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).
- 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):

Altamont Environmental, Inc.

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

Name: Stu Ryman Phone: 828-381-3350

E-mail: sryman@altamontenvironmental.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
International Paper Company Landfill No. 5 Areas B & C	Beaverdam Road Canton, Haywood County, North Carolina	44-01	.0500	July 21 and 22, 2015

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.

Stuart A. Ryman — Professional Geologist — 828.281.3350

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

Signature — 10.23.15 — Date

Affix NC Licensed/ Professional Geologist Seal

231 Haywood Street, Asheville, North Carolina 28801

Facility Representative Address

#C-2185

NC PE Firm License Number (if applicable effective May 1, 2009)

Revised 6/2009

ALTAMONT ENVIRONMENTAL, INC.
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October 23, 2015

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 2015
International Paper Company—Closed Landfill 5, Permit No. 44-01
Canton, North Carolina

Dear Ms. Drummond:

This letter report 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 that took place on July 21 and 22, 2015.

Methods

On July 21 and 22, 2015, Altamont Environmental, Inc. (Altamont) performed the annual groundwater and surface-water sampling event at the Closed 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 wells were opened and allowed to equilibrate and the static water level was measured and recorded for each well. The monitoring wells were then 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 3 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 by a technician wearing a new pair of non-reactive nitrile gloves and placed directly into laboratory-supplied sample containers.

Surface-water samples, BD-UP and BD-DOWN, were collected at designated locations from Beaverdam Creek, which 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 landfill; surface-water sample BD-DOWN is considered representative of surface-water quality downstream from the landfill. Surface-water samples were collected by a technician wearing a new pair of non-reactive nitrile gloves and placed directly into laboratory-supplied sample containers. As with groundwater sampling: temperature, pH, specific conductivity, dissolved oxygen, ORP, and turbidity were measured and recorded at each surface-water sampling location prior to sample collection (Table 1). Field parameters and additional observations pertaining to surface-water quality at the landfill are provided on sampling logs, which are included in Appendix A. The instrument calibration forms for the monitoring event are also 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), Division of Waste Management (DWM), Solid Waste Section (SWS) 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

The laboratory analytical results and the field parameters for the groundwater and surface-water samples collected at the landfill are listed in Table 1, as well as in the Electronic Data Deliverable (EDD) format specified by the DENR SWS of the DWM (most recently updated on May 5, 2010). Table 2 presents all analytical results that were above the applicable Solid Waste Section Limits (SWSLs). Table 3 presents only the concentrations of analytes detected in groundwater and/or surface-water samples that exceeded their respective Title 15A, North Carolina Administrative Code (NCAC), Subchapter 2L Groundwater Quality Standard (2L standards) (including Interim Maximum Allowable Concentrations [IMACs], if applicable), groundwater protection standards (GWPSs), or Title 15A, NCAC, Subchapter 2B Surface-Water Quality Standard (2B standards).

Groundwater and surface-water samples were analyzed by Prism Laboratories, Inc. (Prism) a certified North Carolina laboratory. Acidity or alkalinity (pH) readings were collected by Altamont, a North Carolina certified field laboratory. Table 4 presents current and historical groundwater data for pH and the five analytes mentioned above. Table 5 presents the current and historical surface-water data for pH and the five analytes analyzed by the laboratory. The laboratory analytical report issued by Prism and chain-of-custody documentation are included in Appendix C.

One blind duplicate groundwater sample (DUP-1) was collected from monitoring well MW-5C1 and was also analyzed by Prism. The variation between the two groundwater samples collected from monitoring well MW-5C1 is minimal and is documented in Table 1.

Findings

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

Groundwater

- Groundwater samples collected from MW-5B1, MW-5B2, MW-5B3, MW-5C1, MW-5C2, and MW-5C3 exhibited a pH less than 6.5 standard units (SU), which is the lower limit of the 2L standard range of 6.5 SU to 8.5 SU.
- Cadmium was detected in monitoring wells MW-5B1, MW-5B3, MW-5C1, MW-5C2, and MW-5C3 at estimated concentrations ranging from 0.025 micrograms per liter (µg/L) to 0.35 µg/L during this monitoring event. Cadmium was not detected at or above the 2L standard in any sample collected during this monitoring event.
- Iron concentrations exceeded the 2L standard (300 µg/L) in samples collected from monitoring wells MW-5B1, MW-5B2, and MW-5B3 at concentrations of 7,300 µg/L, 20,000 µg/L, and 46,000 µg/L, respectively. Iron was also detected, but did not exceed the 2L standard, in the groundwater samples collected from monitoring wells MW-5C2 and MW-5C3.
- TDS concentrations were detected but did not exceed the 2L standard of 500,000 µg/L in groundwater samples collected from monitoring wells MW-5B1, MW-5B2, MW-5B3, MW-5C1, MW-5C2, and MW-5C3.
- Chloride concentrations were detected but did not exceed the 2L standard of 250,000 µg/L in groundwater samples collected from all site monitoring wells.
- Sulfate concentrations were detected but did not exceed the 2L standard of 250,000 µg/L in groundwater samples collected from monitoring wells MW-5B2, MW-5B3, MW-5C1, MW-5C2, and MW-5C3. Sulfate was not detected in the groundwater sample collected from monitoring well MW-5B1.

Surface Water

- The pH values for surface-water samples BD-UP and BD-DOWN were within the 2B standard range of 6.0 SU to 9.0 SU.
- Cadmium was not detected in sample BD-UP, but was detected at an estimated concentration of 0.028 µg/L in sample BD-DOWN, which is well below the applicable SWSL and 2B standard.
- Iron was detected in both surface-water samples and exceeded the 2B standard for iron (1,000 µg/L) in the sample collected from surface-water sample location BD-DOWN (4,900 µg/L).
- TDS was detected but did not exceed the 2B standard of 500,000 µg/L in samples collected from either of the surface-water sample locations.
- Chloride and sulfate were both detected in the surface-water samples collected from surface-water sampling locations BD-UP and BD-DOWN. Concentrations of these constituents did not exceed the 2B standard in either surface-water sampling location.

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 appear to show a general trend toward water-quality improvement.

The pH levels that were recorded in groundwater purged from the monitoring wells were outside of the range acceptable by the 2L standard, for all of the wells. Please note that groundwater with a pH less than 6.5 in unconsolidated, surficial aquifers, is common in this region according to the North Carolina Geological Survey, *A Hydrogeochemical Atlas of North Carolina* (July 1993). Additionally, contents of the landfill, which are assumed to be a mixture of paper mill waste and municipal wastewater treatment plant waste, likely have a pH that is higher than the upper limit of the 2L standard for pH and would not be expected to cause a reduction of groundwater pH.

The pH levels recorded in both surface-water samples collected at BD-UP and BD-DOWN were within the range acceptable by the 2B standard.

Concentrations of iron that were detected in groundwater samples collected from the monitoring wells that exceed the 2L standard appear to be decreasing over time, with the exception of concentrations detected in groundwater samples collected from monitoring well MW-5B1, MW-5B2, and MW-5B3. Please note that monitoring well MW-5B1 is upgradient of the site and is likely representative of background water quality and may indicate that iron concentrations in groundwater are naturally higher in that area of the landfill.

Samples collected from monitoring wells MW-5B1, MW-5B2, and MW-5B3 exhibited high-turbidity values. Naturally occurring metals tend to adsorb to solid particles/sediment. These high-turbidity values indicate that the samples likely contained solid particles. The concentrations of iron detected in these groundwater samples may represent both the dissolved iron in the groundwater and the iron that adsorbed to the solid particles contained in the sample, potentially resulting in false-positive results.

The iron concentrations present in the surface-water sample collected at BD-DOWN exceeded the 2B standard. The concentration of iron detected in the surface-water sample downstream location (BD-DOWN) was higher than the concentration of iron detected in the sample collected upstream of the site (BD-UP). However, turbidity measured at BD-DOWN was more than three times higher than turbidity measured at BD-UP, indicating that the sample collected from BD-DOWN likely contained sediment. The high iron concentration measured in the sample collected from BD-DOWN may have been attributable to naturally occurring metals that have absorbed to sediment contained in the sample.

The next water-quality sampling event for the Closed International Paper Company Landfill 5 is scheduled for July 2016.

Altamont appreciates your assistance with this project. Please feel free to contact me if you have any questions or need additional information.

Sincerely,

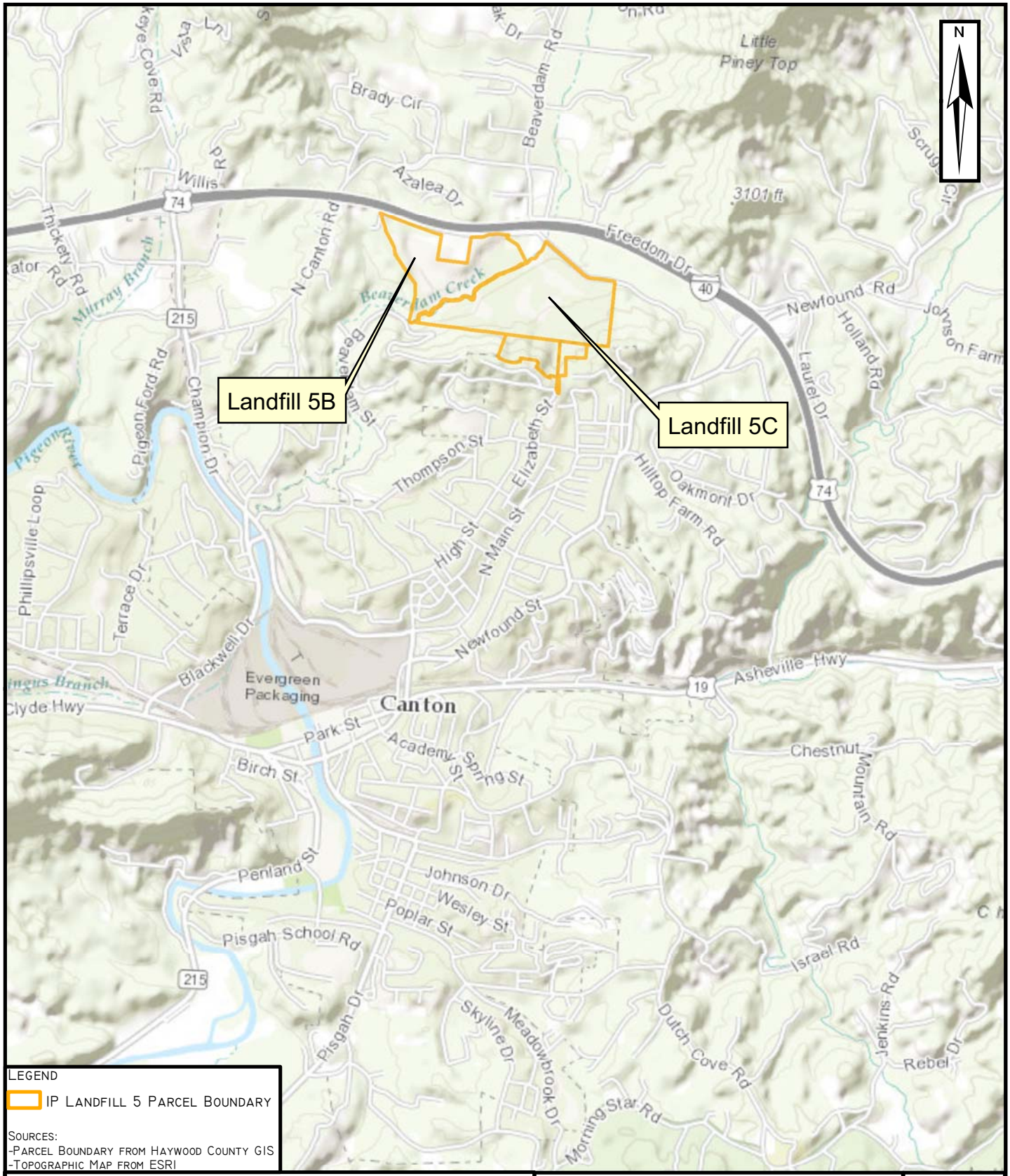
ALTAMONT ENVIRONMENTAL, INC.

Stuart A. Ryman, P.G.

Enclosures:
Figure 1—Site Location Map
Figure 2—Groundwater and Surface-Water Sampling Locations
Table 1—Analytical Data and Field Parameters
Table 2—Solid Waste Section Limit Exceedance Notification
Table 3—Water Quality Standard Limit Exceedance Notification
Table 4—Historic Groundwater Quality Results
Table 5—Historic Surface-Water Quality Results
Appendix A—Altamont Sampling Logs and Equipment Documentation and Calibration Data Sheet
Appendix B—July 18, 2003 Letter from the North Carolina Department of Environment and Natural Resources
Appendix C—Laboratory Analytical Report and Chain of Custody

cc: Mr. Tom Richardson, International Paper Company

FIGURES



LEGEND

IP LANDFILL 5 PARCEL BOUNDARY

SOURCES:
-PARCEL BOUNDARY FROM HAYWOOD COUNTY GIS
-TOPOGRAPHIC MAP FROM ESRI

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SITE LOCATION MAP

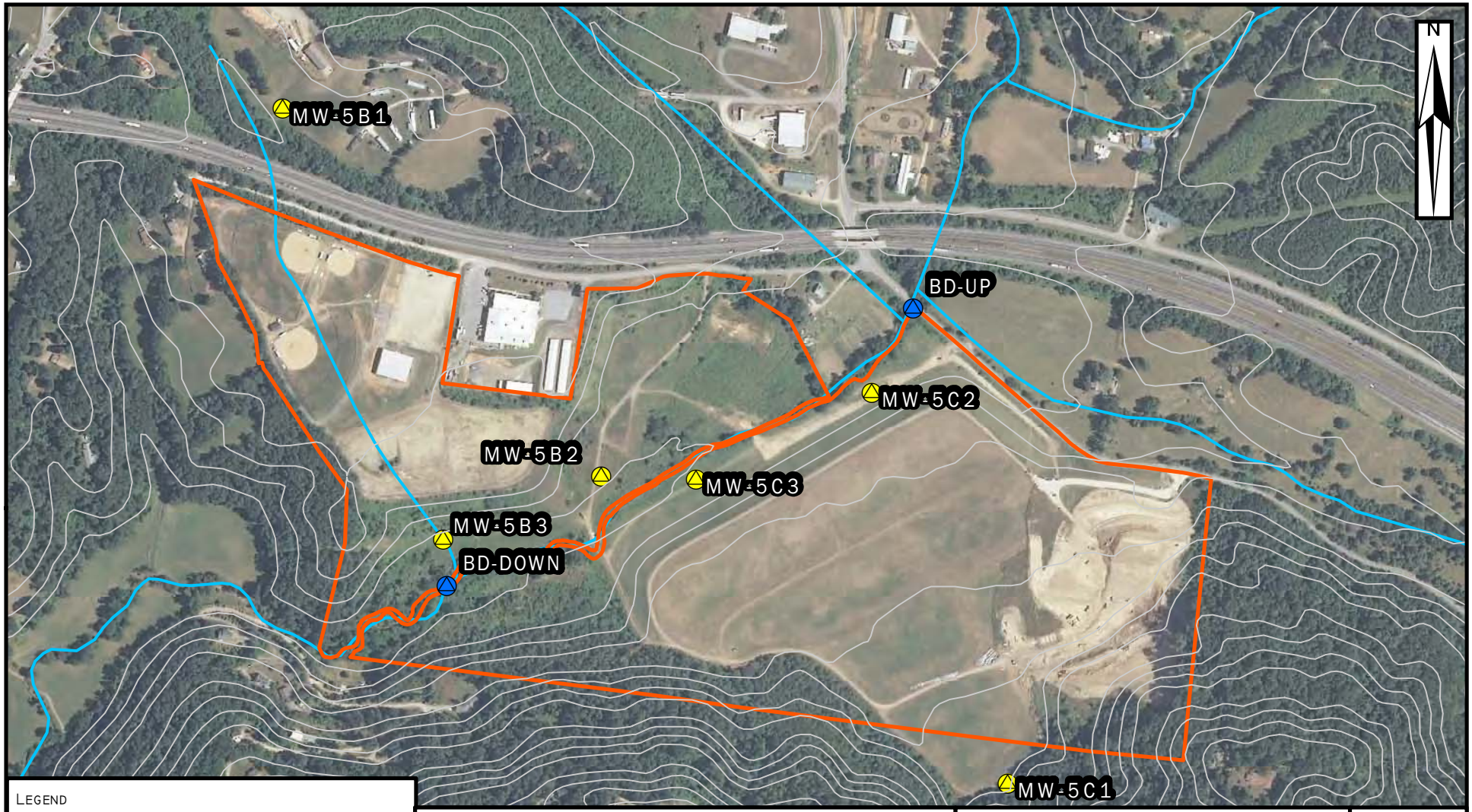
CLOSED INTERNATIONAL PAPER LANDFILL 5
PERMIT #44-01
CANTON, NORTH CAROLINA

FIGURE 1

DRAWN BY: ALEX LESUEUR
PROJECT MANAGER: STU RYMAN
CLIENT: INTERNATIONAL PAPER CO.
DATE: 07/27/2015

SCALE
0 1,500 3,000 Feet

P:\IP\LF 5\FIGURES\GIS\SITE LOCATION MAP.MXD



LEGEND

- Surface Water Sample Locations
- 20ft Contours
- Monitoring Wells
- Landfill 5 Parcel Boundary
- Streams

DATA SOURCE: Parcel, Elevation, Stream, and Base Map Data from Haywood County GIS

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DRAWN BY: ALEX LESUEUR
PROJECT MANAGER: BRIAN GANT
CLIENT: INTERNATIONAL PAPER
DATE: 7/29/2015

SCALE
0 300 600
FEET

SITE LAYOUT MAP

CLOSED INTERNATIONAL PAPER LANDFILL 5
SOLID WASTE PERMIT #44-01
500 BEAVERDAM ROAD
CANTON, HAYWOOD COUNTY, NORTH CAROLINA

FIGURE
2

P:\IP\LF 5\FIGURES\GIS\FIGURE 2 - SAMPLING LOCATIONS.MXD

TABLES

Table 1
Analytical Data and Field Parameters
Closed International Paper Landfill 5 (Permit 44-01), Canton, North Carolina

FACILITY PERMIT	WELL ID	CAS NUMBER	SWS ID	PARAMETER	RESULT	UNITS	QUALIFIER	METHOD	MDL	MRL	SWSL	DILUTION FACTOR	COLLECT DATE	EXTRACTION DATE	ANALYSIS DATE	NC LABORATORY CERTIFICATION NUMBER
44-01	4401-MW5B1	7440-43-9	34	Cadmium	0.083	µg/L	J	6020A	0.019	1.0	1	1	07/22/2015	07/23/2014	07/24/2014	40
44-01	4401-MW5B1	7439-89-6	340	Iron	**7,300**	µg/L		6020A	16	100	300	1	07/22/2015	07/23/2014	07/24/2014	40
44-01	4401-MW5B1	16887-00-6	455	Chloride	1,100	µg/L		9056A	78	1,000	NE	1	07/22/2015		07/30/2014	40
44-01	4401-MW5B1	14808-79-8	315	Sulfate	1,000	µg/L	U	9056A	380	1,000	250,000	1	07/22/2015		07/30/2014	40
44-01	4401-MW5B1	SW311	311	Total Dissolved Solids	36,000	µg/L			1,400	5,000	NE	1	07/22/2015		07/25/2014	40
44-01	4401-MW5B1	7782-44-7	356	Dissolved Oxygen	2.78	mg/L					NE		07/22/2015			
44-01	4401-MW5B1	SW336	336	Oxygen Reduction Potential	144.3	mV					NE		07/22/2015			
44-01	4401-MW5B1	SW320	320	pH	**6.23**	SU					NE		07/22/2015			
44-01	4401-MW5B1	SW323	323	Specific Conductivity	34	µS					NE		07/22/2015			
44-01	4401-MW5B1	SW325	325	Temperature	15.87	°C					NE		07/22/2015			
44-01	4401-MW5B1	SW330	330	Turbidity	159.7	NTU					NE		07/22/2015			
44-01	4401-MW5B1	SW318	318	Depth to Water	9.75	ft					NE		07/22/2015			
44-01	4401-MW5B1	SW411	411	Total Well Depth	40.7	ft					NE		07/22/2015			
44-01	4401-MW5B2	7440-43-9	34	Cadmium	1.0	µg/L	U	6020A	0.019	1.0	1	1	07/22/2015	07/23/2014	07/24/2014	40
44-01	4401-MW5B2	7439-89-6	340	Iron	**20,000**	µg/L		6020A	160	1000	300	10	07/22/2015	07/23/2014	07/24/2014	40
44-01	4401-MW5B2	16887-00-6	455	Chloride	34,000	µg/L		9056A	78	1,000	NE	1	07/22/2015		07/30/2014	40
44-01	4401-MW5B2	14808-79-8	315	Sulfate	13,000	µg/L	J	9056A	380	1,000	250,000	1	07/22/2015		07/30/2014	40
44-01	4401-MW5B2	SW311	311	Total Dissolved Solids	250,000	µg/L		SM 2540C	1,400	5,000	NE	1	07/22/2015		07/25/2014	40
44-01	4401-MW5B2	7782-44-7	356	Dissolved Oxygen	1.47	mg/L					NE		07/22/2015			
44-01	4401-MW5B2	SW336	336	Oxygen Reduction Potential	-10.3	mV					NE		07/22/2015			
44-01	4401-MW5B2	SW320	320	pH	**6.25**	SU					NE		07/22/2015			
44-01	4401-MW5B2	SW323	323	Specific Conductivity	340	µS					NE		07/22/2015			
44-01	4401-MW5B2	SW325	325	Temperature	15.07	°C					NE		07/22/2015			
44-01	4401-MW5B2	SW330	330	Turbidity	59.18	NTU					NE		07/22/2015			
44-01	4401-MW5B2	SW318	318	Depth to Water	4.78	ft					NE		07/22/2015			
44-01	4401-MW5B2	SW411	411	Total Well Depth	20.4	ft					NE		07/22/2015			
44-01	4401-MW5B3	7440-43-9	34	Cadmium	0.19	µg/L	J	6020A	0.019	1.0	1	1	07/21/2015	07/23/2014	07/24/2014	40
44-01	4401-MW5B3	7439-89-6	340	Iron	**46,000**	µg/L		6020A	160	1,000	300	10	07/21/2015	07/23/2014	07/24/2014	40
44-01	4401-MW5B3	16887-00-6	455	Chloride	25,000	µg/L		9056A	78	1,000	NE	1	07/21/2015		07/30/2014	40
44-01	4401-MW5B3	14808-79-8	315	Sulfate	12,000	µg/L	J	9056A	380	1,000	250,000	1	07/21/2015		07/30/2014	40
44-01	4401-MW5B3	SW311	311	Total Dissolved Solids	170,000	µg/L		SM 2540C	1,400	5,000	NE	1	07/21/2015		07/25/2014	40
44-01	4401-MW5B3	7782-44-7	356	Dissolved Oxygen	1.27	mg/L					NE		07/21/2015			
44-01	4401-MW5B3	SW336	336	Oxygen Reduction Potential	-15.6	mV					NE		07/21/2015			
44-01	4401-MW5B3	SW320	320	pH	**6.43**	SU					NE		07/21/2015			
44-01	4401-MW5B3	SW323	323	Specific Conductivity	250	µS					NE		07/21/2015			
44-01	4401-MW5B3	SW325	325	Temperature	21.27	°C					NE		07/21/2015			
44-01	4401-MW5B3	SW330	330	Turbidity	196.9	NTU					NE		07/21/2015			
44-01	4401-MW5B3	SW318	318	Depth to Water	5.87	ft					NE		07/21/2015			
44-01	4401-MW5B3	SW411	411	Total Well Depth	65.56	ft					NE		07/21/2015			

Table 1
Analytical Data and Field Parameters
Closed International Paper Landfill 5 (Permit 44-01), Canton, North Carolina

FACILITY PERMIT	WELL ID	CAS NUMBER	SWS ID	PARAMETER	RESULT	UNITS	QUALIFIER	METHOD	MDL	MRL	SWSL	DILUTION FACTOR	COLLECT DATE	EXTRACTION DATE	ANALYSIS DATE	NC LABORATORY CERTIFICATION NUMBER
44-01	4401-MW5C1	7440-43-9	34	Cadmium	0.025	µg/L	J	6020A	0.019	1.0	1	1	07/21/2015	07/23/2014	07/24/2014	40
44-01	4401-MW5C1	7439-89-6	340	Iron	100	µg/L	U	6020A	16	100	300	1	07/21/2015	07/23/2014	07/24/2014	40
44-01	4401-MW5C1	16887-00-6	455	Chloride	8,200	µg/L		9056A	78	1,000	NE	1	07/21/2015		07/30/2014	40
44-01	4401-MW5C1	14808-79-8	315	Sulfate	4,000	µg/L	J	9056A	380	1,000	250,000	1	07/21/2015		07/30/2014	40
44-01	4401-MW5C1	SW311	311	Total Dissolved Solids	130,000	µg/L		SM 2540C	1,400	5,000	NE	1	07/21/2015		07/25/2014	40
44-01	4401-MW5C1	7782-44-7	356	Dissolved Oxygen	9.07	mg/L					NE		07/21/2015			
44-01	4401-MW5C1	SW336	336	Oxygen Reduction Potential	216.8	mV					NE		07/21/2015			
44-01	4401-MW5C1	SW320	320	pH	**5.32**	SU					NE		07/21/2015			
44-01	4401-MW5C1	SW323	323	Specific Conductivity	108	µS					NE		07/21/2015			
44-01	4401-MW5C1	SW325	325	Temperature	14.45	°C					NE		07/21/2015			
44-01	4401-MW5C1	SW330	330	Turbidity	5.61	NTU					NE		07/21/2015			
44-01	4401-MW5C1	SW318	318	Depth to Water	15.52	ft					NE		07/21/2015			
44-01	4401-MW5C1	SW411	411	Total Well Depth	30.0	ft					NE		07/21/2015			
44-01	4401-MW5C2	7440-43-9	34	Cadmium	0.11	µg/L	J	6020A	0.019	1.0	1	1	07/21/2015	07/23/2014	07/24/2014	40
44-01	4401-MW5C2	7439-89-6	340	Iron	190	µg/L	J	6020A	16	100	300	1	07/21/2015	07/23/2014	07/24/2014	40
44-01	4401-MW5C2	16887-00-6	455	Chloride	63,000	µg/L		9056A	78	1,000	NE	1	07/21/2015		07/30/2014	40
44-01	4401-MW5C2	14808-79-8	315	Sulfate	1,900	µg/L	J	9056A	380	1,000	250,000	1	07/21/2015		07/30/2014	40
44-01	4401-MW5C2	SW311	311	Total Dissolved Solids	290,000	µg/L		SM 2540C	1,400	5,000	NE	1	07/21/2015		07/25/2014	40
44-01	4401-MW5C2	7782-44-7	356	Dissolved Oxygen	0.66	mg/L					NE		07/21/2015			
44-01	4401-MW5C2	SW336	336	Oxygen Reduction Potential	138.4	mV					NE		07/21/2015			
44-01	4401-MW5C2	SW320	320	pH	**6.34**	SU					NE		07/21/2015			
44-01	4401-MW5C2	SW323	323	Specific Conductivity	315	µS					NE		07/21/2015			
44-01	4401-MW5C2	SW325	325	Temperature	19.08	°C					NE		07/21/2015			
44-01	4401-MW5C2	SW330	330	Turbidity	9.78	NTU					NE		07/21/2015			
44-01	4401-MW5C2	SW318	318	Depth to Water	4.32	ft					NE		07/21/2015			
44-01	4401-MW5C2	SW411	411	Total Well Depth	25.92	ft					NE		07/21/2015			
44-01	4401-MW5C3	7440-43-9	34	Cadmium	0.35	µg/L	J	6020A	0.019	1.0	1	1	07/21/2015	07/23/2014	07/24/2014	40
44-01	4401-MW5C3	7439-89-6	340	Iron	79	µg/L	J	6020A	16	100	300	1	07/21/2015	07/23/2014	07/24/2014	40
44-01	4401-MW5C3	16887-00-6	455	Chloride	86,000	µg/L		9056A	78	1,000	NE	1	07/21/2015		07/30/2014	40
44-01	4401-MW5C3	14808-79-8	315	Sulfate	2,800	µg/L	J	9056A	380	1,000	250,000	1	07/21/2015		07/30/2014	40
44-01	4401-MW5C3	SW311	311	Total Dissolved Solids	340,000	µg/L		SM 2540C	1400	5,000	NE	1	07/21/2015		07/25/2014	40
44-01	4401-MW5C3	7782-44-7	356	Dissolved Oxygen	3.61	mg/L					NE		07/21/2015			
44-01	4401-MW5C3	SW336	336	Oxygen Reduction Potential	192.3	mV					NE		07/21/2015			
44-01	4401-MW5C3	SW320	320	pH	**5.80**	SU					NE		07/21/2015			
44-01	4401-MW5C3	SW323	323	Specific Conductivity	353	µS					NE		07/21/2015			
44-01	4401-MW5C3	SW325	325	Temperature	18.65	°C					NE		07/21/2015			
44-01	4401-MW5C3	SW330	330	Turbidity	15.96	NTU					NE		07/21/2015			
44-01	4401-MW5C3	SW318	318	Depth to Water	1.68	ft					NE		07/21/2015			
44-01	4401-MW5C3	SW411	411	Total Well Depth	24.0	ft					NE		07/21/2015			

Table 1
Analytical Data and Field Parameters
Closed International Paper Landfill 5 (Permit 44-01), Canton, North Carolina

FACILITY PERMIT	WELL ID	CAS NUMBER	SWS ID	PARAMETER	RESULT	UNITS	QUALIFIER	METHOD	MDL	MRL	SWSL	DILUTION FACTOR	COLLECT DATE	EXTRACTION DATE	ANALYSIS DATE	NC LABORATORY CERTIFICATION NUMBER
44-01	4401-BDDOWN	7440-43-9	34	Cadmium	0.028	µg/L	J	6020A	0.019	1.0	1	1	07/22/2015	07/23/2014	07/24/2014	40
44-01	4401-BDDOWN	7439-89-6	340	Iron	**4,900**	µg/L		6020A	16	100	300	1	07/22/2015	07/23/2014	07/24/2014	40
44-01	4401-BDDOWN	16887-00-6	455	Chloride	5,500	µg/L		9056A	78	1,000	NE	1	07/22/2015		07/30/2014	40
44-01	4401-BDDOWN	14808-79-8	315	Sulfate	2,700	µg/L	J	9056A	380	1,000	250,000	1	07/22/2015		07/30/2014	40
44-01	4401-BDDOWN	SW311	311	Total Dissolved Solids	76,000	µg/L		SM 2540C	1,400	5,000	NE	1	07/22/2015		07/29/2014	40
44-01	4401-BDDOWN	7782-44-7	356	Dissolved Oxygen	9.40	mg/L					NE		07/22/2015			
44-01	4401-BDDOWN	SW336	336	Oxygen Reduction Potential	40.5	mV					NE		07/22/2015			
44-01	4401-BDDOWN	SW320	320	pH	7.12	SU					NE		07/22/2015			
44-01	4401-BDDOWN	SW323	323	Specific Conductivity	82	µS					NE		07/22/2015			
44-01	4401-BDDOWN	SW325	325	Temperature	19.17	°C					NE		07/22/2015			
44-01	4401-BDDOWN	SW330	330	Turbidity	55.36	NTU					NE		07/22/2015			
44-01	4401-BDUP	7440-43-9	34	Cadmium	1.0	µg/L	U	6020A	0.019	1.0	1	1	07/22/2015	07/23/2014	07/24/2014	40
44-01	4401-BDUP	7439-89-6	340	Iron	510	µg/L		6020A	16	100	300	1	07/22/2015	07/23/2014	07/24/2014	40
44-01	4401-BDUP	16887-00-6	455	Chloride	3,900	µg/L		9056A	78	1,000	NE	1	07/22/2015		07/30/2014	40
44-01	4401-BDUP	14808-79-8	315	Sulfate	2,000	µg/L	J	9056A	380	1,000	250,000	1	07/22/2015		07/30/2014	40
44-01	4401-BDUP	SW311	311	Total Dissolved Solids	74,000	µg/L		SM 2540C	1,400	5,000	NE	1	07/22/2015		07/29/2014	40
44-01	4401-BDUP	7782-44-7	356	Dissolved Oxygen	8.82	mg/L					NE		07/22/2015			
44-01	4401-BDUP	SW336	336	Oxygen Reduction Potential	111.0	mV					NE		07/22/2015			
44-01	4401-BDUP	SW320	320	pH	6.71	SU					NE		07/22/2015			
44-01	4401-BDUP	SW323	323	Specific Conductivity	74	µS					NE		07/22/2015			
44-01	4401-BDUP	SW325	325	Temperature	19.58	°C					NE		07/22/2015			
44-01	4401-BDUP	SW330	330	Turbidity	17.49	NTU					NE		07/22/2015			
44-01	4401-DUP1	7440-43-9	34	Cadmium	0.034	µg/L	J	6020A	0.019	1.0	1	1	07/21/2015	07/23/2014	07/24/2014	40
44-01	4401-DUP1	7439-89-6	340	Iron	100	µg/L	U	6020A	16	100	300	1	07/21/2015	07/23/2014	07/24/2014	40
44-01	4401-DUP1	16887-00-6	455	Chloride	8,100	µg/L		9056A	78	1,000	NE	1	07/21/2015		07/30/2014	40
44-01	4401-DUP1	14808-79-8	315	Sulfate	4,000	µg/L	J	9056A	380	1,000	250,000	1	07/21/2015		07/30/2014	40
44-01	4401-DUP1	SW311	311	Total Dissolved Solids	110,000	µg/L		SM 2540C	1,400	5,000	NE	1	07/21/2015		07/29/2014	40
44-01	4401-DUP1	7782-44-7	356	Dissolved Oxygen	9.07	mg/L					NE		07/21/2015			
44-01	4401-DUP1	SW336	336	Oxygen Reduction Potential	216.8	mV					NE		07/21/2015			
44-01	4401-DUP1	SW320	320	pH	**5.32**	SU					NE		07/21/2015			
44-01	4401-DUP1	SW323	323	Specific Conductivity	108	µS					NE		07/21/2015			
44-01	4401-DUP1	SW325	325	Temperature	14.45	°C					NE		07/21/2015			
44-01	4401-DUP1	SW330	330	Turbidity	5.61	NTU					NE		07/21/2015			
44-01	4401-DUP1	SW318	318	Depth to Water	15.52	ft					NE		07/21/2015			
44-01	4401-DUP1	SW411	411	Total Well Depth	30.0	ft					NE		07/21/2015			

Table 1
Analytical Data and Field Parameters
Closed International Paper Landfill 5 (Permit 44-01), Canton, North Carolina

FACILITY PERMIT	WELL ID	CAS NUMBER	SWS ID	PARAMETER	RESULT	UNITS	QUALIFIER	METHOD	MDL	MRL	SWSL	DILUTION FACTOR	COLLECT DATE	EXTRACTION DATE	ANALYSIS DATE	NC LABORATORY CERTIFICATION NUMBER

Notes:

1. "CAS Number" is a unique number assigned by the Chemical Abstracts Service (CAS) to all identified parameters.
2. "SWS ID" is the Solid Waste Section Identification Number.
3. "Result" is analytical data reported by the laboratory in units of micrograms per liter (µg/L) or milligrams per liter (mg/L).
4. Qualifiers in non-italicized (roman type) text are laboratory data qualifiers or "flags". "U" is used for parameters not detected at concentrations above the method detection limit (MDL). "J" is used for parameters detected at estimated concentrations above the MDL but below the laboratory's method reporting limit (MRL) and the Solid Waste Section Limit (SWSL). An italicized *J*-flag is a data qualifier added by Altamont per DENR requirement to reflect a detected concentration that is greater than MDL and the laboratory's MRL but less than the SWSL.
5. "Method" is the analytical method used to analyze the constituents.
6. "MDL" is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero.
7. "MRL" is the minimum concentration of a target analyte that can be accurately determined by the referenced method. MRL is listed under "practical quantitation limit" (PQL) column in the analytical report.
8. "SWSL" is the Solid Waste Section Limit. This limit (identified by DENR) is the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy.
9. "Dilution Factor" is reported as a single number indicating dilution performed prior to analysis. A value of 1 indicates that the sample was not diluted prior to analysis.
10. "Collect Date" is the date on which the sample was collected in the field.
11. "Extraction Date" is the date on which the sample was prepared/extracted for analysis. If no extraction date is listed, then no separate preparation/extraction was required for analysis.
12. "Analysis Date" is the date on which the sample was analyzed by the lab.
13. Bold numbers indicate a result equal to or in exceedance of the 2L standard, 2B standard, or groundwater protection standard (GWPS). If no 2L standard exists, then values are compared to the GWPS.
14. 2L standard is from "North Carolina Administrative Code, Title 15A: Department of Environment and Natural Resources, Subchapter 2L - Groundwater Classifications and Standards," DENR (last amended on April 1, 2013).
15. 2B standard is from "North Carolina Administrative Code, Title 15A: Department of Environment and Natural Resources, Subchapter 2B - Surface Water and Wetland Standards," DENR (last amended on May 1, 2007).
16. GWPS is pursuant to "15A NCAC 13B .1634," DENR. Current standards were obtained from http://www.wastenotnc.org/sw/swenvmonitoringlist.asp (last amended on June 13, 2011).
17. "NE" means Not Established. Blank cells indicate that there is no information relevant to the respective row.

Table 2
Solid Waste Section Limit Exceedance Notification
Closed International Paper Landfill 5 (Permit 44-01), Canton, North Carolina

FACILITY PERMIT	WELL ID	CAS NUMBER	SWS ID	PARAMETER	RESULT	UNITS	METHOD	MDL	MRL	SWSL	COLLECT DATE
GROUNDWATER SAMPLES											
44-01	4401-MW5B1	7439-89-6	340	Iron	**7,300**	µg/L	EPA 200.7	50.0	50.0	300	07/22/2015
44-01	4401-MW5B2	7439-89-6	340	Iron	**20,000**	µg/L	EPA 200.7	50.0	50.0	300	07/22/2015
44-01	4401-MW5B3	7439-89-6	340	Iron	**46,000**	µg/L	EPA 200.7	50.0	50.0	300	07/21/2015
SURFACE WATER SAMPLES											
44-01	4401-BDDOWN	7439-89-6	340	Iron	**4,900**	µg/L	EPA 200.7	50.0	50.0	300	07/22/2015
44-01	4401-BDUP	7439-89-6	340	Iron	**510**	µg/L	EPA 200.7	50.0	50.0	300	07/22/2015

Notes:

1. "CAS NUMBER" is a unique number assigned by the Chemical Abstracts Service (CAS) to all identified parameters.
2. "SWS ID" is the Solid Waste Section Identification Number.
3. "RESULT" is the analytical data reported by the laboratory.
4. "UNITS" are micrograms per liter (µg/L) for analytical results.
5. "METHOD" is the analytical method used to analyze the constituents.
6. "MDL" is the method detection limit, which is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero.
7. "MRL" is the method reporting limit, which is the minimum concentration of a target analyte that can be accurately determined by the referenced method.
8. "SWSL" is the Solid Waste Section Limit. This limit (identified by DENR) is the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy.
9. "COLLECT DATE" is the date on which the sample was collected in the field.
10. Bold numbers indicate result in exceedance of the 2L or interim maximum allowable concentration (IMAC) standards or greater than or equal to the groundwater protection standard (GWPS [if no 2L or IMAC exist]).
11. 2L standard and IMAC are from "North Carolina Administrative Code, Title 15A: Department of Environment and Natural Resources, Subchapter 2L - Groundwater Classifications and Standards," DENR (Amended Eff April 1, 2013).
12. GWPS is pursuant to "15A NCAC 13B .1634," DENR. Current standards were obtained from http://portal.ncdenr.org/web/sw/envmonitoringlist (last updated June 13, 2011).

Table 3
Water Quality Standard Limit Exceedance Notification
Closed International Paper Landfill 5 (Permit 44-01), Canton, North Carolina

FACILITY PERMIT	WELL ID	CAS NUMBER	SWS ID	PARAMETER	RESULT	UNITS	METHOD	MDL	MRL	SWSL	WATER QUALITY STANDARD	COLLECT DATE	CAUSE AND SIGNIFICANCE
GROUNDWATER SAMPLES - 2L STANDARD OR GWPS (µg/L)													
44-01	4401-MW5B1	7439-89-6	340	Iron	**7,300**	µg/L	EPA 200.7	50.0	50.0	300	300	07/22/2015	Likely Naturally Occuring.
44-01	4401-MW5B1	SW320	320	pH	**6.23**	SU				NE	6.5 - 8.5	07/22/2015	Turbidity of sample at 159.7 NTU.
44-01	4401-MW5B2	7439-89-6	340	Iron	**20,000**	µg/L	EPA 200.7	50.0	50.0	300	300	07/22/2015	Likely Naturally Occuring.
44-01	4401-MW5B2	SW320	320	pH	**6.25**	SU				NE	6.5 - 8.5	07/22/2015	Turbidity of sample at 59.18 NTU.
44-01	4401-MW5B3	7439-89-6	340	Iron	**46,000**	µg/L	EPA 200.7	50.0	50.0	300	300	07/21/2015	Likely Naturally Occuring.
44-01	4401-MW5B3	SW320	320	pH	**6.43**	SU				NE	6.5 - 8.5	07/21/2015	Turbidity of sample at 196.9 NTU.
44-01	4401-MW5C1	SW320	320	pH	**5.32**	SU				NE	6.5 - 8.5	07/21/2015	Likely Naturally Occuring.
44-01	4401-MW5C2	SW320	320	pH	**6.34**	SU				NE	6.5 - 8.5	07/21/2015	Likely Naturally Occuring.
44-01	4401-MW5C3	SW320	320	pH	**5.80**	SU				NE	6.5 - 8.5	07/21/2015	Likely Naturally Occuring.
SURFACE WATER SAMPLES - 2B STANDARD (µg/L)													
44-01	4401-BDDOWN	7439-89-6	340	Iron	**4,900**	µg/L	EPA 200.7	50.0	50.0	300	1,000	07/22/2015	Likely Naturally Occuring. Turbidity of sample at 55.36 NTU.
44-01	4401-BDDOWN	SW330	330	Turbidity	**55.36**	NTU	NA	NE	NE	NE	<50	07/22/2015	

Notes:

1. "CAS NUMBER" is a unique number assigned by the Chemical Abstracts Service (CAS) to all identified parameters.
2. "SWS ID" is the Solid Waste Section Identification Number.
3. "RESULT" is analytical data reported by the laboratory or field data collected by Altamont.
4. "UNITS" are micrograms per liter (µg/L) for analytical results and Standard Units (SU) for pH.
5. "QUALIFIER" is a data qualifier or "flag". A blank cell indicates that there is no qualifier associated with the reported result.
6. "METHOD" is the analytical method used to analyze the constituents.
7. "MDL" is the method detection limit, which is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero.
8. "MRL" is the method reporting limit, which is the minimum concentration of a target analyte that can be accurately determined by the referenced method.
9. "SWSL" is the Solid Waste Section Limit. This limit (identified by DENR) is the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy.
10. "GROUNDWATER QUALITY STANDARD" refers to the 2L standard, interim maximum allowable concentration (IMAC), or groundwater protection standard (GWPS) for groundwater.
11. "COLLECT DATE" is the date on which the sample was collected in the field.
12. "NE" means Not Established.
13. 2L standard and IMAC are from "North Carolina Administrative Code, Title 15A: Department of Environment and Natural Resources, Subchapter 2L - Groundwater Classifications and Standards," DENR (Amended Eff April 1, 2013). The IMAC concentrations listed in Appendix #1 of the 2L rule last updated April 1, 2013.
14. GWPS is pursuant to "15A NCAC 13B .1634," DENR. Current standards were obtained from http://portal.ncdenr.org/web/sw/envmonitoringlist (last updated June 13, 2011).

Table 4
Historic Groundwater Quality Results
Closed International Paper Landfill 5 (Permit 44-01), Canton, North Carolina

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	05/01/1991	6.73	ND	**19**	20	0.62	ND
	05/01/1992	**6.40**	ND	**15**	26	1.5	3.2
	05/01/1993	NA	NA	NA	NA	NA	NA
	11/01/1993	**6.11**	ND	**3.1**	25	2.3	3.2
	05/01/1994	**6.42**	ND	**2.5**	29	ND	ND
	11/01/1994	7.20	0.001	**10.6**	35	1.1	1.4
	05/01/1995	6.60	ND	**5.85**	32	1.2	0.24
	11/01/1995	**5.80**	0.001	**7.808**	45	1.2	1.3
	05/01/1996	**6.30**	ND	**12.77**	27	0.9	ND
	11/01/1996	6.80	0.001	**10.43**	34	2.4	ND
	05/01/1997	6.60	ND	**4.4**	43	ND	ND
	11/01/1997	7.20	ND	**44**	49	1.5	ND
	05/01/1998	6.60	ND	**2.5**	85	ND	ND
	11/01/1998	7.20	ND	**2.6**	44	2.1	ND
	05/01/1999	6.70	ND	**2.8**	98	ND	ND
	11/01/1999	**6.40**	ND	**14**	38	1	10.8
	05/01/2000	**5.80**	**0.0026**	**10**	41	ND	2.3
	11/01/2000	6.50	ND	**2.8**	52	ND	ND
	05/01/2001	**6.40**	ND	**1.2**	ND	1.4	ND
	11/05/2001	**5.79**	ND	**5.2**	35	ND	1.7
	05/28/2002	6.55	ND	**1.5**	32	ND	ND
	12/02/2002	**5.12**	ND	**1.6**	38	1.3	ND
	12/03/2003	**6.39**	ND	**1.6**	90	1.2	ND
	07/20/2004	**6.27**	ND	**10**	56	ND	ND
	07/13/2005	**5.57**	ND	**20**	48	ND	ND
	07/10/2006	**6.02**	ND	**17**	28	ND	ND
	07/27/2007	**3.87**	ND	**16**	42	ND	ND
	07/22/2008	**6.20**	ND	**11.1**	40	ND	ND
	07/21/2009	**6.11**	ND	**26**	60	ND	ND
DUP-1	07/21/2009	**6.11**	ND	**21.1**	38	ND	ND
	07/14/2010	6.51	ND	**16.7**	ND	ND	ND
	07/26/2011	**4.62**	ND	**22.1**	35	ND	ND
	07/19/2012	**6.28**	ND	**27.2**	31	1.4	ND
	07/23/2013	**6.25**	ND	**32.6**	35	1.3	ND
	07/22/2014	**6.42**	ND	**16.2**	ND	1.6	ND
	07/22/2015	**6.23**	0.000083J	**7.3**	36	1.1	ND

Table 4
Historic Groundwater Quality Results
Closed International Paper Landfill 5 (Permit 44-01), Canton, North Carolina

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	05/01/1991	6.57	ND	**35.9**	192	40.3	12.5
	05/01/1992	6.60	ND	**70**	210	31	18
	05/01/1993	NA	NA	NA	NA	NA	NA
	11/01/1993	**5.96**	ND	**28**	190	33	ND
	05/01/1994	**6.30**	ND	**25.001**	215	42.8	7.3
	11/01/1994	**6.30**	**0.004**	**22.2**	257	66.3	8.8
	05/01/1995	6.70	**0.005**	**50.277**	187	15.3	38.3
	11/01/1995	**6.10**	**0.004**	**27.63**	263	49.5	38.8
	05/01/1996	**6.20**	ND	**49**	298	65.3	21.6
	11/01/1996	6.60	0.002	**19.415**	327	95.4	7
	05/01/1997	6.60	ND	**36**	280	85	2.7
	11/01/1997	**6.30**	ND	**12**	290	110	7.1
	05/01/1998	**6.30**	ND	0.12	350	99	5.1
	11/01/1998	**6.40**	ND	**47**	330	96	3.3
	05/01/1999	6.60	ND	**170**	360	81	9.13
	11/01/1999	**6.00**	**0.0022**	**32**	410	110	132
	05/01/2000	**6.10**	**0.0041**	**39**	350	97	13.3
	11/01/2000	**6.10**	**0.0039**	**29**	360	120	11
	05/01/2001	**6.30**	**0.007**	**49**	500	100	6.8
	11/05/2001	**6.25**	**0.003**	**23**	160	120	6.9
	05/28/2002	**6.36**	**0.034**	**89**	390	87	**540**
	12/02/2002	**5.33**	**0.0025**	**35**	400	91	13
	12/03/2003	6.57	ND	**22**	320	67	10
	07/19/2004	**6.21**	ND	**25**	256	50	9.9
	07/13/2005	**4.42**	ND	**28**	170	5.5	14
	07/11/2006	6.63	ND	**34**	160	ND	28
	07/27/2007	**5.69**	ND	**33**	330	65	6.9
	07/23/2008	**6.04**	ND	**26.8**	496	113	6.6
	07/21/2009	**6.22**	ND	**45.6**	**518**	103	ND
	07/14/2010	6.62	ND	**56.3**	192	46.5	ND
DUP-1	07/14/2010	6.62	ND	**55.3**	214	48.5	ND
	07/26/2011	**5.49**	ND	**51.4**	270	80.2	ND
	07/18/2012	**6.42**	ND	**45.3**	107	107	ND
	07/23/2013	**6.33**	ND	**22.8**	131	8.6	5.7
	07/22/2014	**6.27**	ND	**32.5**	237	33.7	14.5
	07/22/2015	**6.25**	ND	**20.0**	250	34.0	13.0*J*

Table 4
Historic Groundwater Quality Results
Closed International Paper Landfill 5 (Permit 44-01), Canton, North Carolina

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	05/01/1991	6.76	ND	**26.4**	102	9.73	11.7
	05/01/1992	6.50	ND	**46**	90	9.8	ND
	05/01/1993	NA	NA	NA	NA	NA	NA
	11/01/1993	**6.14**	ND	**13**	140	20	23
	05/01/1994	**6.40**	ND	**12.661**	153	21.4	18.1
	11/01/1994	6.70	**0.004**	**23.705**	142	27.1	11.2
	05/01/1995	6.60	**0.004**	**18.392**	169	26.5	10.9
	11/01/1995	**5.90**	**0.004**	**16.407**	158	30.3	7.8
	05/01/1996	**6.20**	ND	**15.9**	157	31.5	9.3
	11/01/1996	6.50	0.001	**16.03**	161	26.7	9.9
	05/01/1997	6.50	**0.003**	**16**	180	30	7.9
	11/01/1997	**6.30**	ND	**26**	160	31	8.9
	05/01/1998	**6.40**	ND	**38**	170	39	7.4
	11/01/1998	6.60	ND	**17**	200	36	9
	05/01/1999	6.60	ND	**17**	190	38	7.06
	11/01/1999	**6.20**	ND	**19**	180	34	3.1
	05/01/2000	**6.20**	0.002	**16**	190	36	12.8
	11/01/2000	**6.30**	**0.0021**	**17**	190	35	24
	05/01/2001	**6.20**	**0.0068**	**18**	220	34	9.4
	11/05/2001	6.78	**0.0022**	**18**	21	42	9.4
	05/28/2002	**6.41**	**0.015**	**91**	180	34	85
	12/02/2002	**6.45**	0.0014	**13**	56	31	15
	12/03/2003	**6.49**	ND	**15**	180	50	11
	07/20/2004	**6.36**	ND	**35**	124	20	12
	07/12/2005	**5.86**	ND	**33**	160	19	17
	07/10/2006	**6.37**	0.0011	**45**	120	17	15
	07/27/2007	**6.29**	ND	**36**	140	17	12
	07/23/2008	**6.35**	ND	**73.6**	152	17.0	13.1
DUP-1	07/23/2008	**6.35**	ND	**61.8**	154	16.9	13.9
	07/21/2009	**6.48**	**0.0142**	**77.1**	236	50.3	9.0
	07/14/2010	**6.35**	ND	**58.6**	130	20.7	13.5
	07/26/2011	**5.36**	ND	**57.6**	132	19.5	11.9
	07/19/2012	6.95	ND	**30.3**	168	23.8	13.4
	07/23/2013	**6.42**	**0.0036**	**57.8**	165	23.9	15.7
	07/22/2014	**6.18**	ND	**23.5**	180	31.6	13.7
	07/21/2015	**6.43**	0.00019J	**46.0**	170	25.0	12.0*J*

Table 4
Historic Groundwater Quality Results
Closed International Paper Landfill 5 (Permit 44-01), Canton, North Carolina

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	05/01/1991	**6.26**	ND	**31.3**	71	7.66	12.7
	05/01/1992	**6.10**	ND	0.3	79	7.7	9.4
	05/01/1993	NA	NA	NA	NA	NA	NA
	11/01/1993	**5.52**	ND	0.14	63	8.1	5.9
	05/01/1994	**5.60**	ND	0.078	76	7.4	9.2
	11/01/1994	6.50	ND	0.262	27	7.7	10.9
	05/01/1995	**6.00**	0.002	0.074	84	7.5	8.5
	11/01/1995	**5.50**	ND	0.044	95	7.9	8.4
	05/01/1996	**5.90**	ND	**765.32**	51.5	6.8	8.6
	11/01/1996	**6.30**	ND	ND	79.5	7.8	9.9
	05/01/1997	**6.00**	ND	0.27	85	7.4	8.6
	11/01/1997	**6.00**	ND	0.11	94	7.4	8.6
	05/01/1998	**5.60**	ND	ND	75	5.2	10
	11/01/1998	**6.00**	NA	NA	NA	NA	NA
	05/01/1999	**5.20**	ND	ND	77	7.7	4
	11/01/1999	**5.50**	ND	0.12	82	7.2	7.45
	05/01/2000	**6.30**	ND	0.069	91	9.1	10
	11/01/2000	**6.20**	ND	0.094	77	7.4	11
	05/01/2001	**5.40**	ND	0.064	140	7.2	6.7
	11/05/2001	**5.46**	ND	0.18	96	8.3	7.9
	05/28/2002	**6.07**	ND	0.083	76	9.3	8.5
	12/02/2002	**6.20**	ND	ND	100	6.8	12
	12/03/2003	**6.02**	ND	ND	60	8.4	10
	07/19/2004	**5.80**	ND	ND	76	6.8	10
	07/12/2005	**5.00**	ND	ND	110	7.6	8.5
	07/11/2006	**5.37**	ND	ND	90	7.1	6.8
	07/27/2007	**5.38**	ND	0.13	120	8.8	5.3
DUP-1	07/27/2007	**5.38**	ND	ND	98	8.8	5.2
	07/22/2008	**5.69**	ND	ND	124	9.5	6.5
	07/21/2009	**5.14**	ND	ND	114	9.6	7.2
	07/14/2010	**5.97**	ND	0.284	71	8.1	7.7
	07/26/2011	**7.04**	ND	0.0371 J	71	7.1	7.7
DUP-1	07/26/2011	**7.04**	ND	0.0305 J	79	7.5	7.7
	07/19/2012	**5.72**	ND	ND	80	7.9	7.7
DUP-1	07/19/2012	**5.72**	ND	0.0653	80	8.1	7.2
	07/23/2013	**5.30**	ND	ND	67	5.6	9.2
DUP-1	07/23/2013	**5.30**	ND	ND	68	4.9	9.2
	07/22/2014	**5.85**	ND	ND	84	6.5	5.8
DUP-1	07/22/2014	**5.85**	ND	ND	77	6.6	5.9
	07/21/2015	**5.32**	0.000025J	ND	130	8.2	4.0*J*
DUP-1	07/21/2015	**5.32**	0.000034J	ND	110	8.1	4.0*J*

Table 4
Historic Groundwater Quality Results
Closed International Paper Landfill 5 (Permit 44-01), Canton, North Carolina

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	05/01/1991	7.56	ND	**0.41**	**1607**	7.30	ND
	05/01/1992	6.90	ND	**100**	140	25	16
	05/01/1993	NA	NA	NA	NA	NA	NA
	11/01/1993	**6.18**	ND	**2.3**	97	11	8.6
	05/01/1994	6.58	ND	0.157	99	12.5	2.2
	11/01/1994	7.20	ND	**0.598**	99.5	15	17.3
	05/01/1995	6.70	ND	**11.19**	96	13.7	2.1
	11/01/1995	**6.10**	ND	**3.123**	103	14.5	2.1
	05/01/1996	**6.40**	ND	**6.029**	83	12.6	2.2
	11/01/1996	**6.40**	0.002	NA	104	16.2	3.3
	05/01/1997	6.80	ND	**3.2**	90	14	ND
	11/01/1997	7.20	ND	**1.6**	86	13	1.6
	05/01/1998	6.50	ND	**24**	100	14	1.4
	11/01/1998	**5.70**	NA	NA	NA	NA	NA
	05/01/1999	6.60	ND	**7.6**	100	13	ND
	11/01/1999	**5.80**	ND	**0.32**	96	11	ND
	05/01/2000	**5.80**	ND	**0.51**	120	16	ND
	11/01/2000	6.80	0.0016	**16**	110	14	6.9
	05/01/2001	**6.40**	ND	**1.2**	140	13	1.2
	11/05/2001	**6.21**	ND	**2**	97	15	2.8
	05/28/2002	6.75	0.0014	**4.1**	88	15	ND
	12/02/2002	**4.98**	ND	**1.9**	110	15	5.5
	12/03/2003	6.61	ND	**0.58**	92	27	ND
	07/19/2004	**6.24**	ND	ND	106	24	ND
	07/12/2005	**5.89**	ND	0.26	170	28	ND
	07/11/2006	**6.12**	ND	0.14	420	30	ND
	07/27/2007	**6.26**	ND	0.076	210	37	ND
	07/22/2008	**6.31**	ND	0.124	218	43.0	ND
	07/21/2009	**6.16**	ND	0.0727	240	42.4	ND
	07/14/2010	**6.36**	ND	ND	205	55.5	ND
	07/26/2011	**5.74**	ND	0.171	217	62.8	ND
	07/18/2012	**6.18**	ND	0.0923	216	92.4	3.3
	07/23/2013	**6.25**	ND	0.211	241	64.2	4.4
	07/22/2014	**6.10**	ND	0.0678	257	61.9	3.9
	07/21/2015	**6.34**	0.00011J	0.190J	290	63.0	1.9J

Table 4
Historic Groundwater Quality Results
Closed International Paper Landfill 5 (Permit 44-01), Canton, North Carolina

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	05/01/1991	**6.18**	ND	**11.3**	315	23.9	2.3
	05/01/1992	6.60	ND	**89**	430	40	5.1
	05/01/1993	NA	NA	NA	NA	NA	NA
	11/01/1993	**5.66**	ND	**0.39**	170	46	ND
	05/01/1994	**5.82**	ND	0.171	186	52.2	1.8
	11/01/1994	**6.30**	ND	**0.597**	187	55.7	2
	05/01/1995	**6.40**	**0.005**	**31.08**	374	63.9	32.2
	11/01/1995	**5.50**	**0.003**	**15.28**	272.5	70.2	1.9
	05/01/1996	**5.70**	ND	**1.45**	242	75.6	1.9
	11/01/1996	**6.00**	**0.003**	**12.5**	223	95.5	2.6
	05/01/1997	6.90	ND	**2.9**	310	83	ND
	11/01/1997	7.00	ND	**2.4**	350	20	8.4
	05/01/1998	**5.80**	ND	0.06	350	86	1.7
	11/01/1998	**5.70**	ND	**0.32**	380	92	2.2
	05/01/1999	**5.80**	ND	**1.7**	330	94	7.42
	11/01/1999	**5.80**	ND	**0.79**	310	96	3.1
	05/01/2000	**5.50**	ND	**0.86**	280	98	ND
	11/01/2000	**6.00**	ND	**6.6**	280	93	ND
	05/01/2001	**5.90**	ND	**2.7**	360	93	1.1
	11/05/2001	**5.83**	0.0017	**1.5**	290	100	2.6
	05/28/2002	**5.90**	ND	**2**	400	96	ND
	12/02/2002	**5.31**	ND	**1.2**	340	99	6.7
	12/03/2003	**5.64**	ND	0.12	280	130	ND
	07/19/2004	**5.50**	ND	0.072	312	97	ND
	07/13/2005	**5.20**	ND	0.10	490	100	ND
	07/11/2006	**5.47**	ND	ND	**980**	88	ND
	07/27/2007	**5.57**	ND	ND	410	85	ND
	07/23/2008	**5.64**	ND	0.13	388	88.6	ND
	07/21/2009	**5.62**	ND	0.0515	366	94.1	ND
	07/14/2010	**5.86**	ND	0.219	263	94.6	ND
	07/26/2011	**4.84**	ND	0.0658	248	97.6	ND
	07/18/2012	**5.47**	ND	0.162	245	110	3.7
	07/23/2013	**5.55**	ND	**0.306**	283	91.9	4.5
	07/22/2014	**5.76**	ND	**0.109**	283	102	4.1
	07/21/2015	**5.80**	0.00035J	0.079J	340	86.0	2.8*J*

Notes:

1. Concentrations are in milligrams per liter (mg/L).
2. pH is measured in Standard Units.
3. 2L standard values were taken from Title 15A, North Carolina Administrative Code (NCAC), Subchapter 2L Groundwater Quality Standards last amended April 1, 2013.
4. **Bold** indicates exceedance of 2L Standard in monitoring wells.
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 5
Historic Surface-Water Quality Results
Closed International Paper Landfill 5 (Permit 44-01), Canton, North Carolina

Sample Location	Date	pH	Cadmium	Iron	Total Dissolved Solids	Chloride	Sulfate
2B Standards		*6.0 - 9.0*	*0.002*	*1.0*	*500*	*230*	*250*
BD-UP	05/01/1991	7.47	ND	0.96	37	1.56	ND
	05/01/1992	NA	NA	**1.6**	NA	NA	NA
	05/01/1993	NA	NA	NA	NA	NA	NA
	11/01/1993	7.50	ND	0.41	75	2.9	4.1
	05/01/1994	7.10	ND	0.24	37	1.9	4.3
	11/01/1994	7.40	ND	**1.179**	56	3.3	3.7
	05/01/1995	7.90	ND	**1.125**	49	2.5	4.1
	11/01/1995	6.20	ND	0.192	72	4.2	4.9
	05/01/1996	6.20	ND	**1.316**	34	2.6	5.9
	11/01/1996	7.10	ND	**1.099**	43	2.9	3.7
	05/01/1997	7.30	ND	0.64	62	1.5	3.1
	11/01/1997	7.40	ND	0.3	38	3.4	3.8
	05/01/1998	7.60	ND	ND	36	ND	3
	11/01/1998	NA	NA	NA	NA	NA	NA
	05/01/1999	6.70	ND	0.81	76	2.0	4.1
	11/01/1999	6.60	ND	0.28	75	1.5	2.63
	05/01/2000	6.70	ND	0.39	68	2.4	6.1
	11/01/2000	7.20	ND	0.29	55	3.2	7.7
	05/01/2001	6.90	ND	0.46	86	3.9	ND
	11/05/2001	7.80	ND	0.44	64	2.9	3.7
	05/28/2002	7.20	ND	0.56	62	3.2	ND
	12/02/2002	6.62	ND	**2.9**	66	3.2	9.1
	12/03/2003	7.32	ND	0.53	50	3.6	ND
	07/19/2004	6.86	ND	0.88	50	ND	ND
	07/12/2005	NA	ND	0.60	86	ND	ND
	07/11/2006	7.7	ND	0.29	36	ND	ND
	07/27/2007	**5.31**	ND	0.70	72	ND	ND
	07/22/2008	7.22	ND	0.512	64	ND	ND
	07/21/2009	6.95	ND	0.504	48	ND	ND
	07/14/2010	6.89	ND	0.584	55	ND	ND
	07/26/2011	**5.75**	ND	**2.790**	53	ND	ND
	07/19/2012	7.11	ND	**1.430**	65	3.9	6.3
	07/23/2013	6.98	ND	**1.160**	57	2.6	6.2
	07/22/2014	7.17	ND	0.858	52	3.0	4.3
	07/22/2015	6.71	ND	0.510	74	3.9	2.0*J*

Table 5
Historic Surface-Water Quality Results
Closed International Paper Landfill 5 (Permit 44-01), Canton, North Carolina

Sample Location	Date	pH	Cadmium	Iron	Total Dissolved Solids	Chloride	Sulfate
2B Standards		*6.0 - 9.0*	*0.002*	*1.0*	*500*	*230*	*250*
BD-DOWN	05/01/1991	7.47	ND	0.67	46	2.41	ND
	05/01/1992	NA	NA	**1.7**	NA	NA	NA
	05/01/1993	NA	NA	NA	NA	NA	NA
	11/01/1993	7.45	ND	0.51	110	5.2	9.6
	05/01/1994	7.04	ND	0.343	42	3.2	4
	11/01/1994	7.30	ND	0.89	34	4.4	3.3
	05/01/1995	7.20	ND	**1.495**	48	3.0	3.9
	11/01/1995	6.40	ND	0.241	52	4.4	5.1
	05/01/1996	6.70	ND	**1.513**	41	3.4	7
	11/01/1996	7.20	ND	0.264	49	4.2	3.9
	05/01/1997	6.80	ND	**1.3**	65	3.9	3.6
	11/01/1997	7.00	ND	0.19	51	3.7	3.1
	05/01/1998	7.20	ND	0.51	48	2.6	3.1
	11/01/1998	NA	NA	NA	NA	NA	NA
	05/01/1999	6.60	ND	0.9	75	4.7	3.54
	11/01/1999	6.90	ND	0.36	60	2.6	2.63
	05/01/2000	6.60	ND	0.27	59	3.1	6.9
	11/01/2000	6.90	ND	0.3	87	4.2	8.1
	05/01/2001	6.90	ND	0.62	**2600**	4.2	2.8
	11/05/2001	7.98	ND	0.33	ND	4.7	3.8
	05/28/2002	7.20	ND	0.63	66	4.4	ND
	12/02/2002	6.19	ND	**7.0**	88	6.0	10
	12/03/2003	7.32	ND	0.57	50	5.0	ND
	07/19/2004	6.92	ND	**1.5**	62	ND	ND
	07/12/2005	NA	ND	0.84	84	ND	ND
	07/10/2006	7.58	ND	0.28	44	ND	ND
	07/27/2007	7.03	ND	1.0	66	ND	ND
	07/22/2008	6.99	ND	0.555	92	5.7	ND
	07/21/2009	6.97	ND	0.453	56	ND	ND
	07/14/2010	6.45	ND	0.593	57	5.1	ND
	07/26/2011	6.04	ND	**1.910**	51	ND	ND
	07/19/2012	7.22	ND	**1.820**	65	4.7	6.3
	07/23/2013	7.08	ND	**1.270**	58	3.3	6.2
	07/22/2014	6.83	ND	**1.190**	60	4.5	4.5
	07/22/2015	7.12	0.000028J	**4.90**	76	5.5	2.7J

Notes:
1. Concentrations are in milligrams per liter (mg/L).
2. pH is measured in Standard Units.
3. 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.
4. **Bold** indicates exceedance of 2B standard in monitoring wells.
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
ALTAMONT SAMPLING LOGS AND EQUIPMENT DOCUMENTATION AND CALIBRATION DATA SHEET

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

Low-Flow Sampling Log

PROJECT NAME: IP LF#5 GW Sampling
PROJECT NUMBER: 2055.05
LOCATION: Canton, NC
DATE: 7/22/2015
SAMPLING PERSONNEL: ALeSueur, P Brooks
WEATHER: 70s cloudy

Well ID: SB1
Screen Interval: 30-40' bgs
Depth to Water: 9.75 toc
Stickup: —
Depth of Pump Intake: NA toc
Drawdown Set: 10.05 toc

Arrive at Well: 1020
Start Time: 1032
Sample Time: 1056
Finish Sample Time: 1059
Leave Well: 1103
Well Diameter: 4"

COMMENTS: Azalea Dr, Past yellow building, End of field. High amount of floculents. Peristaltic Pump.

Time	DTW (feet)	Temp (°C)	Specific Cond. (µS)	DO (mg/L)	pH (S.U.) report to 0.1 S.U.	ORP (mV)	Turbidity (NTU)
1032	9.95	15.39	35	3.63	6.85	137.6	322.0
1035	9.95	15.88	36	3.26	6.13	152.3	254.0
1038	10.05	15.53	35	3.15	6.05	156.6	192.7
1041	10.05	15.64	35	2.89	6.02	157.5	223.6
1044	10.05	15.86	35	2.87	6.08	153.4	177.6
1047	10.05	15.79	35	2.94	6.16	149.0	176.3
1050	10.05	15.44	35	2.81	6.20	145.8	158.6
1053	10.05	15.89	35	2.80	6.22	144.5	156.0
1056	10.05	15.87	34	2.78	6.23	144.3	159.7

Time between recharge during sample collection: N/A

Sampling Personnel Signature: [signature] Date: 7/22/15

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 (Rev 2010)

bgs = below ground surface
toc = top of casing
°C = degrees Celsius
µS = micro-Siemen
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: IPLFS GW Sampling
PROJECT NUMBER: 2055.05
LOCATION: Canton, NC
DATE: 7/22/15
SAMPLING PERSONNEL: AL, PB
WEATHER: 70's, Partly Cloudy

Well ID: MW-532
Screen Interval: 10-20 bgs
Depth to Water: 4.78 ft toc
Stickup: —
Depth of Pump Intake: NA toc
Drawdown Set: 4.97 toc

Arrive at Well: 0850
Start Time: 0903
Sample Time: 0933
Finish Sample Time: 0936
Leave Well: 0939
Well Diameter: 4"

COMMENTS: Peristaltic Pump, Fast recharge, High amount of flocculents present, Broken lock hasp

Time	DTW (feet)	Temp (°C)	Specific Cond. (µS)	DO (mg/L)	pH (S.U.) *report to 0.1 S.U.*	ORP (mV)	Turbidity (NTU)
0903	4.78	17.06	366	2.31	6.00	-6.1	7100
0906	4.97	16.40	365	1.25	5.91	-1.0	1020
0909	4.97	16.29	362	0.98	6.04	-6.4	590
0912	4.97	15.56	355	1.45	6.11	-10.4	238
0915	4.97	15.40	352	1.63	6.17	-6.9	269
0918	4.97	15.32	350	1.61	6.23	-10.5	228
0921	4.97	15.28	349	1.57	6.25	-9.4	164
0924	4.97	15.27	345	1.63	6.27	-12.1	96.1
0927	4.97	15.14	342	1.48	6.26	-11.5	54.81
0930	4.97	15.10	341	1.47	6.26	-10.3	56.62
0933	4.97	15.07	340	1.47	6.25	-10.3	59.18

Time between recharge during sample collection: —

Sampling Personnel Signature: [signature] Date: 7/22/15

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 (Rev 2010)

bgs = below ground surface
toc = top of casing
°C = degrees Celsius
µS = micro-Siemen
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: IPLF5 GW Sampling
PROJECT NUMBER: 2098.05
LOCATION: Canton, NC
DATE: 7/21/15
SAMPLING PERSONNEL: AL, PB, CC
WEATHER: 70s, Cloudy

Well ID: MW-513
Screen Interval: 55-65 bgs
Depth to Water: 5.87 toc
Stickup: —
Depth of Pump Intake: NA toc
Drawdown Set: ~~6.83~~ 6.17 toc

Arrive at Well: 1230
Start Time: 1245
Sample Time: 1306
Finish Sample Time: 1316
Leave Well: 1318
Well Diameter: 4"

COMMENTS: Bladder pump

Time	DTW (feet)	Temp (°C)	Specific Cond. (µS)	DO (mg/L)	pH (S.U.) *report to 0.1 S.U.*	ORP (mV)	Turbidity (NTU)
1245	6.17	18.78	231	3.40	6.23	1.0	254.6
1248	6.17	19.49	236	3.33	6.11	1.06	363.0
1251	6.17	19.94	239	2.72	6.01	14.5	316.3
1254	6.17	20.17	241	1.96	6.22	-0.4	214.5
1257	6.17	19.99	241	1.50	6.35	-9.0	208.6
1300	6.17	20.03	242	1.35	6.38	-11.5	182.6
1303	6.17	20.78	247	1.24	6.42	-14.7	197.7
1306	6.17	21.27	250	1.27	6.43	-15.6	196.9

Time between recharge during sample collection: Fast Recharge, < 2 Seconds

Sampling Personnel Signature: [signature] Date: 7/21/15

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 (Rev 2010)

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

S.U. = standard units
ORP = oxidation reduction potential
mV = millivolt
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Low-Flow Sampling Log

PROJECT NAME: IP LF#5 GW Sampling
PROJECT NUMBER: 2055.
LOCATION: Canton, NC
DATE: 7/21/15
SAMPLING PERSONNEL: A. LeSueur, P. Boock, C. Carpenter
WEATHER: 70s cloudy

Well ID: MW-5C1
Screen Interval: 20-30 bgs
Depth to Water: 15.52 toc
Stickup: —
Depth of Pump Intake: NA toc
Drawdown Set: ~~NA~~ toc

Arrive at Well: 930
Start Time: 944
Sample Time: 959
Finish Sample Time: 1006
Leave Well: 1010
Well Diameter: 6"

COMMENTS: used peristaltic pump - Collected duplicate (5C1-DUP)

Time	DTW (feet)	Temp (°C)	Specific Cond. (µS)	DO (mg/L)	pH (S.U.) *report to 0.1 S.U.*	ORP (mV)	Turbidity (NTU)
944	15.53	14.89	111	9.05	5.11	221.3	12.58
947	15.82	15.65	114	9.12	5.26	214.3	7.78
950	15.82	14.88	110	9.12	5.21	219.5	10.11
953	15.82	14.47	108	9.16	5.24	219.3	3.63
956	15.82	14.48	108	9.13	5.27	217.9	4.50
959	15.82	14.45	108	9.07	5.32	216.8	5.61

Time between recharge during sample collection: NA

Sampling Personnel Signature: [signature] Date: 7/21/15

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 (Rev 2010)

bgs = below ground surface
toc = top of casing
°C = degrees Celsius
µS = micro-Siemen
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: MIPLFS GW Sampling
PROJECT NUMBER: 2055.05
LOCATION: Canton, NC
DATE: 7/21/15
SAMPLING PERSONNEL: AL, CC, PB
WEATHER: 70's, Partly Cloudy

Well ID: MW-SC2
Screen Interval: 15-25 bgs
Depth to Water: ~~4.32~~ toc
Stickup: —
Depth of Pump Intake: NA toc
Drawdown Set: ~~NA~~ 5.26 toc

Arrive at Well: 1111
Start Time: 1131
Sample Time: 1149
Finish Sample Time: 1155
Leave Well: 1198
Well Diameter: 6"

COMMENTS: Needs New lock, Peristaltic Pump

Time	DTW (feet)	Temp (°C)	Specific Cond. (µS)	DO (mg/L)	pH (S.U.) *report to 0.1 S.U.*	ORP (mV)	Turbidity (NTU)
1131	5.26	18.87	317	2.10	6.33	157.0	10.27
1134	5.26	18.58	314	1.94	6.33	154.4	16.91
1137	5.26	18.69	313	0.80	6.24	153.6	13.33
1140	5.26	18.74	314	0.62	6.17	152.4	11.47
1143	5.26	18.58	312	0.58	6.22	147.4	10.09
1146	5.26	18.76	313	0.64	6.30	141.3	10.34
1149	5.26	~~19.08~~	315	0.66	6.34	138.4	9.78

Time between recharge during sample collection: N/A

Sampling Personnel Signature: [signature] Date: 7/21/15

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 (Rev 2010)

bgs = below ground surface
toc = top of casing
°C = degrees Celsius
µS = micro-Siemen
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: IPLF 5 GW Sampling
PROJECT NUMBER: 2055.05
LOCATION: Canton, NC
DATE: 7/21/15
SAMPLING PERSONNEL: AL, CC, PB
WEATHER: 70's, Partly Cloudy

Well ID: MW-5C3
Screen Interval: 14-24 bgs
Depth to Water: 1.68 toc
Stickup: —
Depth of Pump Intake: NA toc
Drawdown Set: 2.68 toc

Arrive at Well: 1020
Start Time: 1042
Sample Time: 1057
Finish Sample Time: 1105
Leave Well: 1108
Well Diameter: 6"

COMMENTS: Peristaltic Pump, lock Broken.

Time	DTW (feet)	Temp (°C)	Specific Cond. (µS)	DO (mg/L)	pH (S.U.) *report to 0.1 S.U.*	ORP (mV)	Turbidity (NTU)
1042	1.48	18.79	357	7.08	5.79	187.8	7.98
1045	2.68	18.73	355	6.87	5.78	189.1	9.49
1048	2.68	18.36	352	3.88	5.80	191.4	16.87
1051	2.68	18.32	350	3.74	5.76	192.7	17.60
1054	2.68	18.79	353	3.73	5.78	192.4	12.94
1057	2.68	18.65	353	3.61	5.80	192.3	15.96

Time between recharge during sample collection: N/A

Sampling Personnel Signature: [signature] Date: 7/21/15

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 (Rev 2010)

bgs = below ground surface
toc = top of casing
°C = degrees Celsius
µS = micro-Siemen
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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Surface Water Sampling Log

PROJECT NAME: IP LF SGW Sampling
DATE: 7/22/15
PROJECT NUMBER: 2055.05
WEATHER: 70s, Cloudy
SAMPLING PERSONNEL: AL, PB

SAMPLE NAME: BG-UP

COMMENTS: Upstream of landfill, underneath bridge

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

TIME	TEMP (°C)	SPECIFIC COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	pH (S.U.) *report to 0.1 S.U.*	OXIDATION REDUCTION POTENTIAL (mV)	TURBIDITY (NTU)	COMMENTS
1120	19.58	74	8.82	6.71	111.0	17.49	

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

VEGETATION: OK ACCESS: OK

Sampling Personnel Signature: [signature] Date: 7/22/15

Notes: °C = degrees Celsius
µS/cm = 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 LFS Gw Sampling
DATE: 7/22/15
PROJECT NUMBER: 2059.05
WEATHER: 70's, Partly cloudy
SAMPLING PERSONNEL: AL, PD

SAMPLE NAME: BD-Down

COMMENTS: Down Stream of land fill

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

TIME	TEMP (°C)	SPECIFIC COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	pH (S.U.) *report to 0.1 S.U.*	OXIDATION REDUCTION POTENTIAL (mV)	TURBIDITY (NTU)	COMMENTS
0945	19.17	82	9.40	7.12	40.5	55.36	

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

VEGETATION: OK ACCESS: OK

Sampling Personnel Signature: [signature] Date: 7/22/15

Notes: °C = degrees Celsius
µS/cm = 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

Project Name: IPLF5 GW Sampling
Project Number: 2055.
Project Location: Canton, NC

Calibration Documentation
Person Conducting Calibration: ALoiseur
Date of Calibration: 7/21/15
Date of Field Measurements: 7/21/15

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	7/21
Other			

Micro TPW Turbidity Meter

Calibration Standards Exp Date	Instrument Serial #	Instrument Reading		
		0.02 NTU	10.0 NTU	1000 NTU
Mar 2016	200601045	Initial: 0.00	Initial: 10.23	Initial: 960.6
		Cal: 0.02	Cal: ~~0806~~ 10.08	Cal: 1000
		Time: 0809	Time: 0806	Time: 0804

YSI 556 Multiparameter Meter

Instrument Serial Number	12L101057						
	Instrument Readings 1009.0 mb						Calibration Expiration Date
Dissolved Oxygen	Initial: 7.42	Cal: 8.77	mmHg: 756.8	Time: 811			NA
pH 7 S.U. *report to 0.1 S.U.*	Initial: 6.85	pHmV:	Cal: 7.00	pHmV:	Time: 0748		Sept 2016
pH 4 S.U. *report to 0.1 S.U.*	Initial: 4.08	pHmV:	Cal: 4.00	pHmV:	Time: 0751		July 2016
pH 10 S.U. *report to 0.1 S.U.*	Initial: 10.14	pHmV:	Cal: 10.02	pHmV:	Time: 0755		Oct 2016
QC* pH 7 S.U. *report to 0.1 S.U.*	AM Time: 0823	Meas: 7.04	Mid Day Time:	Check:	PM Time:	Check:	
Spec. Cond. 1413/447/84/23 µS/cm**	Initial: 984	Cal: 1000	Time: 800				
QC* 84 µS/cm	AM Time: 0824	Meas: 990	Mid Day Time:	Check:	PM Time:	Check:	
ORP 240 mV	Initial: 245.4	Cal: 260.0	Time: 0821				

Comments:

Signature: [signature] Date: 7/21/15

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 1413, 447, 84, or 23 mS which is closest to historical readings from the project location.

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Equipment Documentation & Instrument Calibration Data Sheet

Project Name: IPLF5 GW Sampling
Project Number: 2055.05
Project Location: Canton, NC

Calibration Documentation
Person Conducting Calibration: Alex Neer
Date of Calibration: 7/22/15
Date of Field Measurements: 7/22/15

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	7/22/15
Other			

Micro TPW Turbidity Meter

Calibration Standards Exp Date	Instrument Serial #	Instrument Reading		
		0.02 NTU	10.0 NTU	1000 NTU
March 2016	200601045	Initial: 2.99	Initial: 13.52	Initial: 960.1
		Cal: 0.02	Cal: 10.0	Cal: 1000
		Time: 0802	Time: 0801	Time: 0759

YSI 556 Multiparameter Meter

Instrument Serial Number	12L101057						
Instrument Readings							Calibration Expiration Date
Dissolved Oxygen	Initial: 8.54	Cal: 8.67	mmHg: 759.1	Time: 0804			NA
pH 7 S.U. *report to 0.1 S.U.*	Initial: 7.05	pHmV:	Cal: 7.00	pHmV:	Time: 0743		Jan 2017
pH 4 S.U. *report to 0.1 S.U.*	Initial: 3.96	pHmV:	Cal: 4.00	pHmV:	Time: 0746		July 2016
pH 10 S.U. *report to 0.1 S.U.*	Initial: 9.93	pHmV:	Cal: 9.99	pHmV:	Time: 0751		Oct 2016
QC* pH 7 S.U. *report to 0.1 S.U.*	AM Time: 0815	Meas: 7.08	Mid Day Time:	Check:	PM Time:	Check:	
Spec. Cond. 1413/447/84/23 µS/cm**	Initial: 1026	Cal: 1000	Time: 0754				
QC* ~~84 µS/cm~~ 1000 µS/cm	AM Time: 0816	Meas: 984	Mid Day Time:	Check:	PM Time:	Check:	
ORP 240 mV	Initial: 262.0	Cal: 259.0	Time: 0813				

Comments:

Signature: [signature] Date: 7/21/15

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 1413, 447, 84, or 23 mS which is closest to historical readings from the project location.

APPENDIX B
JULY 18, 2003 LETTER FROM THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

North Carolina
Department of Environment and Natural Resources
Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary
Dexter R. Matthews, Director

July 18, 2003

Mr. Thomas C. Richardson
International Paper Corporation
6400 Poplar Ave.
Memphis, Tn. 38197

RE: Water Quality Monitoring Requirements - International Paper Landfill No. 5 - Canton, NC

Dear Mr. Richardson:

The request to modify water quality monitoring requirements at the International Paper Corporation Landfill No. 5 located at Canton, NC has been reviewed. The request, dated July 2, 2003, was made by Altamont Environmental, Inc. on behalf of International Paper. Proposed modifications included a reduction in the sampling parameter list and sampling frequency.

Based on the monitoring results for the facility, the Solid Waste Section conditionally approves some changes in the current monitoring plan. Beginning in 2004, monitoring well and surface water samples shall be sampled on an **annual** basis for the following list of parameters:

1. Total Iron;
2. Total Cadmium;
3. Chloride;
4. Sulfate;
5. Total Dissolved Solids.

In addition, the field parameters of temperature, pH, and specific conductivity must be measured for each sample during each sampling event.

The following parameters will be removed from monitoring requirements: (1.) Calcium, (2.) Magnesium, (3.) Manganese, (4.) Potassium, (5.) Sodium, (6.) Arsenic, (7.) Barium, (8.) Chromium, (9.) Nickel, (10.) Nitrate, (11.) Nitrite, (12.) Phenolics, (13.) Selenium, (14.) Silver, (15.) Total Organic Carbon, (16.) Zinc, (17.) Copper, (18.) Fluoride, (19.) Lead, and (20.) Mercury.

If monitoring data from the revised list of parameters indicate a decline in water quality or if conditions change at the site, the Solid Waste Section reserves the right to reinitiate semiannual monitoring for the full list of parameters. If there are violations of groundwater standards, an assessment with possible corrective action may be required.

If you have any questions, please call me at (919) 733-0692, extension 257.

Sincerely,

Larry Rose

Larry Rose
Environmental Compliance
Solid Waste Section

cc: Mark Poindexter - Head, Field Operations Branch
Brent Rockett - Western District Supervisor
Al Hetzell - Waste Management Specialist
Cheryl Marks - Hydrogeologist
James McElduff - Altamont Environmental, Inc.

APPENDIX C
LABORATORY ANALYTICAL REPORT AND CHAIN OF CUSTODY

PRISM LABORATORIES, INC.
Full-Service Analytical & Environmental Solutions

NC Certification No. 402
SC Certification No. 99012
NC Drinking Water Cert No. 37735
VA Certification No. 460211
DoD ELAP: L-A-B Accredited Certificate No. L2307
ISO/IEC 17025: L-A-B Accredited Certificate No. L2307

Case Narrative

08/10/2015

Altamont Environmental Inc
Brian Gant
231 Haywood Street
Asheville, NC 28801

Project: International Paper Landfill 5

Lab Submittal Date: 07/23/2015
Prism Work Order: 5070470

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

Please call if you have any questions relating to this analytical report.

Respectfully,

PRISM LABORATORIES, INC.

Robbi A. Jones

President/Project Manager

Reviewed By Terri W. Cole For Robbi A. Jones

Project Manager

Data Qualifiers Key Reference:

A	Ending LLCCV failed low. Possible low bias. Analysis repeated twice without improvement. No further action taken.
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
BRL	Below Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
*	Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and reporting limit indicated with a J.

PRISM LABORATORIES, INC. | Full-Service Analytical & Environmental Solutions

Sample Receipt Summary

08/10/2015

Prism Work Order: 5070470

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received
5C1	5070470-01	Water	07/21/15	07/23/15
5C1 DUP	5070470-02	Water	07/21/15	07/23/15
5C2	5070470-03	Water	07/21/15	07/23/15
5C3	5070470-04	Water	07/21/15	07/23/15
5B1	5070470-05	Water	07/22/15	07/23/15
5B2	5070470-06	Water	07/22/15	07/23/15
5B3	5070470-07	Water	07/21/15	07/23/15
BD-UP	5070470-08	Water	07/22/15	07/23/15
BD-Down	5070470-09	Water	07/22/15	07/23/15

Samples were received in good condition at 2.7 degrees C unless otherwise noted.

449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

Summary of Detections

08/10/2015

Prism Work Order: 5070470

Prism ID	Client ID	Parameter	Method	Result		Units
5070470-01	5C1	Chloride	9056A	8.2		mg/L
5070470-01	5C1	Sulfate	9056A	4.0		mg/L
5070470-01	5C1	Total Dissolved Solids	SM2540 C	130		mg/L
5070470-01	5C1	Cadmium	6020A	0.025	J	ug/L
5070470-02	5C1 DUP	Chloride	9056A	8.1		mg/L
5070470-02	5C1 DUP	Sulfate	9056A	4.0		mg/L
5070470-02	5C1 DUP	Total Dissolved Solids	SM2540 C	110		mg/L
5070470-02	5C1 DUP	Cadmium	6020A	0.034	J	ug/L
5070470-03	5C2	Chloride	9056A	63		mg/L
5070470-03	5C2	Sulfate	9056A	1.9		mg/L
5070470-03	5C2	Total Dissolved Solids	SM2540 C	290		mg/L
5070470-03	5C2	Cadmium	6020A	0.11	J	ug/L
5070470-03	5C2	Iron	6020A	190	A	ug/L
5070470-04	5C3	Chloride	9056A	86		mg/L
5070470-04	5C3	Sulfate	9056A	2.8		mg/L
5070470-04	5C3	Total Dissolved Solids	SM2540 C	340		mg/L
5070470-04	5C3	Cadmium	6020A	0.35	J	ug/L
5070470-04	5C3	Iron	6020A	79	A, J	ug/L
5070470-05	5B1	Chloride	9056A	1.1		mg/L
5070470-05	5B1	Total Dissolved Solids	SM2540 C	36		mg/L
5070470-05	5B1	Cadmium	6020A	0.083	J	ug/L
5070470-05	5B1	Iron	6020A	7300		ug/L
5070470-06	5B2	Chloride	9056A	34		mg/L
5070470-06	5B2	Sulfate	9056A	13		mg/L
5070470-06	5B2	Total Dissolved Solids	SM2540 C	250		mg/L
5070470-06	5B2	Iron	6020A	20000		ug/L
5070470-07	5B3	Chloride	9056A	25		mg/L
5070470-07	5B3	Sulfate	9056A	12		mg/L
5070470-07	5B3	Total Dissolved Solids	SM2540 C	170		mg/L
5070470-07	5B3	Cadmium	6020A	0.19	J	ug/L
5070470-07	5B3	Iron	6020A	46000		ug/L
5070470-08	BD-UP	Chloride	9056A	3.9		mg/L
5070470-08	BD-UP	Sulfate	9056A	2.0		mg/L
5070470-08	BD-UP	Total Dissolved Solids	SM2540 C	74		mg/L
5070470-08	BD-UP	Iron	6020A	510	A	ug/L
5070470-09	BD-Down	Chloride	9056A	5.5		mg/L
5070470-09	BD-Down	Sulfate	9056A	2.7		mg/L
5070470-09	BD-Down	Total Dissolved Solids	SM2540 C	76		mg/L
5070470-09	BD-Down	Cadmium	6020A	0.028	J	ug/L
5070470-09	BD-Down	Iron	6020A	4900		ug/L

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Altamont Environmental Inc
Attn: Brian Gant
231 Haywood Street
Asheville, NC 28801

Project: International Paper Landfill 5

Sample Matrix: Water

Client Sample ID: 5C1
Prism Sample ID: 5070470-01
Prism Work Order: 5070470
Time Collected: 07/21/15 09:59
Time Submitted: 07/23/15 14:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Anions by Ion Chromatography									
Chloride	**8.2**	**mg/L**	**1.0**	**0.078**	**1**	**9056A**	**8/1/15 17:09**	**CDE**	**P5H0064**
Sulfate	**4.0**	**mg/L**	**1.0**	**0.38**	**1**	**9056A**	**8/1/15 17:09**	**CDE**	**P5H0064**
General Chemistry Parameters									
Total Dissolved Solids	**130**	**mg/L**	**5.0**	**1.4**	**1**	**SM2540 C**	**7/27/15 13:10**	**EGC**	**P5G0495**
Total Metals									
Cadmium	**0.025 J**	**ug/L**	**1.0**	**0.019**	**1**	**6020A**	**7/27/15 18:22**	**BGM**	**P5G0472**
Iron	BRL A	ug/L	100	16	1	6020A	7/30/15 15:38	BGM	P5G0472

Altamont Environmental Inc
Attn: Brian Gant
231 Haywood Street
Asheville, NC 28801

Project: International Paper Landfill 5

Sample Matrix: Water

Client Sample ID: 5C1 DUP
Prism Sample ID: 5070470-02
Prism Work Order: 5070470
Time Collected: 07/21/15 09:59
Time Submitted: 07/23/15 14:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Anions by Ion Chromatography									
Chloride	**8.1**	**mg/L**	**1.0**	**0.078**	**1**	**9056A**	**8/3/15 18:31**	**CDE**	**P5H0040**
Sulfate	**4.0**	**mg/L**	**1.0**	**0.38**	**1**	**9056A**	**8/3/15 18:31**	**CDE**	**P5H0040**
General Chemistry Parameters									
Total Dissolved Solids	**110**	**mg/L**	**5.0**	**1.4**	**1**	**SM2540 C**	**7/27/15 13:10**	**EGC**	**P5G0495**
Total Metals									
Cadmium	**0.034 J**	**ug/L**	**1.0**	**0.019**	**1**	**6020A**	**7/27/15 18:35**	**BGM**	**P5G0472**
Iron	BRL A	ug/L	100	16	1	6020A	7/30/15 15:49	BGM	P5G0472

Altamont Environmental Inc
Attn: Brian Gant
231 Haywood Street
Asheville, NC 28801

Project: International Paper Landfill 5

Sample Matrix: Water

Client Sample ID: 5C2
Prism Sample ID: 5070470-03
Prism Work Order: 5070470
Time Collected: 07/21/15 11:49
Time Submitted: 07/23/15 14:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Anions by Ion Chromatography									
Chloride	**63**	**mg/L**	**1.0**	**0.078**	**1**	**9056A**	**8/3/15 19:20**	**CDE**	**P5H0040**
Sulfate	**1.9**	**mg/L**	**1.0**	**0.38**	**1**	**9056A**	**8/3/15 19:20**	**CDE**	**P5H0040**
General Chemistry Parameters									
Total Dissolved Solids	**290**	**mg/L**	**5.0**	**1.4**	**1**	**SM2540 C**	**7/27/15 13:10**	**EGC**	**P5G0495**
Total Metals									
Cadmium	**0.11 J**	**ug/L**	**1.0**	**0.019**	**1**	**6020A**	**7/27/15 18:39**	**BGM**	**P5G0472**
Iron	**190 A**	**ug/L**	**100**	**16**	**1**	**6020A**	**7/30/15 15:52**	**BGM**	**P5G0472**

Altamont Environmental Inc
Attn: Brian Gant
231 Haywood Street
Asheville, NC 28801

Project: International Paper Landfill 5

Sample Matrix: Water

Client Sample ID: 5C3
Prism Sample ID: 5070470-04
Prism Work Order: 5070470
Time Collected: 07/21/15 10:57
Time Submitted: 07/23/15 14:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Anions by Ion Chromatography									
Chloride	**86**	**mg/L**	**1.0**	**0.078**	**1**	**9056A**	**8/3/15 19:36**	**CDE**	**P5H0040**
Sulfate	**2.8**	**mg/L**	**1.0**	**0.38**	**1**	**9056A**	**8/3/15 19:36**	**CDE**	**P5H0040**
General Chemistry Parameters									
Total Dissolved Solids	**340**	**mg/L**	**5.0**	**1.4**	**1**	**SM2540 C**	**7/27/15 13:10**	**EGC**	**P5G0495**
Total Metals									
Cadmium	**0.35 J**	**ug/L**	**1.0**	**0.019**	**1**	**6020A**	**7/27/15 18:42**	**BGM**	**P5G0472**
Iron	**79 A, J**	**ug/L**	**100**	**16**	**1**	**6020A**	**7/30/15 15:56**	**BGM**	**P5G0472**

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Altamont Environmental Inc
Attn: Brian Gant
231 Haywood Street
Asheville, NC 28801

Project: International Paper Landfill 5

Sample Matrix: Water

Client Sample ID: 5B1
Prism Sample ID: 5070470-05
Prism Work Order: 5070470
Time Collected: 07/22/15 10:56
Time Submitted: 07/23/15 14:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Anions by Ion Chromatography									
Chloride	**1.1**	**mg/L**	**1.0**	**0.078**	**1**	**9056A**	**8/3/15 19:52**	**CDE**	**P5H0040**
Sulfate	BRL	mg/L	1.0	0.38	1	9056A	8/3/15 19:52	CDE	P5H0040
General Chemistry Parameters									
Total Dissolved Solids	**36**	**mg/L**	**5.0**	**1.4**	**1**	**SM2540 C**	**7/27/15 13:10**	**EGC**	**P5G0495**
Total Metals									
Cadmium	**0.083 J**	**ug/L**	**1.0**	**0.019**	**1**	**6020A**	**7/27/15 18:46**	**BGM**	**P5G0472**
Iron	**7300**	**ug/L**	**100**	**16**	**1**	**6020A**	**7/30/15 16:00**	**BGM**	**P5G0472**

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Altamont Environmental Inc
Attn: Brian Gant
231 Haywood Street
Asheville, NC 28801

Project: International Paper Landfill 5

Sample Matrix: Water

Client Sample ID: 5B2
Prism Sample ID: 5070470-06
Prism Work Order: 5070470
Time Collected: 07/22/15 09:33
Time Submitted: 07/23/15 14:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Anions by Ion Chromatography									
Chloride	**34**	**mg/L**	**1.0**	**0.078**	**1**	**9056A**	**8/3/15 20:09**	**CDE**	**P5H0040**
Sulfate	**13**	**mg/L**	**1.0**	**0.38**	**1**	**9056A**	**8/3/15 20:09**	**CDE**	**P5H0040**
General Chemistry Parameters									
Total Dissolved Solids	**250**	**mg/L**	**5.0**	**1.4**	**1**	**SM2540 C**	**7/27/15 13:10**	**EGC**	**P5G0495**
Total Metals									
Cadmium	BRL	ug/L	1.0	0.019	1	6020A	7/28/15 9:36	BGM	P5G0472
Iron	**20000**	**ug/L**	**1000**	**160**	**10**	**6020A**	**7/30/15 16:03**	**BGM**	**P5G0472**

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Attn: Brian Gant
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Project: International Paper Landfill 5

Sample Matrix: Water

Client Sample ID: 5B3
Prism Sample ID: 5070470-07
Prism Work Order: 5070470
Time Collected: 07/21/15 13:06
Time Submitted: 07/23/15 14:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Anions by Ion Chromatography									
Chloride	**25**	**mg/L**	**1.0**	**0.078**	**1**	**9056A**	**8/3/15 20:25**	**CDE**	**P5H0040**
Sulfate	**12**	**mg/L**	**1.0**	**0.38**	**1**	**9056A**	**8/3/15 20:25**	**CDE**	**P5H0040**
General Chemistry Parameters									
Total Dissolved Solids	**170**	**mg/L**	**5.0**	**1.4**	**1**	**SM2540 C**	**7/27/15 13:10**	**EGC**	**P5G0495**
Total Metals									
Cadmium	**0.19 J**	**ug/L**	**1.0**	**0.019**	**1**	**6020A**	**7/28/15 9:28**	**BGM**	**P5G0472**
Iron	**46000**	**ug/L**	**1000**	**160**	**10**	**6020A**	**7/30/15 16:07**	**BGM**	**P5G0472**

Altamont Environmental Inc
Attn: Brian Gant
231 Haywood Street
Asheville, NC 28801

Project: International Paper Landfill 5

Sample Matrix: Water

Client Sample ID: BD-UP
Prism Sample ID: 5070470-08
Prism Work Order: 5070470
Time Collected: 07/22/15 11:20
Time Submitted: 07/23/15 14:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Anions by Ion Chromatography									
Chloride	**3.9**	**mg/L**	**1.0**	**0.078**	**1**	**9056A**	**8/3/15 20:41**	**CDE**	**P5H0040**
Sulfate	**2.0**	**mg/L**	**1.0**	**0.38**	**1**	**9056A**	**8/3/15 20:41**	**CDE**	**P5H0040**
General Chemistry Parameters									
Total Dissolved Solids	**74**	**mg/L**	**5.0**	**1.4**	**1**	**SM2540 C**	**7/27/15 13:10**	**EGC**	**P5G0495**
Total Metals									
Cadmium	BRL	ug/L	1.0	0.019	1	6020A	7/28/15 9:39	BGM	P5G0472
Iron	**510 A**	**ug/L**	**100**	**16**	**1**	**6020A**	**7/30/15 16:10**	**BGM**	**P5G0472**

Altamont Environmental Inc
Attn: Brian Gant
231 Haywood Street
Asheville, NC 28801

Project: International Paper Landfill 5

Sample Matrix: Water

Client Sample ID: BD-Down
Prism Sample ID: 5070470-09
Prism Work Order: 5070470
Time Collected: 07/22/15 09:45
Time Submitted: 07/23/15 14:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Anions by Ion Chromatography									
Chloride	**5.5**	**mg/L**	**1.0**	**0.078**	**1**	**9056A**	**8/7/15 18:16**	**CDE**	**P5H0128**
Sulfate	**2.7**	**mg/L**	**1.0**	**0.38**	**1**	**9056A**	**8/7/15 18:16**	**CDE**	**P5H0128**
General Chemistry Parameters									
Total Dissolved Solids	**76**	**mg/L**	**5.0**	**1.4**	**1**	**SM2540 C**	**7/27/15 13:10**	**EGC**	**P5G0495**
Total Metals									
Cadmium	**0.028 J**	**ug/L**	**1.0**	**0.019**	**1**	**6020A**	**7/28/15 9:43**	**BGM**	**P5G0472**
Iron	**4900**	**ug/L**	**100**	**16**	**1**	**6020A**	**7/30/15 16:14**	**BGM**	**P5G0472**

Altamont Environmental Inc
Attn: Brian Gant
231 Haywood Street
Asheville, NC 28801

Project: International Paper Landfill 5

Prism Work Order: 5070470
Time Submitted: 7/23/2015 2:45:00PM

Total Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5G0472 - 3005A										
Blank (P5G0472-BLK1)				Prepared & Analyzed: 07/27/15						
Cadmium	BRL	1.0	ug/L							
Iron	BRL	100	ug/L							
LCS (P5G0472-BS1)				Prepared & Analyzed: 07/27/15						
Cadmium	102	1.0	ug/L	100.0		102	80-120			
Iron	952	100	ug/L	1000		95	80-120			
Matrix Spike (P5G0472-MS1)	**Source: 5070470-01**			Prepared & Analyzed: 07/27/15						
Cadmium	99.4	1.0	ug/L	100.0	0.0247	99	75-125			
Iron	905	100	ug/L	1000	BRL	90	75-125			
Matrix Spike Dup (P5G0472-MSD1)	**Source: 5070470-01**			Prepared & Analyzed: 07/27/15						
Cadmium	101	1.0	ug/L	100.0	0.0247	101	75-125	1	20	
Iron	896	100	ug/L	1000	BRL	90	75-125	1	20	
Post Spike (P5G0472-PS1)	**Source: 5070470-01**			Prepared: 07/27/15 Analyzed: 07/28/15						
Cadmium	95.0		ug/L	100.0	0.0247	95	80-120			
Iron	870		ug/L	1000	-12.2	87	80-120			

Altamont Environmental Inc
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Project: International Paper Landfill 5

Prism Work Order: 5070470
Time Submitted: 7/23/2015 2:45:00PM

Anions by Ion Chromatography - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5H0040 - NO PREP										
Blank (P5H0040-BLK1)				Prepared & Analyzed: 08/03/15						
Chloride	BRL	1.0	mg/L							
Sulfate	BRL	1.0	mg/L							
LCS (P5H0040-BS1)				Prepared & Analyzed: 08/03/15						
Chloride	39.7	1.0	mg/L	40.00		99	80-120			
Sulfate	42.4	1.0	mg/L	40.20		105	80-120			
Matrix Spike (P5H0040-MS1)	**Source: 5070470-02**			Prepared & Analyzed: 08/03/15						
Chloride	48.5	1.0	mg/L	40.00	8.14	101	80-120			
Sulfate	44.4	1.0	mg/L	40.20	3.96	101	80-120			
Matrix Spike Dup (P5H0040-MSD1)	**Source: 5070470-02**			Prepared & Analyzed: 08/03/15						
Chloride	48.0	1.0	mg/L	40.00	8.14	100	80-120	0.9	15	
Sulfate	44.2	1.0	mg/L	40.20	3.96	100	80-120	0.5	15	
Batch P5H0064 - NO PREP										
Blank (P5H0064-BLK1)				Prepared & Analyzed: 08/01/15						
Chloride	BRL	1.0	mg/L							
Sulfate	BRL	1.0	mg/L							
LCS (P5H0064-BS1)				Prepared & Analyzed: 08/01/15						
Chloride	33.7	1.0	mg/L	40.00		84	80-120			
Sulfate	36.4	1.0	mg/L	40.20		91	80-120			
Matrix Spike (P5H0064-MS1)	**Source: 5070470-01**			Prepared & Analyzed: 08/01/15						
Chloride	48.1	1.0	mg/L	40.00	8.15	100	80-120			
Sulfate	44.9	1.0	mg/L	40.20	4.02	102	80-120			

Altamont Environmental Inc
Attn: Brian Gant
231 Haywood Street
Asheville, NC 28801

Project: International Paper Landfill 5

Prism Work Order: 5070470
Time Submitted: 7/23/2015 2:45:00PM

Anions by Ion Chromatography - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5H0064 - NO PREP										
Matrix Spike Dup (P5H0064-MSD1)	**Source: 5070470-01**			Prepared & Analyzed: 08/01/15						
Chloride	48.4	1.0	mg/L	40.00	8.15	101	80-120	0.6	15	
Sulfate	45.3	1.0	mg/L	40.20	4.02	103	80-120	0.8	15	
Batch P5H0128 - NO PREP										
Blank (P5H0128-BLK1)				Prepared & Analyzed: 08/07/15						
Chloride	BRL	1.0	mg/L							
Sulfate	BRL	1.0	mg/L							
LCS (P5H0128-BS1)				Prepared & Analyzed: 08/07/15						
Chloride	41.4	1.0	mg/L	40.00		104	80-120			
Sulfate	42.7	1.0	mg/L	40.20		106	80-120			
Matrix Spike (P5H0128-MS1)	**Source: 5070470-09**			Prepared & Analyzed: 08/07/15						
Chloride	45.5	1.0	mg/L	40.00	5.53	100	80-120			
Sulfate	42.1	1.0	mg/L	40.20	2.66	98	80-120			
Matrix Spike Dup (P5H0128-MSD1)	**Source: 5070470-09**			Prepared & Analyzed: 08/07/15						
Chloride	45.2	1.0	mg/L	40.00	5.53	99	80-120	0.6	15	
Sulfate	41.8	1.0	mg/L	40.20	2.66	97	80-120	0.6	15	

Altamont Environmental Inc
Attn: Brian Gant
231 Haywood Street
Asheville, NC 28801

Project: International Paper Landfill 5

Prism Work Order: 5070470
Time Submitted: 7/23/2015 2:45:00PM

General Chemistry Parameters - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5G0495 - NO PREP										
Blank (P5G0495-BLK1)				Prepared & Analyzed: 07/27/15						
Total Dissolved Solids	BRL	50	mg/L							
LCS (P5G0495-BS1)				Prepared & Analyzed: 07/27/15						
Total Dissolved Solids	946	50	mg/L	1000		95	90-110			
Duplicate (P5G0495-DUP1)		**Source: 5070470-01**		Prepared & Analyzed: 07/27/15						
Total Dissolved Solids	122	50	mg/L		130			6	20	

Sample Extraction Data

Prep Method: 3005A

Lab Number	Batch	Initial	Final	Date/Time
5070470-01	P5G0472	50 mL	50 mL	07/27/15 8:25
5070470-01	P5G0472	50 mL	50 mL	07/27/15 8:25
5070470-02	P5G0472	50 mL	50 mL	07/27/15 8:25
5070470-02	P5G0472	50 mL	50 mL	07/27/15 8:25
5070470-03	P5G0472	50 mL	50 mL	07/27/15 8:25
5070470-03	P5G0472	50 mL	50 mL	07/27/15 8:25
5070470-04	P5G0472	50 mL	50 mL	07/27/15 8:25
5070470-04	P5G0472	50 mL	50 mL	07/27/15 8:25
5070470-05	P5G0472	50 mL	50 mL	07/27/15 8:25
5070470-05	P5G0472	50 mL	50 mL	07/27/15 8:25
5070470-06	P5G0472	50 mL	50 mL	07/27/15 8:25
5070470-06	P5G0472	50 mL	50 mL	07/27/15 8:25
5070470-07	P5G0472	50 mL	50 mL	07/27/15 8:25
5070470-07	P5G0472	50 mL	50 mL	07/27/15 8:25
5070470-08	P5G0472	50 mL	50 mL	07/27/15 8:25
5070470-08	P5G0472	50 mL	50 mL	07/27/15 8:25
5070470-09	P5G0472	50 mL	50 mL	07/27/15 8:25
5070470-09	P5G0472	50 mL	50 mL	07/27/15 8:25

CHAIN OF CUSTODY RECORD

PRISM LABORATORIES, INC.
Full-Service Analytical & Environmental Solutions
449 Springbrook Road • Charlotte, NC 28217
Phone 704/529-6364 • Fax: 704/525-0409

PAGE 1 OF 1 QUOTE # TO ENSURE PROPER BILLING:

Project Name: International Paper Landfill 5 GW
Short Hold Analysis: (Yes) (No) UST Project: (Yes) (NO)
*Please ATTACH any project specific reporting (QC LEVEL I II III IV) provisions and/or QC Requirements
Invoice To: Laura Butler
Address: 231 Haywood St. Asheville, NC 28801
Purchase Order No./Billing Reference 2055.05

Client Company Name: Altamont Environmental
Report To/Contact Name: Brian Grant
Reporting Address: 231 Haywood St. Asheville, NC 28801
Phone: 828-281-3351 Fax (Yes) (No): 828-281-3351
Email Address: BGrant@altamontenvironmental.com
EDD Type: PDF___ Excel ✓ Other___
Site Location Name: International Paper Landfill 5
Site Location Physical Address: Canton, NC

Requested Due Date ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days ☐ 5 Days
"Working Days" ☐ 6-9 Days ☒ Standard 10 days ☐ Rush Work Must Be Pre-Approved
Samples received after 14:00 will be processed next business day.
Turnaround time is based on business days, excluding weekends and holidays.
(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

LAB USE ONLY

	YES	NO	N/A
Samples INTACT upon arrival?	✓		
Received ON WET ICE?	X		
PROPER PRESERVATIVES indicated?	X		
Received WITHIN HOLDING TIMES?	X		
CUSTODY SEALS INTACT?			X
VOLATILES rec'd W/OUT HEADSPACE?			X
PROPER CONTAINERS used?	✓		

TEMP: Therm ID: DRHO Observed: 3.4 °C / Corr: 2.7 °C

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL
Certification: NELAC___ DoD___ FL___ NC X
SC___ OTHER___ N/A___
Water Chlorinated: YES___ NO X
Sample Iced Upon Collection: YES X NO___

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER *TYPE SEE BELOW	SAMPLE CONTAINER NO.	SAMPLE CONTAINER SIZE	PRESERVATIVES	ANALYSIS REQUESTED Metals	Chloride	Sulfate	TDS			REMARKS	PRISM LAB ID NO.
~~A~~ 5C1	7/21/15	0959	Water	P	2	250/500	NO_3	X	X	X	X				01
~~A~~ 5C1-Dup	7/21/15	0959	Water	P	2	250/500	NO_3	X	X	X	X				02
5C2	7/21/15	1149	Water	P	2	250/500	NO_3	X	X	X	X				03
5C3	7/21/15	1057	Water	P	2	250/500	NO_3	X	X	X	X				04
5B1	7/22/15	1056	Water	P	2	250/500	NO_3	X	X	X	X				05
5B2	7/22/15	0933	Water	P	2	250/500	NO_3	X	X	X	X				06
5B3	7/21/15	1306	Water	P	2	250/500	NO_3	X	X	X	X				07
BD-UP	7/22/15	1120	Water	P	2	250/500	NO_3	X	X	X	X				08
BD-Down	7/22/15	0945	Water	P	2	250/500	NO_3	X	X	X	X				09

PRESS DOWN FIRMLY - 3 COPIES

Sampler's Signature [signature] Sampled By (Print Name) Alex LeSueur Affiliation Altamont

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

		Date	Military/Hours
Relinquished By: (Signature) [signature]	Received By: (Signature)		
Relinquished By: (Signature)	Received By: (Signature)	Date	
Relinquished By: (Signature)	Received For Prism Laboratories By: [signature]	Date 7-23-15	1445

Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.
☐ Fed Ex ☐ UPS ☐ Hand-delivered ☐ Prism Field Service ☐ Other___
COC Group No. 507047O

Additional Comments:

PRISM USE ONLY
Site Arrival Time:
Site Departure Time:
Field Tech Fee:
Mileage:

SEE REVERSE FOR TERMS & CONDITIONS

NPDES:	UST:	GROUNDWATER:	DRINKING WATER:	SOLID WASTE:	RCRA:	CERCLA	LANDFILL	OTHER:
☐ NC ☐ SC ☐ ___	☐ NC ☐ SC ☐ ___	☒ NC ☐ SC ☐ ___	☐ NC ☐ SC ☐ ___	☐ NC ☐ SC ☐ ___	☐ NC ☐ SC ☐ ___	☐ NC ☐ SC ☐ ___	☐ NC ☐ SC ☐ ___	☐ NC ☐ SC ☐ ___

*CONTAINER TYPE CODES: A = Amber C = Clear G= Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

ORIGINAL