No. LG-3	FACILITY NUMBER 550018	LOCATION	DATE 5/20/09
SAMPLE No.	PROJECT NAME IP Roanoke Rapids	FIELD PERSONNEL/COMPANY E. Davis, C. Vincent	
SAMPLE TIME:	SITE	INSTRUMENT CALIBRATION DATE 5/20/09	

WELL CONDITION POOR (SATISFACTORY) NEW (if poor, explain) Locking Cover Broken - (Hinge)

FIELD CONDITIONS/ WEATHER Sunny 77° 1425

EQUIPMENT DECONTAMINATION

Casing Diameter: (circle one) (2") 4" 6" Other _____

Casing Volume Calculation: ($\pi r^2 h$) (7.48 gal/ft^3)

Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47

Depth to Water (feet): 7.55

Depth of Well (feet): 20.24

Water Column (feet): 12.69

Casing Volume (gallons): 2.1

Calculated Purge Volume (gallons): 6.2

Actual Purge Volume (gallons): 1.25

Measuring Point Elevation (feet):

Groundwater Surface Elevation:

Sheen / LNAPL / DNAPL present:

Other Remarks:

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMP (°C)	pH	CONDUCTIVITY (µS/cm 25° C)	DISSOLVED OXYGEN (ppm)	ORP ~~Eh~~	TURBIDITY (NTU)	ODOR / COLOR/ REMARKS
1340	0							PURGE START
1344	Initial	16.72	6.49	1657	1.19	32.3	5.91	
1355	0.5	15.99	6.46	1645	0.17	35.4	4.85	8.32
1405	0.75	15.93	6.46	1643	0.13	42.5	3.98	8.38
1408	1.0	15.96	6.46	1645	0.14	40.7	2.65	8.48
1415	1.25	15.94	6.46	1646	0.12	38.7	2.02	8.48

Purging Equipment: _____ Sampling Equipment: _____ Sample Intake Depth: _____

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
	BOD, pH, Cond, Cl, F	500 ml	
	SO4, NO3, TDS		
	TOX	1L Amber / H2SO4	
	TOC	125ml / HCl	
	COD	125ml / H2SO4	
	Metals	125 ml / HNO3	

INTERNATIONAL PAPER

Groundwater Sampling Field Form

WELL No. LG-1	FACILITY NUMBER 3000181	LOCATION	DATE 5/20/09
SAMPLE No.	PROJECT NAME IP Roanoke Rapids	FIELD PERSONNEL/COMPANY R. Davis, C. Vincent	
SAMPLE TIME:	SITE	INSTRUMENT CALIBRATION DATE 5/20/09	

WELL CONDITION: POOR SATISFACTORY NEW (if poor, explain)

FIELD CONDITIONS/ WEATHER: Sunny 77° 1535

EQUIPMENT DECONTAMINATION

Casing Diameter: (circle one) 2" 4" 6" Other ____

Casing Volume Calculation: ($\pi r^2 h$) (7.48 gal/ft^3)

Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47

Depth to Water (feet): 8.10

Depth of Well (feet): 16.68

Water Column (feet): 8.58

Casing Volume (gallons): 1.4

Calculated Purge Volume (gallons): 4.2

Actual Purge Volume (gallons): 1.0

Measuring Point Elevation (feet):

Groundwater Surface Elevation:

Sheen / LNAPL / DNAPL present:

Other Remarks:

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMP (°C)	pH	CONDUCTIVITY (µS/cm 25° C)	DISSOLVED OXYGEN (ppm)	ORP ~~Eh~~	TURBIDITY (NTU)	ODOR / COLOR/ REMARKS
1445	0							PURGE START
1451	Initial	15.47	6.33	231	0.52	-115	41.3	8.43
1503	0.5	14.98	6.07	182	0.14	-113	34.2	9.03
1515	0.75	15.00	6.10	179	0.07	-118	38.1	9.20
1523	1.0	15.02	6.12	180	0.06	-123	24.8	9.35
	1.25							

Purging Equipment: ____ Sampling Equipment: ____ Sample Intake Depth: ____

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
	BOD, pH, Cond, Cl, F	500ml /	
	SO_4, NO_3, TDS		
	TOX	1L Amber / H_2SO_4	
	TOC	125ml / HCl	
	COD	125ml / H_2SO_4	
	Metals	125ml / HNO_3	

INTERNATIONAL PAPER

Groundwater Sampling Field Form

WELL No. LG-7	FACILITY NUMBER 300018	LOCATION	DATE 5/20/09
SAMPLE No.	PROJECT NAME IP Roanoke Rapids	FIELD PERSONNEL/COMPANY	
SAMPLE TIME:	SITE	INSTRUMENT CALIBRATION DATE 5/20/09	

WELL CONDITION POOR (SATISFACTORY) NEW (if poor, explain)

FIELD CONDITIONS/ WEATHER: Sunny 75°

EQUIPMENT DECONTAMINATION: 1640

Casing Diameter: (circle one) (2") 4" 6" Other ____

Casing Volume Calculation: ($\pi r^2 h$) (7.48 gal/ft^3)

Casing Volume (gallons/ft) for: 2" = 0.163; 4" = 0.653; 6" = 1.47

Depth to Water (feet): 9.26

Depth of Well (feet): 17.05

Water Column (feet): 7.8

Casing Volume (gallons): 1.3

Calculated Purge Volume (gallons): 3.8

Actual Purge Volume (gallons): 1.25

Measuring Point Elevation (feet):

Groundwater Surface Elevation:

Sheen / LNAPL / DNAPL present:

Other Remarks:

TIME 2400 hrs	CUMULATIVE VOLUME (gal)	TEMP (°C)	pH	CONDUCTIVITY (µS/cm 25° C)	DISSOLVED OXYGEN (ppm)	ORP ~~Eh~~	TURBIDITY (NTU)	ODOR / COLOR/ REMARKS
1551	0							PURGE START
1557	Initial	15.09	7.06	1320	4.14	11.5	18.1	9.49
1610	0.5	14.98	6.95	1488	2.34	42.6	3.39	9.50
1618	0.75	14.90	6.93	1524	1.77	43.2	2.13	9.52
1622	1.0	15.00	6.93	1538	1.55	36.4	1.41	9.53
1627	1.25	14.98	6.93	1550	1.59	37.4	1.59	9.53

Purging Equipment: ____ Sampling Equipment: ____ Sample Intake Depth: ____

SAMPLE NUMBER	ANALYTICAL METHOD	BOTTLE TYPE/ PRESERVATIVES	QA REMARKS
	BOD, pH, Cond, Cl, F	500 ml	
	SO_4, NO_3 TDS		
	TOX	1L Amber / H_2SO_4	
	TOC	125 ml / HCl	
	COD	125 ml / H_2SO_4	
	Metals	125 ml / HNO_3	

Columbia Analytical Services

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

www.caslab.com

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SR #

CAS Contact

Project Name: IP Roanoke Rapids	Project Number: 300018
Project Manager: Pete Ramsey	Email Address: PeterR@PremoTeam.com
Company/Address: Premier Environmental Services, 1880 West Oak Pkwy Bld 100, STE 106, Marietta Ga 30062	
Phone #: 770-973-2100	FAX#: 770-973-7395
Sampler's Signature: [signature]	Sampler's Printed Name: Kentin Davis

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE: 1 2 3 0 3

NUMBER OF CONTAINERS

CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	TOC	Metals	COD	COD, TDS, Cl, NO3, SO4, F, BOD, pH	TOX	REMARKS/ ALTERNATE DESCRIPTION
LG-6		5/20/09	1030	GW	5	1	1	1	1	1	
LG-5			1240	GW	5	1	1	1	1	1	
LG-3			1425	GW	5	1	1	1	1	1	
LG-1			1535	GW	5	1	1	1	1	1	
LG-7			1640	GW	5	1	1	1	1	1	

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS

See QAPP ☐

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
X STANDARD
REQUESTED FAX DATE _____
REQUESTED REPORT DATE _____

REPORT REQUIREMENTS
_____ I. Results Only
_____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw Data
_____ V. Speicalized Forms / Custom Report
Edata _____ Yes _____ No

INVOICE INFORMATION
PO#
BILL TO:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: _____ CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
[signature]	Fed Ex				
Signature: Kent Davis	Signature	Signature	Signature	Signature	Signature
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
Firm: Premo	Firm	Firm	Firm	Firm	Firm
Date/Time: 5/20/09 1800	Date/Time: 5/20/09 1800	Date/Time	Date/Time	Date/Time	Date/Time

Distribution: White - Return to Originator; Yellow - Lab Copy; Pink - Retained by Client

JSCOC-06/20/08