ALTAMONT ENVIRONMENTAL, INC.
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August 20, 2010

Mr. Ervin Lane
North Carolina Department of Environment and Natural Resources
Division of Waste Management
Solid Waste Section
1646 Mail Service Center
Raleigh, North Carolina 27699-1646

Subject: Annual Groundwater and Surface Water Sampling Results—July 2010
International Paper Company—Closed Canton Landfill 5, Permit No. 44-01
Canton, North Carolina

Dear Mr. Lane:

This letter summarizes the groundwater and surface water sampling results from the annual sampling event for the International Paper Company closed Landfill 5 (Permit # 44-01) located in Canton, North Carolina. This letter describes the methods, findings, and conclusions of the groundwater and surface water sampling event which took place on July 14, 2010.

Methods

On July 14, 2010, Altamont Environmental, Inc. (Altamont) conducted the annual groundwater and surface water sampling event at the International Paper Company (IP) Landfill 5. A Site Location Map is included as Figure 1.

Altamont personnel collected seven groundwater samples (including one duplicate sample) from monitoring wells: MW-5B1, MW-5B2, MW-5B3, MW-5C1, MW-5C2, and MW-5C3 (Figure 2). Prior to collecting groundwater samples from the monitoring wells, the static water level was measured and recorded for each well. The monitoring wells were purged and sampled using low-flow techniques in accordance with the procedures described in *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures*, United States Environmental Protection Agency (EPA), Groundwater Issues (April 1996). During purging: pH, specific conductivity, dissolved oxygen, oxidation-reduction potential (ORP), turbidity, and temperature were measured and recorded approximately every three minutes. Well purging continued until these parameters stabilized for three consecutive readings. The required stabilization criteria are as follows:

- pH values within +/- 0.1 pH unit
- Specific conductivity values within +/- 3 percent
- Temperature, dissolved oxygen, and turbidity values within +/- 10 percent
- ORP values within +/- 10 millivolts

Stabilized field parameter readings are shown in Table 1. At that time, a groundwater sample was collected using laboratory-supplied sample containers by a technician wearing a new pair of non-reactive nitrile gloves.

Surface water samples BD-UP and BD-DOWN were collected at designated locations from a Beaverdam Creek that flows in a southwesterly direction between the Landfill 5B cell and the Landfill 5C cell (Figure 2). Surface water sample BD-UP is considered representative of surface water quality upstream of the Operating Landfill; surface water sample BD-DOWN is considered representative of surface water quality downstream from the landfill. Surface water samples were collected in laboratory-supplied sample

containers by a technician wearing a new pair of non-reactive nitrile gloves. As with groundwater sampling: temperature, pH, specific conductivity, dissolved oxygen, and turbidity were measured and recorded at each surface water sampling location prior to sample collection (Table 2). Field parameters and additional observations pertaining to surface water at the Operating Landfill are provided on sampling logs, which are included in Appendix A.

In accordance with the letter included in Appendix B, dated July 18, 2003 from the North Carolina Department of Environment and Natural Resources (DENR), Solid Waste Section, to IP, Altamont is reporting analytical results for the following list of analytes for this annual sampling event:

1. Cadmium
2. Iron
3. Total Dissolved Solids (TDS)
4. Chloride
5. Sulfate

Table 2 presents current and historical groundwater data for pH and the five analytes mentioned above that were analyzed by Pace Analytical Services (Pace), a certified North Carolina laboratory. pH readings were collected by Altamont, a North Carolina certified field laboratory. Table 3 presents the current and historical surface water data for pH and the five analytes analyzed by the laboratory.

One blind duplicate (DUP-1) groundwater sample was collected from monitoring well MW-5B2 and was analyzed by Pace. The variation between the two groundwater samples collected from monitoring well MW-5B2 is minimal and is documented in Table 2.

Well sampling logs and an instrument calibration form for the monitoring event are included as Appendix C. Observations noted at each sampling point are provided on the sampling logs.

Findings

The following information summarizes the results of the water quality monitoring event:

Groundwater:

- Groundwater samples collected from MW-5B3, MW-5C1, MW-5C2, and MW-5C3 exhibit a pH less than 6.5 which is the lower limit of the Title 15A, North Carolina Administrative Code (NCAC), Subchapter 2L Groundwater Quality Standard (2L Standard).
- Cadmium was not detected in the groundwater samples collected from the referenced monitoring wells.
- Iron concentrations that exceeded the 2L Standard at 16.7, 56.3, 55.3, 58.6 milligrams per liter (mg/L), were detected in groundwater samples MW-5B1, MW-5B2, DUP-1, and MW-5B3, respectively. Iron was also detected, but did not exceed the 2L Standard of 0.3 mg/L, in groundwater samples collected from monitoring wells MW-5C1 and MW-5C3.
- Total dissolved solids (TDSs) concentrations were detected but did not exceed the 2L Standard of 1,000 mg/L in groundwater samples from monitoring wells MW-5B2, MW-5B3, MW-5C1, MW-5C2, and MW-5C3. TDS were not detected in the groundwater sample collected from monitoring well MW-5B1.
- Chloride concentrations were detected but did not exceed the 2L Standard of 250 mg/L in groundwater samples from monitoring wells MW-5B2, MW-5B3, MW-5C1, MW-5C2, and MW-5C3. Chloride was not detected in the groundwater sample collected from monitoring well MW-5B1.

- Sulfate concentrations were detected but did not exceed the 2L Standard of 250 mg/L in groundwater samples from monitoring wells MW-5B3 and MW-5C1. Sulfate was not detected in the groundwater sample collected from monitoring wells MW-5B1, MW-5B2, MW-5C2, or MW-5C3.

Surface Water:

- pH values for surface water analyzed at sample points BD-UP and BD-DOWN were within the acceptable range specified in the Title 15A, North Carolina Administrative Code (NCAC), Subchapter 2B Surface Water Quality Standard (2B Standard).
- Cadmium was not detected in either of the surface water samples.
- Iron concentrations were detected in both surface water samples but did not exceed the 2B Standard of 1.0 mg/L in samples collected from either of the surface water samples points, BD-UP nor BD-DOWN.
- TDSs concentrations were detected but did not exceed the 2B Standard of 500 mg/L in samples collected from either of the surface water sample points, BD-UP nor BD-DOWN.
- A chloride concentration was detected in the surface water sample collected from sampling point BD-DOWN, but did not exceed the 2B Standard of 250 mg/L.
- Sulfate was not detected in the surface water sample collected from either surface water sample point.

Conclusions

A comparison of current groundwater and surface water analytical results to results recorded annually since 1991 reveals that with the exception of pH and iron, the groundwater and surface water sample results appears to show a general trend toward water quality improvement.

The pH levels recorded in groundwater purged from monitoring wells that was outside of the range acceptable by the 2L Standard, are only minimally outside the acceptable range. Please note that groundwater, in unconsolidated, surficial aquifers, with a pH less than 6.5 is common according to the United States Geological Survey (USGS).

Additionally, concentrations of iron that were detected in samples collected from monitoring wells that exceed the 2L Standard appear to be decreasing, with the exception of MW-5B2. It should be noted that samples collected from monitoring wells MW-5B1, MW-5B2, and MW-5B3 exhibited higher turbidity values than the other wells associated with the landfill. These high turbidity values could indicate that the samples contained solid particles from the formation in which the monitoring wells are screened. Naturally occurring metals tend to adsorb to the surfaces of these solid particles. The concentrations of iron detected in these groundwater samples may represent both the dissolved iron in the groundwater and the iron that was adsorbed to the solid particles in the sample, potentially resulting in false positive results. The monitoring wells on landfill cell 5B have higher concentrations of iron than the monitoring wells on landfill cell 5C.

The next sampling event is scheduled for July 2011.

Altamont is pleased to provide the results for this water quality sampling event for 2010. Please call if you have any questions or need additional information. Thank you for your assistance with this project.

Sincerely,

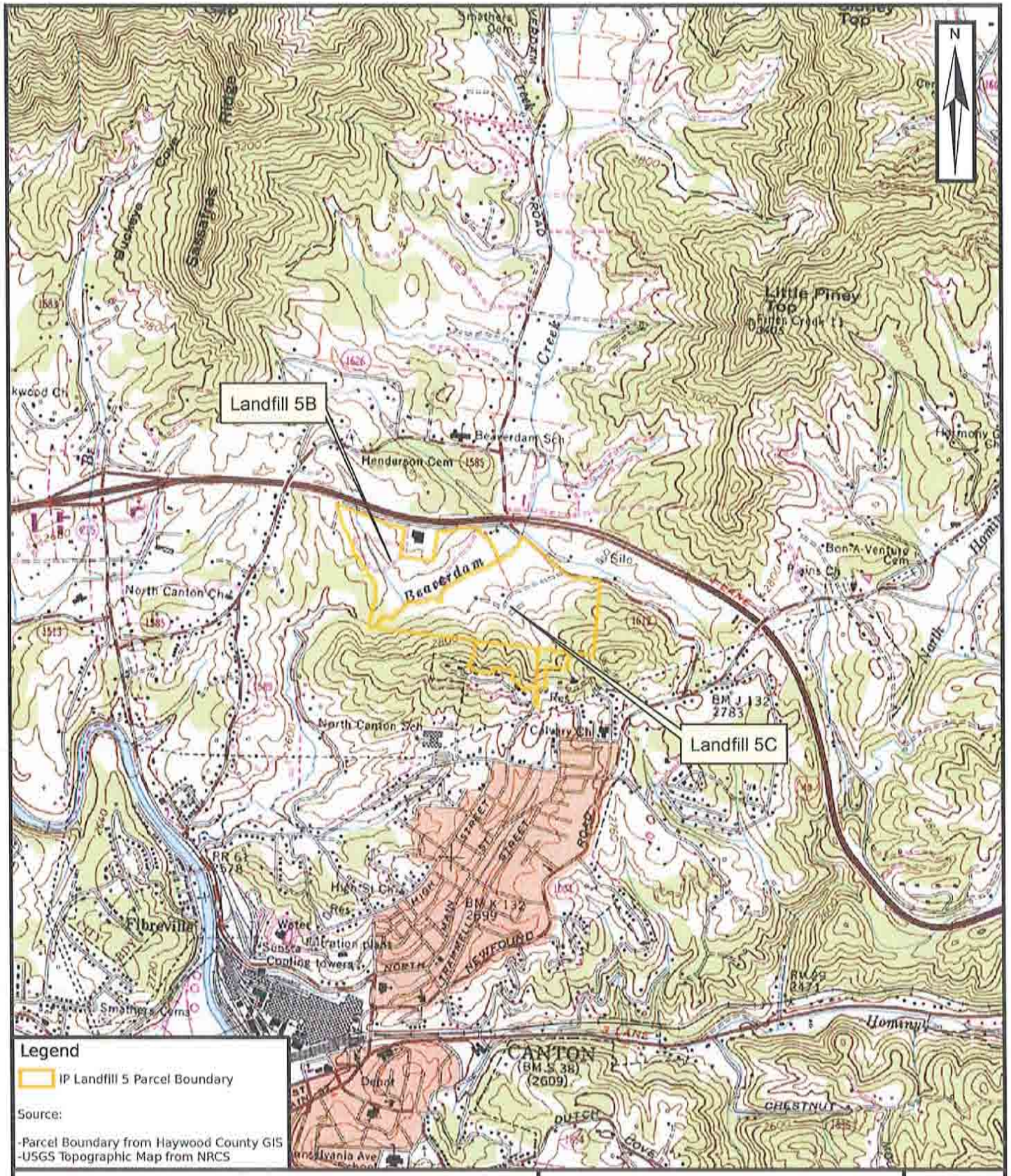
Altamont Environmental, Inc.

Joel D. Lenk, P.G.

Enclosures:
- Figure 1—Site Location Map
- Figure 2—Groundwater and Surface Water Sample Locations
- Table 1—Water Quality Field Parameters
- Table 2—Groundwater Quality Results
- Table 3—Surface Water Quality Results
- Appendix A—Laboratory Analytical Report and Chain of Custody
- Appendix B—July 18, 2003 Letter from the North Carolina Department of Environment and Natural Resources
- Appendix C—Altamont Sampling Logs and Equipment Documentation and Calibration Data Sheet

Cc: Mr. Tom Richardson, International Paper Company

FIGURES



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SITE LOCATION MAP

LANDFILL 5 (44-01)
CLOSED INTERNATIONAL PAPER LANDFILL
CANTON, NORTH CAROLINA

FIGURE 1

Drawn By: Anna Saylor
Project Manager: Joel Lenk
Client: International Paper Co.
Date: 8/13/2010

Scale
0 500 1,000 2,000 Feet

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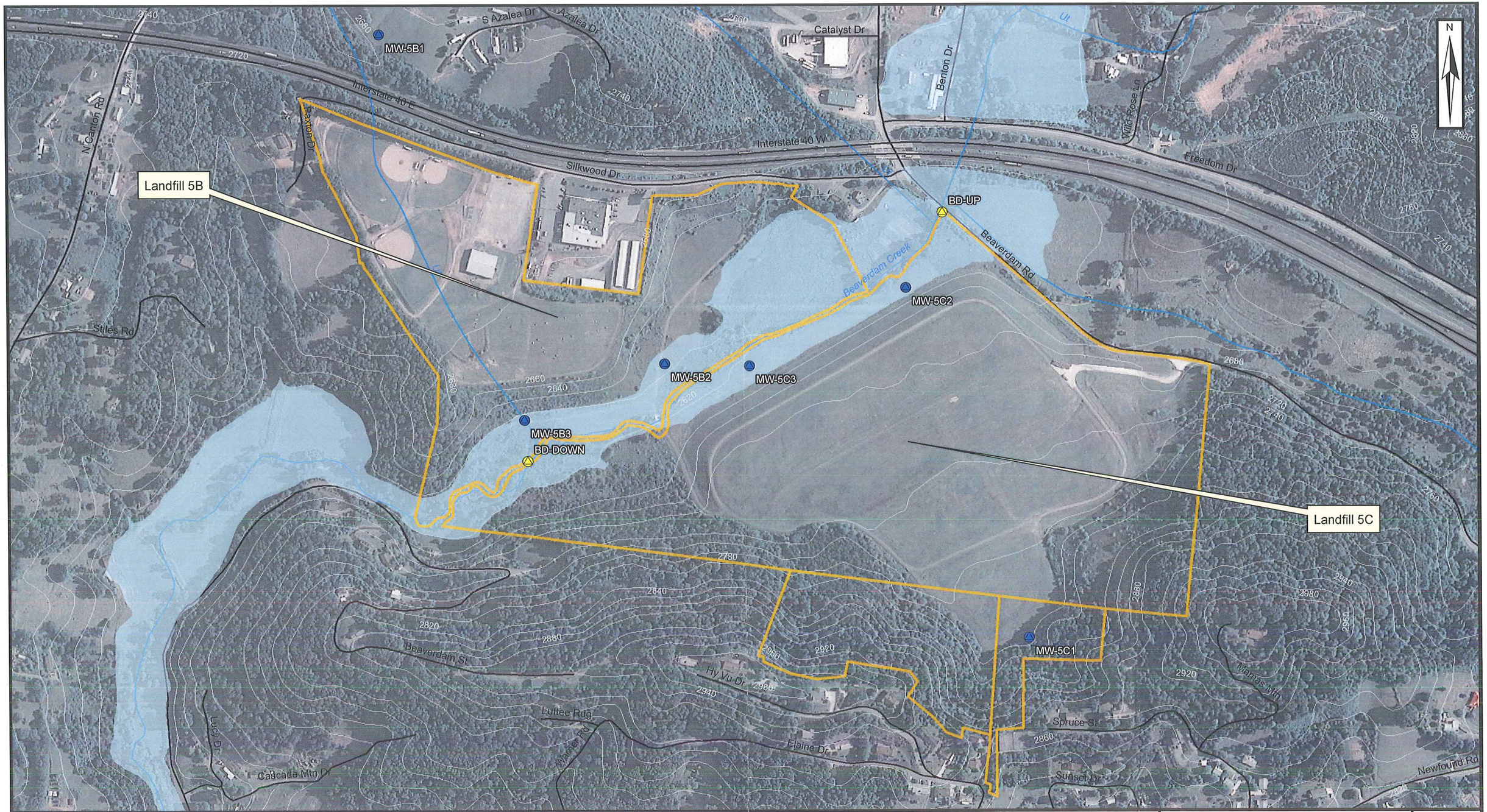

Legend

- Surface Water Sample Locations
- LF 5 Monitoring Well Locations
- IP Landfill 5 Parcel Boundary
- 100-Year Floodplain
- Haywood County Hydrology
- Haywood County Roads
- 20-Foot Interval Contours

Source:

-Parcel Boundary, Hydrology, Contours, Roads from Haywood County GIS
-Floodplain from NC One Map
-2008 Aerial from NRCS

REV.	DATE	DESCRIPTION	BY	CHK	APV

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Drawn By: Anna Saylor
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Date: 8/13/2010

Scale
0 100 200 400 Feet

GROUNDWATER AND SURFACE WATER SAMPLING LOCATIONS

LANDFILL 5 (44-01)
CLOSED INTERNATIONAL PAPER LANDFILL
CANTON, NORTH CAROLINA

FIGURE
2

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TABLES

Table 1
Water Quality Field Parameters
International Paper Landfill 5
Canton, North Carolina
July 14, 2010

Well ID	Sample Date	Total Well Depth	Depth to Water (feet)	Temperature (°C)	Specific Conductivity (µS)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)
MW-5B1	7/14/2010	40.71	9.53	13.75	30	2.36	6.51	89.9	133.8
MW-5B2	7/14/2010	20.40	4.78	15.21	322	0.54	6.62	-117.4	85.22
DUP-1	7/14/2010	20.40	4.78	15.21	322	0.54	6.62	-117.4	85.22
MW-5B3	7/14/2010	65.56	7.12	15.16	170	0.63	6.35	-42.9	172.3
MW-5C1	7/14/2010	29.55	14.38	15.38	67	4.10	5.97	211.8	4.39
MW-5C2	7/14/2010	25.92	4.26	16.55	199	2.09	6.36	146.4	3.51
MW-5C3	7/14/2010	23.80	2.19	16.26	285	2.45	5.86	205.4	4.70
BD-UP	7/14/2010	N/A	N/A	24.14	49	5.27	6.89	92.5	7.77
BD-DOWN	7/14/2010	N/A	N/A	23.24	54	3.62	6.45	36.5	13.36

Notes:
1. µS means microsiemens.
2. Depth to water measured from top of casing during initial reading.
3. S.U. indicates Standard Units.
4. DUP-1 was a duplicate sample of MW-5B2.

Table 2
Groundwater Quality Results
International Paper Landfill 5
Canton, North Carolina
July 14, 2010

Sample Location	Date	pH	Cadmium	Iron	Total Dissolved Solids	Chloride	Sulfate
2L Standards		*6.5 - 8.5*	*0.002*	*0.3*	*500*	*250*	*250*
MW-5B1	05/01/91	6.73	ND	19	20	0.62	ND
	05/01/92	6.40	ND	15	26	1.5	3.2
	05/01/93	NA	NA	NA	NA	NA	NA
	11/01/93	6.11	ND	3.1	25	2.3	3.2
	05/01/94	6.42	ND	2.5	29	ND	ND
	11/01/94	7.20	0.001	10.6	35	1.1	1.4
	05/01/95	6.60	ND	5.85	32	1.2	0.24
	11/01/95	5.80	0.001	7.808	45	1.2	1.3
	05/01/96	6.30	ND	12.77	27	0.9	ND
	11/01/96	6.80	0.001	10.43	34	2.4	ND
	05/01/97	6.60	ND	4.4	43	ND	ND
	11/01/97	7.20	ND	44	49	1.5	ND
	05/01/98	6.60	ND	2.5	85	ND	ND
	11/01/98	7.20	ND	2.6	44	2.1	ND
	05/01/99	6.70	ND	2.8	98	ND	ND
	11/01/99	6.40	ND	14	38	1	10.8
	05/01/00	5.80	0.0026	10	41	ND	2.3
	11/01/00	6.50	ND	2.8	52	ND	ND
	05/01/01	6.40	ND	1.2	ND	1.4	ND
	11/05/01	5.79	ND	5.2	35	ND	1.7
	05/28/02	6.55	ND	1.5	32	ND	ND
	12/02/02	5.12	ND	1.6	38	1.3	ND
	12/03/03	6.39	ND	1.6	90	1.2	ND
	07/20/04	6.27	ND	10	56	ND	ND
	07/13/05	5.57	ND	20	48	ND	ND
	07/10/06	6.02	ND	17	28	ND	ND
	07/27/07	3.87	ND	16	42	ND	ND
	07/22/08	6.20	ND	11.1	40	ND	ND
	07/21/09	6.11	ND	26	60	ND	ND
DUP-1	07/21/09	6.11	ND	21.1	38	ND	ND
	07/14/10	6.51	ND	16.7	ND	ND	ND

Table 2
Groundwater Quality Results
International Paper Landfill 5
Canton, North Carolina
July 14, 2010

Sample Location	Date	pH	Cadmium	Iron	Total Dissolved Solids	Chloride	Sulfate
2L Standards		*6.5 - 8.5*	*0.002*	*0.3*	*500*	*250*	*250*
MW-5B2	05/01/91	6.57	ND	35.9	192	40.3	12.5
	05/01/92	6.60	ND	70	210	31	18
	05/01/93	NA	NA	NA	NA	NA	NA
	11/01/93	5.96	ND	28	190	33	ND
	05/01/94	6.30	ND	25.001	215	42.8	7.3
	11/01/94	6.30	0.004	22.2	257	66.3	8.8
	05/01/95	6.70	0.005	50.277	187	15.3	38.3
	11/01/95	6.10	0.004	27.63	263	49.5	38.8
	05/01/96	6.20	ND	49	298	65.3	21.6
	11/01/96	6.60	0.002	19.415	327	95.4	7
	05/01/97	6.60	ND	36	280	85	2.7
	11/01/97	6.30	ND	12	290	110	7.1
	05/01/98	6.30	ND	0.12	350	99	5.1
	11/01/98	6.40	ND	47	330	96	3.3
	05/01/99	6.60	ND	170	360	81	9.13
	11/01/99	6.00	0.0022	32	410	110	132
	05/01/00	6.10	0.0041	39	350	97	13.3
	11/01/00	6.10	0.0039	29	360	120	11
	05/01/01	6.30	0.007	49	500	100	6.8
	11/05/01	6.25	0.003	23	160	120	6.9
	05/28/02	6.36	0.034	89	390	87	540
	12/02/02	5.33	0.0025	35	400	91	13
	12/03/03	6.57	ND	22	320	67	10
	07/19/04	6.21	ND	25	256	50	9.9
	07/13/05	4.42	ND	28	170	5.5	14
	07/11/06	6.63	ND	34	160	ND	28
	07/27/07	5.69	ND	33	330	65	6.9
	07/23/08	6.04	ND	26.8	496	113	6.6
	07/21/09	6.22	ND	45.6	518	103	ND
	07/14/10	6.62	ND	56.3	192	46.5	ND
DUP-1	07/14/10	6.62	ND	55.3	214	48.5	ND

Table 2
Groundwater Quality Results
International Paper Landfill 5
Canton, North Carolina
July 14, 2010

Sample Location	Date	pH	Cadmium	Iron	Total Dissolved Solids	Chloride	Sulfate
2L Standards		*6.5 - 8.5*	*0.002*	*0.3*	*500*	*250*	*250*
MW-5B3	05/01/91	6.76	ND	26.4	102	9.73	11.7
	05/01/92	6.50	ND	46	90	9.8	ND
	05/01/93	NA	NA	NA	NA	NA	NA
	11/01/93	6.14	ND	13	140	20	23
	05/01/94	6.40	ND	12.661	153	21.4	18.1
	11/01/94	6.70	0.004	23.705	142	27.1	11.2
	05/01/95	6.60	0.004	18.392	169	26.5	10.9
	11/01/95	5.90	0.004	16.407	158	30.3	7.8
	05/01/96	6.20	ND	15.9	157	31.5	9.3
	11/01/96	6.50	0.001	16.03	161	26.7	9.9
	05/01/97	6.50	0.003	16	180	30	7.9
	11/01/97	6.30	ND	26	160	31	8.9
	05/01/98	6.40	ND	38	170	39	7.4
	11/01/98	6.60	ND	17	200	36	9
	05/01/99	6.60	ND	17	190	38	7.06
	11/01/99	6.20	ND	19	180	34	3.1
	05/01/00	6.20	0.002	16	190	36	12.8
	11/01/00	6.30	0.0021	17	190	35	24
	05/01/01	6.20	0.0068	18	220	34	9.4
	11/05/01	6.78	0.0022	18	21	42	9.4
	05/28/02	6.41	0.015	91	180	34	85
	12/02/02	6.45	0.0014	13	56	31	15
	12/03/03	6.49	ND	15	180	50	11
	07/20/04	6.36	ND	35	124	20	12
	07/12/05	5.86	ND	33	160	19	17
	07/10/06	6.37	0.0011	45	120	17	15
	07/27/07	6.29	ND	36	140	17	12
	07/23/08	6.35	ND	73.6	152	17.0	13.1
DUP-1	07/23/08	6.35	ND	61.8	154	16.9	13.9
	07/21/09	6.48	0.0142	77.1	236	50.3	9.0
	07/14/10	6.35	ND	58.6	130	20.7	13.5

Table 2
Groundwater Quality Results
International Paper Landfill 5
Canton, North Carolina
July 14, 2010

Sample Location	Date	pH	Cadmium	Iron	Total Dissolved Solids	Chloride	Sulfate
2L Standards		*6.5 - 8.5*	*0.002*	*0.3*	*500*	*250*	*250*
MW-5C1	05/01/91	6.26	ND	31.3	71	7.66	12.7
	05/01/92	6.10	ND	0.3	79	7.7	9.4
	05/01/93	NA	NA	NA	NA	NA	NA
	11/01/93	5.52	ND	0.14	63	8.1	5.9
	05/01/94	5.60	ND	0.078	76	7.4	9.2
	11/01/94	6.50	ND	0.262	27	7.7	10.9
	05/01/95	6.00	0.002	0.074	84	7.5	8.5
	11/01/95	5.50	ND	0.044	95	7.9	8.4
	05/01/96	5.90	ND	765.32	51.5	6.8	8.6
	11/01/96	6.30	ND	ND	79.5	7.8	9.9
	05/01/97	6.00	ND	0.27	85	7.4	8.6
	11/01/97	6.00	ND	0.11	94	7.4	8.6
	05/01/98	5.60	ND	ND	75	5.2	10
	11/01/98	6.00	NA	NA	NA	NA	NA
	05/01/99	5.20	ND	ND	77	7.7	4
	11/01/99	5.50	ND	0.12	82	7.2	7.45
	05/01/00	6.30	ND	0.069	91	9.1	10
	11/01/00	6.20	ND	0.094	77	7.4	11
	05/01/01	5.40	ND	0.064	140	7.2	6.7
	11/05/01	5.46	ND	0.18	96	8.3	7.9
	05/28/02	6.07	ND	0.083	76	9.3	8.5
	12/02/02	6.20	ND	ND	100	6.8	12
	12/03/03	6.02	ND	ND	60	8.4	10
	07/19/04	5.80	ND	ND	76	6.8	10
	07/12/05	5.00	ND	ND	110	7.6	8.5
	07/11/06	5.37	ND	ND	90	7.1	6.8
	07/27/07	5.38	ND	0.13	120	8.8	5.3
DUP-1	07/27/07	5.38	ND	ND	98	8.8	5.2
	07/22/08	5.69	ND	ND	124	9.5	6.5
	07/21/09	5.14	ND	ND	114	9.6	7.2
	07/14/10	5.97	ND	0.284	71	8.1	7.7

Table 2
Groundwater Quality Results
International Paper Landfill 5
Canton, North Carolina
July 14, 2010

Sample Location	Date	pH	Cadmium	Iron	Total Dissolved Solids	Chloride	Sulfate
2L Standards		*6.5 - 8.5*	*0.002*	*0.3*	*500*	*250*	*250*
MW-5C2	05/01/91	7.56	ND	0.41	1607	7.30	ND
	05/01/92	6.90	ND	100	140	25	16
	05/01/93	NA	NA	NA	NA	NA	NA
	11/01/93	6.18	ND	2.3	97	11	8.6
	05/01/94	6.58	ND	0.157	99	12.5	2.2
	11/01/94	7.20	ND	0.598	99.5	15	17.3
	05/01/95	6.70	ND	11.19	96	13.7	2.1
	11/01/95	6.10	ND	3.123	103	14.5	2.1
	05/01/96	6.40	ND	6.029	83	12.6	2.2
	11/01/96	6.40	0.002	NA	104	16.2	3.3
	05/01/97	6.80	ND	3.2	90	14	ND
	11/01/97	7.20	ND	1.6	86	13	1.6
	05/01/98	6.50	ND	24	100	14	1.4
	11/01/98	5.70	NA	NA	NA	NA	NA
	05/01/99	6.60	ND	7.6	100	13	ND
	11/01/99	5.80	ND	0.32	96	11	ND
	05/01/00	5.80	ND	0.51	120	16	ND
	11/01/00	6.80	0.0016	16	110	14	6.9
	05/01/01	6.40	ND	1.2	140	13	1.2
	11/05/01	6.21	ND	2	97	15	2.8
	05/28/02	6.75	0.0014	4.1	88	15	ND
	12/02/02	4.98	ND	1.9	110	15	5.5
	12/03/03	6.61	ND	0.58	92	27	ND
	07/19/04	6.24	ND	ND	106	24	ND
	07/12/05	5.89	ND	0.26	170	28	ND
	07/11/06	6.12	ND	0.14	420	30	ND
	07/27/07	6.26	ND	0.076	210	37	ND
	07/22/08	6.31	ND	0.124	218	43.0	ND
	07/21/09	6.16	ND	0.0727	240	42.4	ND
	07/14/10	6.36	ND	ND	205	55.5	ND

Table 2
Groundwater Quality Results
International Paper Landfill 5
Canton, North Carolina
July 14, 2010

Sample Location	Date	pH	Cadmium	Iron	Total Dissolved Solids	Chloride	Sulfate
2L Standards		*6.5 - 8.5*	*0.002*	*0.3*	*500*	*250*	*250*
MW- 5C3	05/01/91	**6.18**	ND	**11.3**	315	23.9	2.3
	05/01/92	6.60	ND	**89**	430	40	5.1
	05/01/93	NA	NA	NA	NA	NA	NA
	11/01/93	**5.66**	ND	**0.39**	170	46	ND
	05/01/94	**5.82**	ND	0.171	186	52.2	1.8
	11/01/94	**6.30**	ND	**0.597**	187	55.7	2
	05/01/95	**6.40**	**0.005**	**31.08**	374	63.9	32.2
	11/01/95	**5.50**	**0.003**	**15.28**	272.5	70.2	1.9
	05/01/96	**5.70**	ND	**1.45**	242	75.6	1.9
	11/01/96	**6.00**	**0.003**	**12.5**	223	95.5	2.6
	05/01/97	6.90	ND	**2.9**	310	83	ND
	11/01/97	7.00	ND	**2.4**	350	20	8.4
	05/01/98	**5.80**	ND	0.06	350	86	1.7
	11/01/98	**5.70**	ND	**0.32**	380	92	2.2
	05/01/99	**5.80**	ND	**1.7**	330	94	7.42
	11/01/99	**5.80**	ND	**0.79**	310	96	3.1
	05/01/00	**5.50**	ND	**0.86**	280	98	ND
	11/01/00	**6.00**	ND	**6.6**	280	93	ND
	05/01/01	**5.90**	ND	**2.7**	360	93	1.1
	11/05/01	**5.83**	0.0017	**1.5**	290	100	2.6
	05/28/02	**5.90**	ND	**2**	400	96	ND
	12/02/02	**5.31**	ND	**1.2**	340	99	6.7
	12/03/03	**5.64**	ND	0.12	280	130	ND
	07/19/04	**5.50**	ND	0.072	312	97	ND
	07/13/05	**5.20**	ND	0.10	490	100	ND
	07/11/06	**5.47**	ND	ND	**980**	88	ND
	07/27/07	**5.57**	ND	ND	410	85	ND
	07/23/08	**5.64**	ND	0.13	388	88.6	ND
	07/21/09	**5.62**	ND	0.0515	366	94.1	ND
	07/14/10	**5.86**	ND	0.219	263	94.6	ND

Notes:
1. 2L Standard values were taken from Title 15A, North Carolina Administrative Code (NCAC), Subchapter 2L Groundwater Quality Standards last amended January 1, 2010.
2. **Bold** indicates exceedance of 2L Standard in monitoring wells.
3. pH is measured in Standard Units.
4. Concentrations are in milligrams per liter (mg/L).
5. ND signifies that the parameter was not detected at or above the adjusted laboratory reporting limit.
6. NA signifies that analytical data is not present or available.

Table 3
Surface Water Quality Results
International Paper Landfill 5
Canton, North Carolina
July 14, 2010

Sample Location	Date	pH	Cadmium	Iron	Total Dissolved Solids	Chloride	Sulfate
2B Standards		*6.0 - 9.0*	*0.002*	*1.0*	*500*	*250*	*250*
BD-UP	05/01/91	7.47	ND	0.96	37	1.56	ND
	05/01/92	NA	NA	1.6	NA	NA	NA
	05/01/93	NA	NA	NA	NA	NA	NA
	11/01/93	7.50	ND	0.41	75	2.9	4.1
	05/01/94	7.10	ND	0.24	37	1.9	4.3
	11/01/94	7.40	ND	1.179	56	3.3	3.7
	05/01/95	7.90	ND	1.125	49	2.5	4.1
	11/01/95	6.20	ND	0.192	72	4.2	4.9
	05/01/96	6.20	ND	1.316	34	2.6	5.9
	11/01/96	7.10	ND	1.099	43	2.9	3.7
	05/01/97	7.30	ND	0.64	62	1.5	3.1
	11/01/97	7.40	ND	0.3	38	3.4	3.8
	05/01/98	7.60	ND	ND	36	ND	3
	11/01/98	NA	NA	NA	NA	NA	NA
	05/01/99	6.70	ND	0.81	76	2.0	4.1
	11/01/99	6.60	ND	0.28	75	1.5	2.63
	05/01/00	6.70	ND	0.39	68	2.4	6.1
	11/01/00	7.20	ND	0.29	55	3.2	7.7
	05/01/01	6.90	ND	0.46	86	3.9	ND
	11/05/01	7.80	ND	0.44	64	2.9	3.7
	05/28/02	7.20	ND	0.56	62	3.2	ND
	12/02/02	6.62	ND	2.9	66	3.2	9.1
	12/03/03	7.32	ND	0.53	50	3.6	ND
	07/19/04	6.86	ND	0.88	50	ND	ND
	07/12/05	NA	ND	0.60	86	ND	ND
	07/11/06	7.7	ND	0.29	36	ND	ND
	07/27/07	5.31	ND	0.70	72	ND	ND
	07/22/08	7.22	ND	0.512	64	ND	ND
	07/21/09	6.95	ND	0.504	48.0	ND	ND
	07/14/10	6.89	ND	0.584	55.0	ND	ND

Table 3
Surface Water Quality Results
International Paper Landfill 5
Canton, North Carolina
July 14, 2010

Sample Location	Date	pH	Cadmium	Iron	Total Dissolved Solids	Chloride	Sulfate
2B Standards		*6.0 - 9.0*	*0.002*	*1.0*	*500*	*250*	*250*
BD-DOWN	05/01/91	7.47	ND	0.67	46	2.41	ND
	05/01/92	NA	NA	**1.7**	NA	NA	NA
	05/01/93	NA	NA	NA	NA	NA	NA
	11/01/93	7.45	ND	0.51	110	5.2	9.6
	05/01/94	7.04	ND	0.343	42	3.2	4
	11/01/94	7.30	ND	0.89	34	4.4	3.3
	05/01/95	7.20	ND	**1.495**	48	3.0	3.9
	11/01/95	6.40	ND	0.241	52	4.4	5.1
	05/01/96	6.70	ND	**1.513**	41	3.4	7
	11/01/96	7.20	ND	0.264	49	4.2	3.9
	05/01/97	6.80	ND	**1.3**	65	3.9	3.6
	11/01/97	7.00	ND	0.19	51	3.7	3.1
	05/01/98	7.20	ND	0.51	48	2.6	3.1
	11/01/98	NA	NA	NA	NA	NA	NA
	05/01/99	6.60	ND	0.9	75	4.7	3.54
	11/01/99	6.90	ND	0.36	60	2.6	2.63
	05/01/00	6.60	ND	0.27	59	3.1	6.9
	11/01/00	6.90	ND	0.3	87	4.2	8.1
	05/01/01	6.90	ND	0.62	**2600**	4.2	2.8
	11/05/01	7.98	ND	0.33	ND	4.7	3.8
	05/28/02	7.20	ND	0.63	66	4.4	ND
	12/02/02	6.19	ND	**7.0**	88	6.0	10
	12/03/03	7.32	ND	0.57	50	5.0	ND
	07/19/04	6.92	ND	**1.5**	62	ND	ND
	07/12/05	NA	ND	0.84	84	ND	ND
	07/10/06	7.58	ND	0.28	44	ND	ND
	07/27/07	7.03	ND	1.0	66	ND	ND
	07/22/08	6.99	ND	0.555	92.0	5.7	ND
	07/21/09	6.97	ND	0.453	56.0	ND	ND
	07/14/10	6.45	ND	0.593	57.0	5.1	ND

Notes:
1. 2B Standard values were taken from Title 15A, North Carolina Administrative Code (NCAC), Subchapter 2B Surface Water and Wetland Standards, amendment effective May 1, 2007.
2. **Bold** indicates exceedance of 2B Standard in monitoring wells.
3. pH is measured in Standard Units.
4. Concentrations are in milligrams per liter (mg/L).
5. ND signifies that the parameter was not detected at or above the adjusted laboratory reporting limit.
6. NA signifies that analytical data is not present or available.

APPENDICES

APPENDIX A
Laboratory Analytical Report and Chain of Custody

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July 28, 2010

Mr. Joel Lenk
Altamont Environmental
50 College Street
Asheville, NC 28801

RE: Project: IP GW/SW 07/15
Pace Project No.: 9273551

Dear Mr. Lenk:
Enclosed are the analytical results for sample(s) received by the laboratory on July 15, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

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

Sincerely,

Lorri Patton

Lorri Patton

lorri.patton@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: IP GW/SW 07/15
Pace Project No.: 9273551

Asheville Certification IDs
2225 Riverside Dr., Asheville, NC 28804
Connecticut Certification #: PH-0106
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
New Jersey Certification #: NC011
North Carolina Bioassay Certification #: 9
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
Pennsylvania Certification #: 68-03578
South Carolina Bioassay Certification #: 9903002
South Carolina Certification #: 9903001
Virginia Certification #: 00072

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ANALYTICAL RESULTS

Project: IP GW/SW 07/15
Pace Project No.: 9273551

Sample: MW-5B1 **Lab ID: 9273551001** Collected: 07/14/10 10:44 Received: 07/15/10 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Cadmium	ND	ug/L	1.0	1	07/17/10 11:30	07/26/10 17:31	7440-43-9	
Iron	**16700**	ug/L	50.0	1	07/17/10 11:30	07/26/10 17:31	7439-89-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	31.2	1		07/21/10 15:41		
4500 Chloride	Analytical Method: SM 4500-Cl-E							
Chloride	ND	mg/L	5.0	1		07/27/10 13:41	16887-00-6	
ASTM D516-90 Sulfate Water	Analytical Method: ASTM D516-90							
Sulfate	ND	mg/L	5.0	1		07/22/10 16:18	14808-79-8	

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ANALYTICAL RESULTS

Project: IP GW/SW 07/15
Pace Project No.: 9273551

Sample: MW-5B2 **Lab ID: 9273551002** Collected: 07/14/10 12:00 Received: 07/15/10 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Cadmium	ND	ug/L	1.0	1	07/17/10 11:30	07/26/10 17:35	7440-43-9	
Iron	**56300**	ug/L	50.0	1	07/17/10 11:30	07/26/10 17:35	7439-89-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**192**	mg/L	31.2	1		07/21/10 15:44		
4500 Chloride	Analytical Method: SM 4500-Cl-E							
Chloride	**46.5**	mg/L	10.0	2		07/27/10 13:50	16887-00-6	
ASTM D516-90 Sulfate Water	Analytical Method: ASTM D516-90							
Sulfate	ND	mg/L	5.0	1		07/22/10 16:18	14808-79-8	

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ANALYTICAL RESULTS

Project: IP GW/SW 07/15
Pace Project No.: 9273551

Sample: MW-5B3 **Lab ID: 9273551003** Collected: 07/14/10 14:10 Received: 07/15/10 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Cadmium	ND	ug/L	1.0	1	07/17/10 11:30	07/26/10 17:38	7440-43-9	
Iron	**58600**	ug/L	50.0	1	07/17/10 11:30	07/26/10 17:38	7439-89-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**130**	mg/L	31.2	1		07/21/10 15:45		
4500 Chloride	Analytical Method: SM 4500-Cl-E							
Chloride	**20.7**	mg/L	5.0	1		07/27/10 13:41	16887-00-6	
ASTM D516-90 Sulfate Water	Analytical Method: ASTM D516-90							
Sulfate	**13.5**	mg/L	5.0	1		07/22/10 16:20	14808-79-8	

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ANALYTICAL RESULTS

Project: IP GW/SW 07/15
Pace Project No.: 9273551

Sample: MW-5C1 **Lab ID: 9273551004** Collected: 07/14/10 19:32 Received: 07/15/10 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Cadmium	ND	ug/L	1.0	1	07/17/10 11:30	07/26/10 17:43	7440-43-9	
Iron	**284**	ug/L	50.0	1	07/17/10 11:30	07/26/10 17:43	7439-89-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**71.0**	mg/L	25.0	1		07/21/10 15:46		
4500 Chloride	Analytical Method: SM 4500-Cl-E							
Chloride	**8.1**	mg/L	5.0	1		07/27/10 13:41	16887-00-6	
ASTM D516-90 Sulfate Water	Analytical Method: ASTM D516-90							
Sulfate	**7.7**	mg/L	5.0	1		07/22/10 16:20	14808-79-8	

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ANALYTICAL RESULTS

Project: IP GW/SW 07/15
Pace Project No.: 9273551

Sample: MW-5C2 **Lab ID: 9273551005** Collected: 07/14/10 18:02 Received: 07/15/10 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Cadmium	ND	ug/L	1.0	1	07/17/10 11:30	07/26/10 17:46	7440-43-9	
Iron	ND	ug/L	50.0	1	07/17/10 11:30	07/26/10 17:46	7439-89-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**205**	mg/L	25.0	1		07/21/10 15:46		
4500 Chloride	Analytical Method: SM 4500-Cl-E							
Chloride	**55.5**	mg/L	10.0	2		07/27/10 13:50	16887-00-6	
ASTM D516-90 Sulfate Water	Analytical Method: ASTM D516-90							
Sulfate	ND	mg/L	5.0	1		07/22/10 16:20	14808-79-8	

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ANALYTICAL RESULTS

Project: IP GW/SW 07/15
Pace Project No.: 9273551

Sample: MW-5C3 **Lab ID: 9273551006** Collected: 07/14/10 16:32 Received: 07/15/10 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Cadmium	ND	ug/L	1.0	1	07/17/10 11:30	07/26/10 17:49	7440-43-9	
Iron	**219**	ug/L	50.0	1	07/17/10 11:30	07/26/10 17:49	7439-89-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**263**	mg/L	25.0	1		07/21/10 15:47		
4500 Chloride	Analytical Method: SM 4500-Cl-E							
Chloride	**94.6**	mg/L	20.0	4		07/27/10 14:35	16887-00-6	
ASTM D516-90 Sulfate Water	Analytical Method: ASTM D516-90							
Sulfate	ND	mg/L	5.0	1		07/22/10 16:40	14808-79-8	

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ANALYTICAL RESULTS

Project: IP GW/SW 07/15
Pace Project No.: 9273551

Sample: BD - UP **Lab ID: 9273551007** Collected: 07/14/10 17:40 Received: 07/15/10 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Cadmium	ND	ug/L	1.0	1	07/17/10 11:30	07/26/10 17:52	7440-43-9	
Iron	**584**	ug/L	50.0	1	07/17/10 11:30	07/26/10 17:52	7439-89-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**55.0**	mg/L	25.0	1		07/21/10 15:47		
4500 Chloride	Analytical Method: SM 4500-Cl-E							
Chloride	ND	mg/L	5.0	1		07/27/10 13:42	16887-00-6	
ASTM D516-90 Sulfate Water	Analytical Method: ASTM D516-90							
Sulfate	ND	mg/L	5.0	1		07/22/10 16:43	14808-79-8	

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ANALYTICAL RESULTS

Project: IP GW/SW 07/15
Pace Project No.: 9273551

Sample: BD - DOWN **Lab ID: 9273551008** Collected: 07/14/10 14:45 Received: 07/15/10 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Cadmium	ND	ug/L	1.0	1	07/19/10 12:00	07/20/10 23:29	7440-43-9	
Iron	**593**	ug/L	50.0	1	07/19/10 12:00	07/20/10 23:29	7439-89-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**57.0**	mg/L	25.0	1		07/21/10 15:48		
4500 Chloride	Analytical Method: SM 4500-Cl-E							
Chloride	**5.1**	mg/L	5.0	1		07/27/10 13:42	16887-00-6	
ASTM D516-90 Sulfate Water	Analytical Method: ASTM D516-90							
Sulfate	ND	mg/L	5.0	1		07/22/10 16:43	14808-79-8	

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ANALYTICAL RESULTS

Project: IP GW/SW 07/15
Pace Project No.: 9273551

Sample: DUP - 1 **Lab ID: 9273551009** Collected: 07/14/10 12:10 Received: 07/15/10 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Cadmium	ND	ug/L	1.0	1	07/19/10 12:00	07/20/10 23:32	7440-43-9	
Iron	**55300**	ug/L	50.0	1	07/19/10 12:00	07/20/10 23:32	7439-89-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**214**	mg/L	31.2	1		07/21/10 15:48		
4500 Chloride	Analytical Method: SM 4500-Cl-E							
Chloride	**48.5**	mg/L	10.0	2		07/27/10 13:51	16887-00-6	
ASTM D516-90 Sulfate Water	Analytical Method: ASTM D516-90							
Sulfate	ND	mg/L	5.0	1		07/22/10 16:46	14808-79-8	

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Pace Analytical Services, Inc.
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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: IP GW/SW 07/15
Pace Project No.: 9273551

QC Batch: MPRP/6684 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 MET
Associated Lab Samples: 9273551001, 9273551002, 9273551003, 9273551004, 9273551005, 9273551006, 9273551007

METHOD BLANK: 469668 Matrix: Water
Associated Lab Samples: 9273551001, 9273551002, 9273551003, 9273551004, 9273551005, 9273551006, 9273551007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium	ug/L	ND	1.0	07/23/10 22:21	
Iron	ug/L	ND	50.0	07/23/10 22:21	

LABORATORY CONTROL SAMPLE: 469669

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	500	502	100	85-115	
Iron	ug/L	5000	5220	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 469670 469671

Parameter	Units	9273418001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Cadmium	ug/L	ND	500	500	486	501	97	100	70-130	3	
Iron	ug/L	122	5000	5000	5130	5260	100	103	70-130	3	

SAMPLE DUPLICATE: 469672

Parameter	Units	9273418002 Result	Dup Result	RPD	Qualifiers
Cadmium	ug/L	ND	ND		
Iron	ug/L	4320	4460	3	

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QUALITY CONTROL DATA

Project: IP GW/SW 07/15
Pace Project No.: 9273551

QC Batch: MPRP/6693 | Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 | Analysis Description: 200.7 MET
Associated Lab Samples: 9273551008, 9273551009

METHOD BLANK: 470805 | Matrix: Water
Associated Lab Samples: 9273551008, 9273551009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium	ug/L	ND	1.0	07/20/10 22:13	
Iron	ug/L	ND	50.0	07/20/10 22:13	

LABORATORY CONTROL SAMPLE: 470806

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	500	506	101	85-115	
Iron	ug/L	5000	5020	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 470807 470808

Parameter	Units	9273326005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Cadmium	ug/L	0.0011 mg/L	500	500	493	466	98	93	70-130	6	
Iron	ug/L	7.1 mg/L	5000	5000	11900	11300	96	84	70-130	5	

SAMPLE DUPLICATE: 470809

Parameter	Units	9273640001 Result	Dup Result	RPD	Qualifiers
Cadmium	ug/L	ND	ND		
Iron	ug/L	2910	2730	7	

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QUALITY CONTROL DATA

Project: IP GW/SW 07/15
Pace Project No.: 9273551

QC Batch: WET/13156 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 9273551001, 9273551002, 9273551003, 9273551004, 9273551005, 9273551006, 9273551007, 9273551008, 9273551009

METHOD BLANK: 471939 Matrix: Water
Associated Lab Samples: 9273551001, 9273551002, 9273551003, 9273551004, 9273551005, 9273551006, 9273551007, 9273551008, 9273551009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	07/21/10 15:40	

LABORATORY CONTROL SAMPLE: 471940

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	229	92	80-120	

SAMPLE DUPLICATE: 471941

Parameter	Units	9273551001 Result	Dup Result	RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		

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QUALITY CONTROL DATA

Project: IP GW/SW 07/15
Pace Project No.: 9273551

QC Batch: WETA/7806 Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E Analysis Description: 4500 Chloride
Associated Lab Samples: 9273551001, 9273551002, 9273551003, 9273551004, 9273551005, 9273551006, 9273551007, 9273551008, 9273551009

METHOD BLANK: 473845 Matrix: Water
Associated Lab Samples: 9273551001, 9273551002, 9273551003, 9273551004, 9273551005, 9273551006, 9273551007, 9273551008, 9273551009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	5.0	07/27/10 13:40	

LABORATORY CONTROL SAMPLE: 473846

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	21.2	106	90-110	

MATRIX SPIKE SAMPLE: 473847

Parameter	Units	9273357001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	19.6	20	39.0	97	75-125	

SAMPLE DUPLICATE: 473848

Parameter	Units	9273551001 Result	Dup Result	RPD	Qualifiers
Chloride	mg/L	ND	ND		

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QUALITY CONTROL DATA

Project: IP GW/SW 07/15
Pace Project No.: 9273551

QC Batch: WETA/7779 Analysis Method: ASTM D516-90
QC Batch Method: ASTM D516-90 Analysis Description: ASTM D516-90 Sulfate Water
Associated Lab Samples: 9273551001, 9273551002, 9273551003, 9273551004, 9273551005

METHOD BLANK: 472280 Matrix: Water
Associated Lab Samples: 9273551001, 9273551002, 9273551003, 9273551004, 9273551005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	5.0	07/22/10 16:04	

LABORATORY CONTROL SAMPLE: 472281

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	20	21.2	106	90-110	

MATRIX SPIKE SAMPLE: 472282

Parameter	Units	9273364015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	38.1	20	69.6	157	75-125	M0

MATRIX SPIKE SAMPLE: 472284

Parameter	Units	9273496001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	ND	20	19.1	93	75-125	

SAMPLE DUPLICATE: 472283

Parameter	Units	9273364016 Result	Dup Result	RPD	Qualifiers
Sulfate	mg/L	43.7	42.4	3	

SAMPLE DUPLICATE: 472285

Parameter	Units	9273626006 Result	Dup Result	RPD	Qualifiers
Sulfate	mg/L	ND	ND		

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QUALITY CONTROL DATA

Project: IP GW/SW 07/15
Pace Project No.: 9273551

QC Batch: WETA/7780 Analysis Method: ASTM D516-90
QC Batch Method: ASTM D516-90 Analysis Description: ASTM D516-90 Sulfate Water
Associated Lab Samples: 9273551006, 9273551007, 9273551008, 9273551009

METHOD BLANK: 472286 Matrix: Water
Associated Lab Samples: 9273551006, 9273551007, 9273551008, 9273551009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	5.0	07/22/10 16:40	

LABORATORY CONTROL SAMPLE: 472287

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	20	19.6	98	90-110	

MATRIX SPIKE SAMPLE: 472288

Parameter	Units	9273551006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	ND	20	26.4	119	75-125	

MATRIX SPIKE SAMPLE: 472290

Parameter	Units	9273551008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	ND	20	25.1	113	75-125	

SAMPLE DUPLICATE: 472289

Parameter	Units	9273551007 Result	Dup Result	RPD	Qualifiers
Sulfate	mg/L	ND	ND		

SAMPLE DUPLICATE: 472291

Parameter	Units	9273551009 Result	Dup Result	RPD	Qualifiers
Sulfate	mg/L	ND	ND		

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QUALIFIERS

Project: IP GW/SW 07/15
Pace Project No.: 9273551

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

ANALYTE QUALIFIERS

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

1410890

Section A Required Client Information:

Company: International Paper
Address:
Email To:
Phone: Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Joel Lenk
Copy To:
Purchase Order No.: 2055.0501
Project Name: IP GW/SW
Project Number: 2055.0501

Section C Invoice Information:

Attention: Joel Lenk
Company Name: Affiliated Env
Address: 231 Haywood St
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: _____

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION °C	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Requested Analysis Filtered Y/N): Iron, Cadmium	Chloride, Sulfate	TDS, Sulfide	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-5B1	WT	G	7/14/10	1044			13	3	2		1						X	X	X		
2	MW-5B2	WT	G	7/14/10	1200			15	3	2		1						X	X	X		
3	MW-5B3	WT	G	7/14/10	1410			15	3	2		1						X	X	X		
4	MW-5C1	WT	G	7/14/10	1932			15.1	3	2		1						X	X	X		
5	MW-5C2	WT	G	7/14/10	1902			16	3	2		1						X	X	X		
6	MW-5C3	WT	G	7/14/10	1632			16	3	2		1						X	X	X		
7	BD UP	WT	G	7/14/10	1746			24	3	2		1						X	X	X		
8	BD-DOWN	WT	G	7/14/10	1445			23	3	2		1						X	X	X		
9	DUP-1	WT	G	7/14/10	1210			15	3	2		1						X	X	X		
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Anna Sailor	7/15/10	955	[signature]	7/15/10	0955	5.4	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

2

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

APPENDIX B
Altamont Sampling Logs and Equipment Documentation and Calibration Data Sheets

ALTAMONT ENVIRONMENTAL, INC.
ENGINEERING & HYDROGEOLOGY
231 HAYWOOD STREET, ASHEVILLE, NC 28801
TEL.828.281.3350 FAC.828.281.3351
WWW.ALTAMONTENVIRONMENTAL.COM

Low-Flow Sampling Log

PROJECT NAME: IP Landfill #5 — PROJECT NUMBER: 2055.0501
LOCATION: Canton, NC — DATE: 7/14/10
SAMPLING PERSONNEL: AS, JL — WEATHER: P.cloudy

Well ID: HW-5B1 — Arrive at Well: 10:00
Screen Interval: 40-30 bgs — Start Time: 10:19
Depth to Water: 9.53 toc — Sample Time: 10:44
Stickup: 1.6 — Finish Sample Time: 10:51
Depth of Pump Intake: 37 toc — Leave Well: 11:15
Drawdown Set: 10.23 toc

COMMENTS: Initially water v. turbid well normal to recharge

Time	DTW (feet)	Temp (°C)	Specific Cond. ~~(µS)~~ mS	DO (mg/L)	pH (S.U.) *report to 0.1 S.U.*	ORP (mV)	Turbidity (NTU)
10:20	9.73	15.05	0.034	6.84	8.83	122.0	174.7
10:23	10.03	13.97	0.031	3.67	7.96	99.0	248.0
10:26	10.13	13.74	0.030	2.65	7.40	94.9	225.8
10:29	10.21	13.79	0.030	2.19	7.17	91.7	198.4
10:32	10.23	13.85	0.030	2.08	7.02	89.2	185.8
10:35	10.23	13.92	0.030	2.00	6.91	85.6	180.2
10:38	10.23	13.87	0.030	2.07	6.73	90.3	162.4
10:41	10.23	13.91	0.030	2.18	6.65	88.0	137.1
10:44	10.23	13.75	0.030	2.36	6.51	89.9	133.8

Time between recharge during sample collection: 15 sec.

Sampling Personnel Signature: [signature] Date: 7/14/10

NOTES:

STABILIZATION
3 successive readings, 3 minutes apart:
within +/- 10% DO and turbidity; +/- 3% Conductivity; +/- 0.1 pH unit; +/- 10 mV for ORP
from *EPA - Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures,* April 1996

bgs = below ground surface
toc = top of casing
°C = degrees Celsius
µS = micro-Siemen per cubic centimeter
DO = dissolved oxygen
mg/L = milligrams per liter
Samples are analyzed immediately upon collection.

S.U. = standard units
ORP = oxidation reduction potential
mV = millivolt
NTU = nephelometric turbidity units

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Low-Flow Sampling Log

PROJECT NAME: IP Landfill #5 — PROJECT NUMBER: 2055.0501
LOCATION: Canton, NC — DATE: 7/14/10
SAMPLING PERSONNEL: A. Saylor J. Lewis — WEATHER: Hot, P. Cloudy

Well ID:	MW-5B2		Arrive at Well:	11:20
Screen Interval:	10-20	bgs	Start Time:	11:31
Depth to Water:	4.78	toc	Sample Time:	12:00
Stickup:	0.0		Finish Sample Time:	12:11
Depth of Pump Intake:	~~5.0~~ 17.0	toc	Leave Well:	12:23
Drawdown Set:	5.00	toc		

COMMENTS: DUP-1 taken here at 12:10

	Time	DTW (feet)	Temp (°C)	Specific Cond. ~~(µS)~~ mS	DO (mg/L)	pH (S.U.) *report to 0.1 S.U.*	ORP (mV)	Turbidity (NTU)
	11:35	4.98	15.55	0.430	4.30	6.47	-90.7	308.5
	11:38	5.00	15.40	0.426	1.42	6.45	-98.3	187.3
	11:41	5.00	15.58	0.344	1.13	6.44	-101.1	162.2
44	11:44	5.00	15.34	0.366	1.01	6.49	-106.2	131.0
	11:47	5.00	15.33	0.333	0.75	6.46	-109.6	125.0
49	11:50	5.00	15.14	0.326	0.67	6.59	-115.3	94.77
	11:53	5.00	15.60	0.324	0.60	6.55	-114.9	88.87
50	11:56	5.00	15.46	0.321	0.55	6.57	-115.0	90.79
	11:59	5.00	15.11	0.322	0.54	6.62	-117.4	85.22

Time between recharge during sample collection: 30 sec

Sampling Personnel Signature: [signature] — Date: 7/14/10

NOTES:

STABILIZATION

3 successive readings, 3 minutes apart:

within +/- 10% DO and turbidity; +/- 3% Conductivity; +/- 0.1 pH unit; +/- 10 mV for ORP

from *EPA - Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures,* April 1996

bgs = below ground surface
toc = top of casing
°C = degrees Celsius
µS = micro-Siemen per cubic centimeter
DO = dissolved oxygen
mg/L = milligrams per liter
S.U. = standard units
ORP = oxidation reduction potential
mV = millivolt
NTU = nephelometric turbidity units
Samples are analyzed immediately upon collection.

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Low-Flow Sampling Log

PROJECT NAME: IP Landfill #5 — PROJECT NUMBER: 2055.05 01
LOCATION: Canton, NC — DATE: 7/14/10
SAMPLING PERSONNEL: A. Saylor J Lenk — WEATHER: Hot P. cloudy

Well ID:	MW-5B3	Arrive at Well:	1311
Screen Interval:	55-65 bgs	Start Time:	13:27
Depth to Water:	7.12 toc	Sample Time:	14:10
Stickup:	2.0	Finish Sample Time:	14:13
Depth of Pump Intake:	62.0 toc	Leave Well:	14:30
Drawdown Set:	8.5 toc		

COMMENTS: VARIABLE CLOUD COVER AFFECTING TEMP READINGS

Time	DTW (feet)	Temp (°C)	Specific Cond. (µS) mS	DO (mg/L)	pH (S.U.) report to 0.1 S.U.	ORP (mV)	Turbidity (NTU)
13:30	7.38	16.3	0.170 mS	3.50	6.82	-48.6	119.5
13:30	7.51	15.6	0.169	1.24	6.56	-47.6	—
13:36	7.62	16.21	0.169	1.01	6.49	-46.8	23.16
13:39	7.89	14.92	0.171	2.24	6.39	-33.5	61.37
13:42	8.06	14.61	0.170	1.81	6.31	-33.7	59.13
13:45	8.21	14.61	0.169	0.92	6.29	-35.8	84.83
13:48	8.35	14.57	0.169	0.77	6.29	-36.9	93.11
13:51	8.44	14.96	0.170	0.70	6.30	-39.4	137.90
13:54	8.51	14.60	0.170	0.86	6.31	-39.5	110.30
13:57	8.51	15.08	0.170	0.66	6.36	-40.7	120.50
14:00	8.51	15.10	0.170	0.81	6.31	-43.0	152.60
14:03	8.51	15.16	0.170	0.63	6.34	-43.5	156.9
14:06	8.51	15.17	0.170	0.61	6.34	-43.5	156.4
14:09	8.51	15.16	0.170	0.63	6.35	-42.9	172.5

Time between recharge during sample collection: 8 SECONDS

Sampling Personnel Signature: [signature] Date: 7/14/10

NOTES:

STABILIZATION
3 successive readings, 3 minutes apart:
within +/- 10% DO and turbidity; +/- 3% Conductivity; +/- 0.1 pH unit; +/- 10 mV for ORP
from *EPA - Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures,* April 1996

bgs = below ground surface
toc = top of casing
°C = degrees Celsius
µS = micro-Siemen per cubic centimeter
DO = dissolved oxygen
mg/L = milligrams per liter
Samples are analyzed immediately upon collection.

S.U. = standard units
ORP = oxidation reduction potential
mV = millivolt
NTU = nephelometric turbidity units

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ENGINEERING & HYDROGEOLOGY
231 HAYWOOD STREET, ASHEVILLE, NC 28801
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WWW.ALTAMONTENVIRONMENTAL.COM

Low-Flow Sampling Log

PROJECT NAME: IP Landfill #5 — PROJECT NUMBER: 2055.0561
LOCATION: Canton, NC — DATE: 7/14/10
SAMPLING PERSONNEL: A. Saylor J. Lenk — WEATHER: Hot P. Cloudy

Well ID:	MW-5C1		Arrive at Well:	18:40
Screen Interval:	20-30	bgs	Start Time:	19:00
Depth to Water:	14.38	toc	Sample Time:	19:32
Stickup:	1 ft		Finish Sample Time:	19:38
Depth of Pump Intake:	24 ft	toc	Leave Well:	19:48
Drawdown Set:	14.34	toc		

COMMENTS:

Time	DTW (feet)	Temp (°C)	Specific Cond. ~~(µS)~~ mS	DO (mg/L)	pH (S.U.) *report to 0.1 S.U.*	ORP (mV)	Turbidity (NTU)
19:08	14.41	12.79	0.067	4.66	5.95	205.0	5.83
19:20	14.34	13.30	0.066	5.01	5.83	222.4	4.24
1923	14.34	14.92	0.066	4.27	5.87	219.3	3.81
1926	14.34	15.38	0.066	4.12	5.89	217.1	4.20
1929	14.34	15.38	0.067	4.14	5.97	212.1	4.13
1932	14.34	15.38	0.067	4.10	5.97	211.8	4.39

16
14.34
26.09

Time between recharge during sample collection: 0-1 min

Sampling Personnel Signature: [signature] Date: 7/14/10

NOTES:

STABILIZATION
3 successive readings, 3 minutes apart:
within +/- 10% DO and turbidity; +/- 3% Conductivity; +/- 0.1 pH unit; +/- 10 mV for ORP
from *EPA - Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures,* April 1996

bgs = below ground surface
toc = top of casing
°C = degrees Celsius
µS = micro-Siemen per cubic centimeter
DO = dissolved oxygen
mg/L = milligrams per liter
Samples are analyzed immediately upon collection.

S.U. = standard units
ORP = oxidation reduction potential
mV = millivolt
NTU = nephelometric turbidity units

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Low-Flow Sampling Log

PROJECT NAME: IP Landfill #5 — PROJECT NUMBER: 2055.0561
LOCATION: Canton, NC — DATE: 7/14/10
SAMPLING PERSONNEL: A. Snyder J. Lenk — WEATHER: Hot & Cloudy

Well ID:	MW-5C2		Arrive at Well:	1700
Screen Interval:	15-25	bgs	Start Time:	1706
Depth to Water:	4.26	toc	Sample Time:	1802
Stickup:	1.0 ft		Finish Sample Time:	18:18
Depth of Pump Intake:	19	toc	Leave Well:	18:28
Drawdown Set:	9.2	toc		

COMMENTS:

Time	DTW (feet)	Temp (°C)	Specific Cond. (µS)	DO (mg/L)	pH (S.U.) *report to 0.1 S.U.*	ORP (mV)	Turbidity (NTU)
6.0 1708	4.69	14.40	0.205	0.163	6.68	95.5	3.71
1711	5.01	13.72	0.199	2.89	6.39	123.8	2.31
1714	5.62	13.63	0.199	2.04	6.26	138.2	5.64
1717	5.70	13.60	0.199	1.96	6.25	140.5	10.61
10 1720	6.89	13.99	0.197	1.65	6.18	153.6	37.09
9.2 1749	9.2	14.81	0.198	3.86	6.70	122.8	5.56
1752	9.2	14.36	0.198	3.95	6.58	132.0	6.37
1755	9.2	15.13	0.198	2.35	6.41	143.9	6.02
1758	9.2	15.96	0.198	2.18	6.38	145.6	5.65
1800	9.2	16.38	0.198	2.16	6.37	146.0	2.69
1801	9.2	16.55	0.199	2.09	6.36	146.4	3.51

Time between recharge during sample collection: 1-3 min

Sampling Personnel Signature: [signature] Date: 7/14/10

NOTES:

STABILIZATION
3 successive readings, 3 minutes apart:
within +/- 10% DO and turbidity; +/- 3% Conductivity; +/- 0.1 pH unit; +/- 10 mV for ORP
from *EPA - Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures*, April 1996

bgs = below ground surface
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°C = degrees Celsius
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Samples are analyzed immediately upon collection.

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Low-Flow Sampling Log

PROJECT NAME: IP Landfill #5 — PROJECT NUMBER: 2055.0501
LOCATION: Canton, NC — DATE: 7/14/10
SAMPLING PERSONNEL: A. Saylor J. Lent — WEATHER: Hot P. Cloudy

Well ID:	MW-5CB		Arrive at Well:	1508
Screen Interval:	14-24	bgs	Start Time:	1509
Depth to Water:	2.19	toc	Sample Time:	1632
Stickup:	0.0		Finish Sample Time:	1645
Depth of Pump Intake:	19.0	toc	Leave Well:	1655
Drawdown Set:	7.0	toc		

COMMENTS: Very Slow to recharge

Time	DTW (feet)	Temp (°C)	Specific Cond. (µS) µS	DO (mg/L)	pH (S.U.) *report to 0.1 S.U.*	ORP (mV)	Turbidity (NTU)
1511	~~2.29 15.79~~	15.79	0.287	6.82	6.40	152.4	5.68
1514	2.40	14.62	0.285	4.11	6.05	181.5	2.61
1517	2.75	14.56	0.286	4.10	6.02	190.1	3.93
1520	2.82	14.37	0.286	3.84	6.00	191.5	2.98
1523	2.92	14.06	0.284	3.31	5.95	194.9	4.39
1526	3.05	13.86	0.285	3.21	5.92	197.0	4.09
3.74 1529	3.18	13.88	0.284	3.03	5.89	198.2	6.29
1532	3.29	13.80	0.284	2.99	5.88	199.2	4.19
1535	3.59	13.61	0.284	2.94	5.83	202.4	3.25
1538	3.69	13.83	0.284	2.95	5.84	200.3	4.07
1541	3.69	14.46	0.284	3.07	5.86	200.1	4.89
4.30 1544	3.97	14.08	0.284	2.80	5.85	200.1	4.06
1547	4.29	13.40	0.284	2.66	5.83	205.0	3.51
5.0 1550	7.00	13.51	0.283	3.00	5.76	205.7	3.99
6.0 1621	7.00	15.31	0.283	2.55	5.84	212.4	4.24
1625	7.00	15.86	0.281	2.59	5.84	208.6	6.56
1627	7.00	16.04	0.284	2.49	5.85	206.3	5.00
1629	7.00	16.26	0.285	2.45	5.86	205.4	4.70

Time between recharge during sample collection: ~2 min

Sampling Personnel Signature: Date: 7/14/10

NOTES:

STABILIZATION
3 successive readings, 3 minutes apart:
within +/- 10% DO and turbidity; +/- 3% Conductivity; +/- 0.1 pH unit; +/- 10 mV for ORP
from *EPA - Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures,* April 1996

bgs = below ground surface
toc = top of casing
°C = degrees Celsius
µS = micro-Siemen per cubic centimeter
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mg/L = milligrams per liter
Samples are analyzed immediately upon collection.

S.U. = standard units
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NTU = nephelometric turbidity units

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Surface Water Sampling Log

PROJECT NAME: IP Landfill #5 DATE: 7/14/10
PROJECT NUMBER: 2055.05 WEATHER: Hot P. Cloudy
SAMPLING PERSONNEL: A. Saylor J. Lenk

SAMPLE NAME: BD-UP

COMMENTS:

SAMPLE METHOD: GRAB SYRINGE PUMP BAILER-DISP. OTHER:

TIME	TEMP (°C)	SPECIFIC COND. ~~(µS)~~ mS	DISSOLVED OXYGEN (mg/L)	pH (S.U.) *report to 0.1 S.U.*	OXIDATION REDUCTION POTENTIAL (mV)	TURBIDITY (NTU)	COMMENTS
1740	24.14	0.049	5.27	6.89	92.5	7.77	

SAMPLING CONTAINER	NUMBER OF CONTAINERS	REQUESTED ANALYSIS
500 mL PLASTIC	1	Sulfate, TDS
250 mL PLASTIC	2	Metals 200.7 / Chloride
125 mL PLASTIC		
40 mL GLASS		
1 L GLASS		
OTHER		

VEGETATION: OK ACCESS: OK

Sampling Personnel Signature: Date:

Notes: °C = degrees Celsius
µS = micro-Siemen per cubic centimeter
mg/L = milligrams per liter
S.U. = standard units
mV = millivolt
NTU = nephelometric turbidity units
Samples are analyzed immediately upon collection.

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Surface Water Sampling Log

PROJECT NAME: IP Landfill #5
DATE: 7/14/10
PROJECT NUMBER: 2055.05 01
WEATHER: Hot P. Cloudy
SAMPLING PERSONNEL: A Saylor J. Leist

SAMPLE NAME: BB-DOWN

COMMENTS:

SAMPLE METHOD: GRAB SYRINGE PUMP BAILER-DISP. OTHER:

TIME	TEMP (°C)	SPECIFIC COND. ~~(µS)~~ mS	DISSOLVED OXYGEN (mg/L)	pH (S.U.) *report to 0.1 S.U.*	OXIDATION REDUCTION POTENTIAL (mV)	TURBIDITY (NTU)	COMMENTS
1445	23.24	0.054	3.62	6.45	36.5	13.36	

SAMPLING CONTAINER	NUMBER OF CONTAINERS	REQUESTED ANALYSIS
500 mL PLASTIC	1	Sulfate, TDS
250 mL PLASTIC	2	Metals 200.7 / Chloride
125 mL PLASTIC		
40 mL GLASS		
1 L GLASS		
OTHER		

VEGETATION: ok ACCESS: ok

Sampling Personnel Signature: [signature] Date: 7/14/10

Notes: °C = degrees Celsius
µS = micro-Siemen per cubic centimeter
mg/L = milligrams per liter
S.U. = standard units
mV = millivolt
NTU = nephelometric turbidity units
Samples are analyzed immediately upon collection.

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Equipment Documentation & Instrument Calibration Data Sheet

Calibration Documentation

Project Name: IP Landfill #5
Person Conducting Calibration: E. Yurkovich
Project Number: 2055.05
Date of Calibration: 7/14/2010
Project Location: Canton, NC
Date of Field Measurements: 7/14/2010

Equipment Documentation
Equipment or meters used to take measurements (e.g. water level meters, survey equipment, etc.):

Equipment Type	Serial Number	Brand	Date of Use
150-ft Water Level	26154	Solinist	
150-ft Water Level	22754	Solinist	
150-ft Water Level	150	Testwell	
150-ft Drawdown	MP30-1527	QED	7/14/2010
Other			

Micro TPW Turbidity Meter

Calibration Standards Exp Date	Instrument Serial #	Instrument Reading		
		0.02 NTU	10.0 NTU	1000 NTU
	200601045	Initial: 895	Initial: 14.29	Initial: 271.3
		Cal:	Cal:	Cal:
		Time:	Time:	Time:

YSI 556 Multiparameter Meter

Instrument Serial Number	07D100979						
Instrument Readings							Calibration Expiration Date
Dissolved Oxygen	Initial: 8.09	Cal: 7.98	mmHg: 707.6	Time: 838			NA
QC*	AM Time:	Meas:	Mid Day Time:	Check:	PM Time:	Check:	NA
pH 7 S.U. *report to 0.1 S.U.*	Initial: 6.94	Cal: 7.00	Time: 804				Sept 2011
pH 4 S.U. *report to 0.1 S.U.*	Initial: 4.34	Cal: 4.00	Time: 813				June 2010
pH 10 S.U. *report to 0.1 S.U.*	Initial: 10.23	Cal: 10.04	Time: 819				March 2011
QC* pH 7 S.U. *report to 0.1 S.U.*	AM Time: 830	Meas: 7.01	Mid Day Time:	Check:	PM Time:	Check:	Sept 2011
Spec. Cond. 447/84/23 mS**	Initial: 500	Cal: 447	Time: 759				August 2010
QC* 84 mS	AM Time: 824	Meas: 85	Mid Day Time:	Check:	PM Time:	Check:	July 2010
ORP 200 mV	Initial: 204.8	Cal: 200.0	Time: 800				July 2010

Comments:
Signature: [signature] Date: 7/14/10

Notes:
1. Electronic equipment calibrated according to the manufacturer's operation manual.
2. Specific Conductivity should be calibrated according to values representative of historic range.
3. Order of Calibration is as follows : Specific Conductivity, pH 7, pH 4, pH 10, ORP, QC checks.
4. QC Acceptable Ranges: pH +/- 0.1 S.U. and Specific Conductivity 10% of the true value. If readings are out of these ranges, meter needs to be recalibrated.
5. * Indicates that a QC check must be performed in the morning, afternoon, and the end of the day, or every four hours.
6. ** Indicates to choose a Specific Conductivity buffer of 447, 84, or 23 mS which is closest to historical readings from the project locati