



June 25, 2009

Ms. Jaclynn Drummond
Compliance Hydrogeologist
NCDENR – Solid Waste Section
1646 Mail Service Center
Raleigh, North Carolina 27699-1646

RE: Leachate Release
Davidson County Landfill Phase 2
Thomasville, North Carolina

Dear Ms. Drummond:

As you are aware, the Davidson County Landfill (Phase 2) experienced a leachate release on/about June 8th, 2009. This release was due to two issues that have since been corrected. Initially, the “tank full” switch that is designed to turn off the Area 1 leachate pumps in the event that the leachate tank is full malfunctioned. This malfunction allowed the Area 1 leachate pumps to continue to pump leachate into the full tank. This caused leachate to be released into the secondary containment area via the tank overflow piping.

Apparently, during construction of the tank system, the valve that was designed for storm water removal from the southwestern half of the secondary containment area was bumped by a backhoe. Although there was no visible damage at the valve, apparently this incident caused a breach in the piping between the southwestern secondary containment sump and the valve. This breach in the piping allowed the release of leachate from the secondary containment.

Release Response and Inspection

The release was discovered at approximately 8:30 a.m. on the morning of Monday June 8th. Upon discovery, Davidson County began hauling leachate from the secondary containment and NCDENR field inspector, Hugh Jernigan was called to visit the site. Davidson County personnel also constructed a dam to limit the flow of leachate toward existing Rock Dam “B”. The location of the leak and the flow path of leachate are shown on the attached **Figure 1**.

At approximately 2 p.m. on the 8th, I arrived on-site to inspect the area and take photographs of the release. The photographs and descriptions are included in **Attachment A**. In general, less than 500 gallons of leachate appear to have been released based on recovered quantities and amount of observed staining. Approximately 150 gallons were recovered through pumping efforts (approximately 100 gallons were recovered from Rock Dam B, while 50 gallons were recovered behind the dam constructed to restrict flow to Rock Dam B. Minor amounts of

staining were seen along the flow path from the release point to Rock Dam B (see Photographs #2 – 6 in Attachment A). Minimal staining appeared to reach Rock Dam B (Photograph #7) and live tadpoles were noted in the water trapped at the rock dam.

Inspection of the area downstream of Rock Dam B indicated low-flow conditions with most of the flow path being 6-inches wide or less. In one area immediately downstream of the rock dam an area with flow that was 2-feet wide was noted. This area quickly “fingered” into smaller flow paths which coalesced into a 6-inch flow approximately 50 feet downstream from the rock dam (see Photographs #8 and #9). Approximately 150 feet downstream from the rock dam, conditions were found to be wet across a large area; however, this appeared to be more natural wetlands than an area impacted by flow. Several flow paths were noted and all appeared to be clear with no indication of impact from leachate.

The receiving stream (Rich Fork Creek) is located approximately ¼ mile from where the release occurred (see Photographs #10 and #11). There was no indication that the leachate release reached this receiving water.

Between June 8th and June 11th, Davidson County personnel continued to pump leachate from Rock Dam B and remove any obviously stained soils from along the flow path. During work at the secondary containment sump on June 11th, the breach in the piping between the sump and the valve box was noted. At this time the breach in the soil adjacent to the piping was also noted (see photograph #12). On June 11th the piping was plugged and the sump was partially filled with concrete above the elevation of the plugged pipe. County personnel decided that any future removal of water from this half of the secondary containment area would be done using a portable pump that would be placed in the sump.

Sample Collection

On June 11th, 2009, I returned to the site to collect three soil samples, two water samples and a leachate sample. The sampling locations are shown on the attached **Figure 2**. Soil Sample #1 was collected as a background sample for comparison purposes. Soil Sample #2 was collected near the leachate release area, while Soil Sample #3 was collected further down the flowpath near Rock Dam B. It should be noted that these samples were collected after the obviously stained soils had been removed from the area.

Two water samples were also collected. One (WS #1 shown on **Figure 2**) was collected in the shallow water that remained at Rock Dam B. Again, live tadpoles were noted in the water during sampling. The second water sample (WS #2 shown on **Figure 2**) was collected from an ephemeral stream in the floodplain of Rich Fork Creek. We are currently awaiting the results of these samples. The analytical report will be forwarded under separate cover.

Conclusions

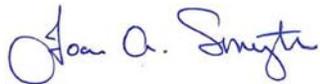
Davidson County has performed all remedial measures that are warranted at this time. All leachate has been removed from the secondary containment and hauled to the local wastewater treatment plant. The pipe breach has been plugged and the sump partially filled with concrete

Ms. Drummond
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and all leachate flow paths (upstream of Rock Dam B) have had stained soils removed and areas graded. Should laboratory data indicate further remedial measures are necessary, Davidson County will discuss options with NCDENR for addressing any further concerns.

If you have any questions, or require additional information, please contact me at your earliest convenience at 919-828-0577 x122 or at the e-mail address below.

Sincerely,
Richardson Smith Gardner and Associates, Inc.

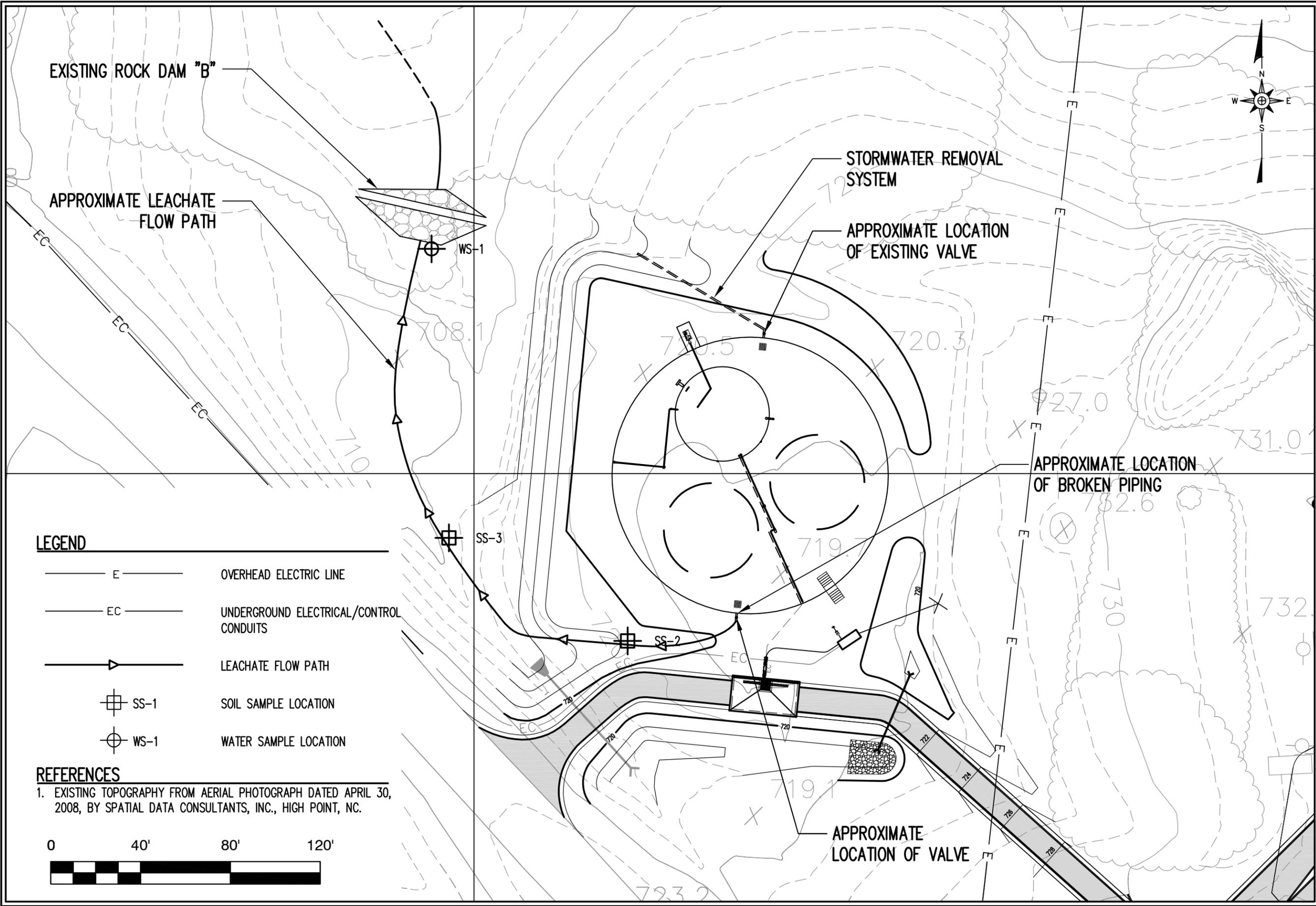
A handwritten signature in blue ink that reads "Joan A. Smyth". The signature is written in a cursive style with a large initial 'J'.

Joan A. Smyth, P.G.
Senior Hydrogeologist
joan@rsgengineers.com

CC: Charles Brushwood – Davidson County
Marc Stokes – DWQ WSRO

Figures

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LEGEND

- E — OVERHEAD ELECTRIC LINE
- EC — UNDERGROUND ELECTRICAL/CONTROL CONDUITS
- ▶— LEACHATE FLOW PATH
- ⊠ SS-1 SOIL SAMPLE LOCATION
- ⊙ WS-1 WATER SAMPLE LOCATION

REFERENCES

1. EXISTING TOPOGRAPHY FROM AERIAL PHOTOGRAPH DATED APRIL 30, 2008, BY SPATIAL DATA CONSULTANTS, INC., HIGH POINT, NC.



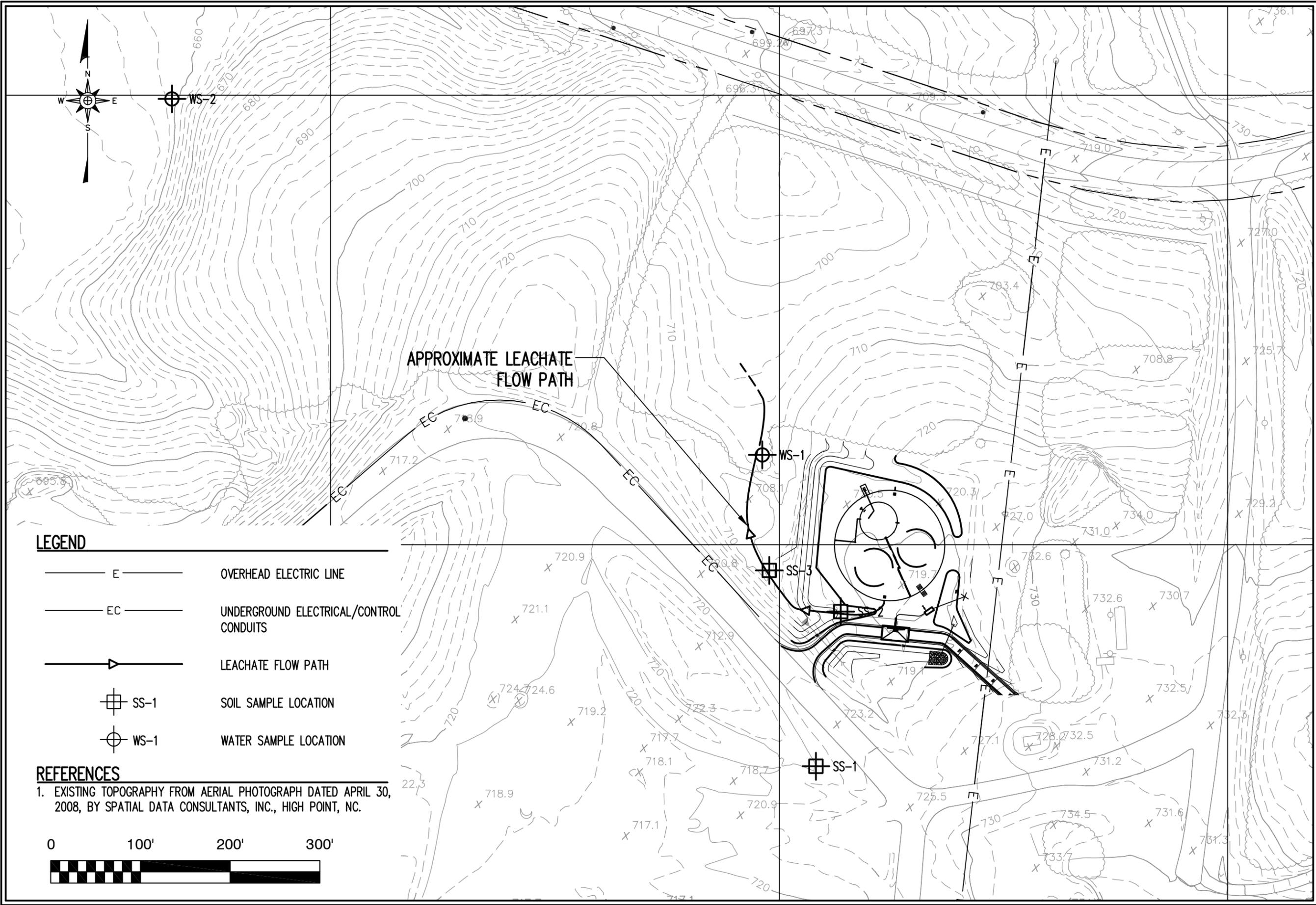

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CHECKED BY:	FIGURE NO.	FILE NAME
DRAWN BY:	1	DAVDCO-B0504
J.A.L.	AS SHOWN	
DATE:	PROJECT NO.	DAVDCO 09-2
Jun. 2009		

LEACHATE DISCHARGE
6-8-09 DETAILS

TITLE:

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LEGEND

-  OVERHEAD ELECTRIC LINE
-  UNDERGROUND ELECTRICAL/CONTROL CONDUITS
-  LEACHATE FLOW PATH
-  SS-1 SOIL SAMPLE LOCATION
-  WS-1 WATER SAMPLE LOCATION

REFERENCES

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DRAWN BY:	J.A.L.	CHECKED BY:	AS SHOWN
DATE:	Jun. 2009	PROJECT NO.:	DAVDCO 09-2
FIGURE NO.:	2	FILE NAME:	DAVDCO-B0506

**LEACHATE RELEASE 6-8-09
 SOIL AND WATER
 SAMPLING LOCATIONS**

TITLE:

Attachment A
Site Photographs

Photo Documentation – Davidson County Phase 2 Leachate Release 6-8-09
Richardson Smith Gardner and Associates, Inc.



Photo #1: Leachate tank – Northeast side of secondary containment area holding leachate as designed, while southwest side leaked.



Photo #2: View to the east showing the dammed area to hold leachate in the ditch. Green hose indicates where leachate was pumped from. Approx. 50 gal. were recovered from this area. Soil Sample #2 collected in the area where the green hose and pump are in the center of the photograph.

Photo Documentation – Davidson County Phase 2 Leachate Release 6-8-09
Richardson Smith Gardner and Associates, Inc.



Photo #3: Flowpath of leachate toward Rock Dam “B”.



Photo #4: Flowpath of leachate toward Rock Dam “B”.

Photo Documentation – Davidson County Phase 2 Leachate Release 6-8-09
Richardson Smith Gardner and Associates, Inc.



Photo #5: Flowpath of leachate toward Rock Dam “B”.



Photo #6: View to the southeast showing staining from leachate along flowpath toward Rock Dam “B”.



Photo #7: Rock Dam “B”. Minimal staining reached this location. Most of the water from this area (approx. 100 gal.) was removed on 6/9/09.



Photo #8: Downstream of Rock Dam “B”. Low flow is evident. Flow path is approximately 2-feet wide at the widest point. Most of the flow is 6-inches wide or less.

Photo Documentation – Davidson County Phase 2 Leachate Release 6-8-09
Richardson Smith Gardner and Associates, Inc.



Photo #9: Flowpath approximately 200 feet downgradient from the outlet of Rock Dam “B”. Flow in this area is approximately 6-inches across.



Photo #10: View of receiving stream (Rich Fork Creek) upstream of bridge on Old Hwy. 29 (facing northeast). Stream is approx. ¼ mile from leachate tank location.

Photo Documentation – Davidson County Phase 2 Leachate Release 6-8-09
Richardson Smith Gardner and Associates, Inc.



Photo #11: View of receiving stream (Rich Fork Creek) to the southwest from bridge on Old Hwy 29. No evidence of leachate reaching this stream was observed.



Photo#12: View of area where leak occurred. The dark line in the soil adjacent to the hose at the center of the photograph (see arrow) is where the leachate leaked out of the breach in the pipe connecting the valve (foreground) to the sump located within the secondary containment area. Photo taken June 11, 2009.