



- Legend**
- Proposed Landfill Gas Compliance Boundary Probe Locations
 - New Locations of Proposed Landfill Gas Compliance Boundary Probes
 - 100-Year Floodplain
 - Approximate Waste Boundary
 - Property Boundary
 - Approximate Locations of Proposed WNCRLC Buildings
 - Haywood County Hydrology
 - 20-Foot Interval Contours
 - Roads

SOURCE:
 Color Orthophotograph - NCDA Haywood County 2008
 Property Boundary - Haywood County GIS 2009
 Hydrology - Haywood County GIS
 100-Year Floodplain - NC Floodplain Mapping Program
 Contour Lines - NCDOT, 2007 LIDAR

REV	DATE	DESCRIPTION	BY	CHK	APV

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

DRAWN BY: Anna Saylor
 PROJECT MANAGER: Joel Lenk
 CLIENT: International Paper Co.
 DATE: 05/11/2010

SCALE
 0 100 200 400 Feet

Proposed Landfill Gas Compliance Boundary Probes

Landfill 5 (44-01)
 Closed International Paper Landfill
 Canton, North Carolina

FIGURE
1

P:\VPLF 5\Landfill Gas Investigation\Figures\Fig 2-Compliance Boundary Probe Installation.mxd

Good morning Christine,

We are installing the compliance boundary LFG probes at the referenced site as we speak. Please refer to the attached map that shows the approved probe locations. Probes 4401C-CBP14, 4401C-CBP15, 4401C-CBP16, and 4401C-CBP17 are located near the center of the map at the toe of the Landfill 5C Area slope in the Beaverdam Creek floodplain. As you might expect, the depth to groundwater is very shallow in these locations. We installed the 4401C-CBP17 boring yesterday evening at hit water at about four feet below ground surface (bgs). The water level rose overnight to approximately one foot bgs. Additionally, there is a new sewer line being installed south of a natural gas line right-of-way that runs parallel to Beaverdam Creek in the same location. Based on these factors we request that we be allowed to eliminate probes 4401C-CBP14, 4401C-CBP15, 4401C-CBP16, and 4401C-CBP17 and install one probe in the location of the black star on the attached figure. I will follow this email with a call to you.

Sincerely,

Joel D. Lenk, P.G.
Altamont Environmental, Inc.
231 Haywood Street
Asheville, North Carolina 28801
Phone: (828) 281-3350 ext. 203
Cell: (828) 280-8375
Fax: (828) 281-3351
jlenk@altamontenvironmental.com
www.altamontenvironmental.com

From: Ritter, Christine [mailto:christine.ritter@ncdenr.gov]
Sent: Friday, April 09, 2010 3:02 PM
To: Joel Lenk
Subject: RE: Landfill Gas Investigation, Closed International Paper LF#5, Canton, NC

Hi Joel-

We are recommending that you install the landfill gas monitoring well in the bedrock above the water table surface with one long screen. Since the landfill is old and gas has had time to migrate, we think that justifies installing the well in the bedrock. Start with a well containing one long screen in the unsaturated zone (in each of the appropriate landfill gas locations), and if you get a hit in the well, we may ask you to go back later and install nested wells with shorter screen lengths in discreet zones to try and pinpoint the zone of gas migration.

Call me if you have any questions.

Christine

From: Joel Lenk [mailto:jlenk@altamontenvironmental.com]
Sent: Monday, April 05, 2010 2:28 PM
To: Ritter, Christine
Subject: RE: Landfill Gas Investigation, Closed International Paper LF#5, Canton, NC

Christine,

Any word on this?

Thanks,

Joel

From: Ritter, Christine [mailto:christine.ritter@ncdenr.gov]
Sent: Friday, March 26, 2010 9:40 AM
To: Joel Lenk
Subject: RE: Landfill Gas Investigation, Closed International Paper LF#5, Canton, NC

Hi Joel-

I wanted to let you know I received your e-mail yesterday and I am forwarding it to the other hydrogeologists in our Solid Waste Section for discussion. You pose some really good questions and I am trying to see who else in our group has dealt with landfill gas wells in bedrock. I hope to have an answer for you later today or early next week.

Thanks,
Christine

From: Joel Lenk [mailto:jlenk@altamontenvironmental.com]
Sent: Thursday, March 25, 2010 4:25 PM
To: Ritter, Christine
Subject: RE: Landfill Gas Investigation, Closed International Paper LF#5, Canton, NC

Christine,

We are preparing to install landfill gas compliance boundary probes at the above referenced site. I am requesting clarification on regarding installation of probes when bedrock is encountered in the vadose zone, i.e. rock is encountered above the water table. I understand per recommendations in your letter, that pairs of probes are recommended if the vadose zone is greater than 30-feet in thickness, however I am unclear as to what to do when rock is encountered as described above. Specifically:

1. Are probes required to be installed in bedrock that is encountered above the water table?
2. If so, how many probes are required in a location where rock is less than 30 feet in depth and above the water table?
3. If the rock is dry, how deep do SWS guidelines require the rock boring be drilled?

Thank you for your help.

Joel D. Lenk, P.G.
Altamont Environmental, Inc.
231 Haywood Street
Asheville, North Carolina 28801
office (828) 281-3350 ext. 203
cell (828) 280-8375
fax (828) 281-3351

From: Ritter, Christine [mailto:christine.ritter@ncdenr.gov]
Sent: Friday, November 06, 2009 3:50 PM
To: Joel Lenk
Cc: tom.richardson@ipaper.com; Gaither, Allen
Subject: Landfill Gas Investigation, Closed International Paper LF#5, Canton, NC

Mr. Lenk,
Please find attached a letter addressing the proposed landfill gas monitoring probe locations at International Paper's Closed Landfill #5, Canton, NC.
Please contact me or Allen Gaither with any questions or comments.
Thank you,
Christine Ritter

* Note: New Email Address Below *

Christine Ritter
Hydrogeologist
Division of Waste Management-Solid Waste Section
NC Department of Environment and Natural Resources
401 Oberlin Road, Suite 150
1646 Mail Service Center
Raleigh, North Carolina 27699-1646

Tel: 919-508-8506
Fax: 919-733-4810
Email: christine.ritter@ncdenr.gov
Web: <http://wastenotnc.org/swhome>

E-mail correspondence to and from this address may be subject to the North Carolina Public Records Law and disclosed to third parties.