

Piedmont Landfill
and Recycling Center
9900 Freeman Road
Kernersville, North Carolina 27284
910/595-6677
FAX: 910/595-9735



A Waste Management Company

Carmen Johnson

Permit/Co ID #	Date	Doc ID#
34-06	8/12/13	DIV

October 17, 1995

Ms. Sherri Hoyt
North Carolina Dept of Environment, Health, and Natural Resources
Solid Waste Section (SWS)
401 Oberlin Road
Raleigh, NC 27611

Re-**SCANNED**
3/14/14

Re: Application to Recirculate Leachate at the Piedmont Landfill & Recycling Center (PLFRC), Kernersville, NC

Dear Ms. Hoyt:

In accordance with the SWS's March 3, 1994 memo regarding leachate recirculation application requirements, the PLFRC hereby submits an application to recirculate leachate. As you can see from this application, we would like to begin recirculating leachate in our new cell that is presently under construction. We would greatly appreciate your expedient review on this application. Thanks!

If you have any questions, feel free to contact either myself or Ed Gibson @ (910) 595-6677.

Sincerely,

William R. Lewis, P.E.
Division President & General Manager

cc: Ed Gibson w/o encl
Brent Rockett w/encl

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201 T30
Division
Kernersville, NC

LEACHATE RECIRCULATION

AT

PIEDMONT LANDFILL AND RECYCLING CENTER
KERNERSVILLE, NORTH CAROLINA

PREPARED BY:

RUST ENVIRONMENT & INFRASTRUCTURE
GREENVILLE, SOUTH CAROLINA

SEPTEMBER 1995

RUST E&I No.: 33025





**LEACHATE RECIRCULATION
AT
PIEDMONT LANDFILL AND RECYCLING CENTER
KERNERSVILLE, NORTH CAROLINA**

INTRODUCTION

Piedmont Landfill and Recycling Center (Piedmont) is an existing municipal solid waste landfill constructed with a base liner and leachate collection and removal system. Currently, leachate is collected in sumps and pumped through forcemains to be stored in tanks until transported to a local treatment plant for disposal. As an alternate to this procedure Piedmont wishes to recirculate leachate in a portion of the Phase 3 area in accordance with the memo from the Solid Waste Section dated March 3, 1994. The leachate will be distributed in lined cells through perforated pipes in close contact with the waste.

EXISTING LEACHATE COLLECTION/MONITORING SYSTEM

- The current leachate collection system uses the slope of the base grades to transport the leachate to the collection pipes which are located in the edge of the cells.
- Each leachate collection pipe slopes toward a sump. From the sump, leachate is pumped through a force main, located around the perimeter of the landfill, to storage tanks located on the south side of the site.
- The leachate is monitored semi-annually for the Appendix 1 groundwater parameters in compliance with the existing permit; therefore, a base line sample is already available.
- An automatic weather station is also maintained on site to provide daily temperature and rainfall data.

INSTALLATION

The first area where leachate will be distributed, Phase 3 Cell 2 Subcell 1, is shaded on Drawing No. 1, Site Plan.

- The first layer of perforated piping will be installed following completion of a 10 foot lift of waste. This will provide approximately 10 feet of depth for protection of the liner/leachate collection system..
- Leachate will be recirculated through exfiltration trenches. These consist of perforated pipe in granular filled trenches, see Drawing No. 2 for a detail.

- The recycling system will be placed along the horizontal lift surface of the cell.
- The trenches will be located radially from a distribution manhole in the cell. Additional layers of perforated pipes will be placed as the depth of waste increases.
- A supply pipe will convey leachate to a distribution manhole located in a central position in the cell and from which exfiltration trenches, pipe in a granular bedding, radiate outward.
- Flow will be measured to monitor field operations.
- Cell supply pipe will be connected to the force main located on perimeter of landfill and leachate for recirculation will come from the main pipe.
- All recirculation areas are within the boundaries of the lined landfill with appropriately designed leachate collection systems. The areas are sloped to properly convey the leachate into the collection system after it has passed through the refuse, to prevent any buildup of head on the liner.

Once the first layer of waste is placed in Subcell 2, a piping distribution system will be constructed similar to the previous one in Subcell 1. As the system expands, additional areas within Phase 3 will be used.

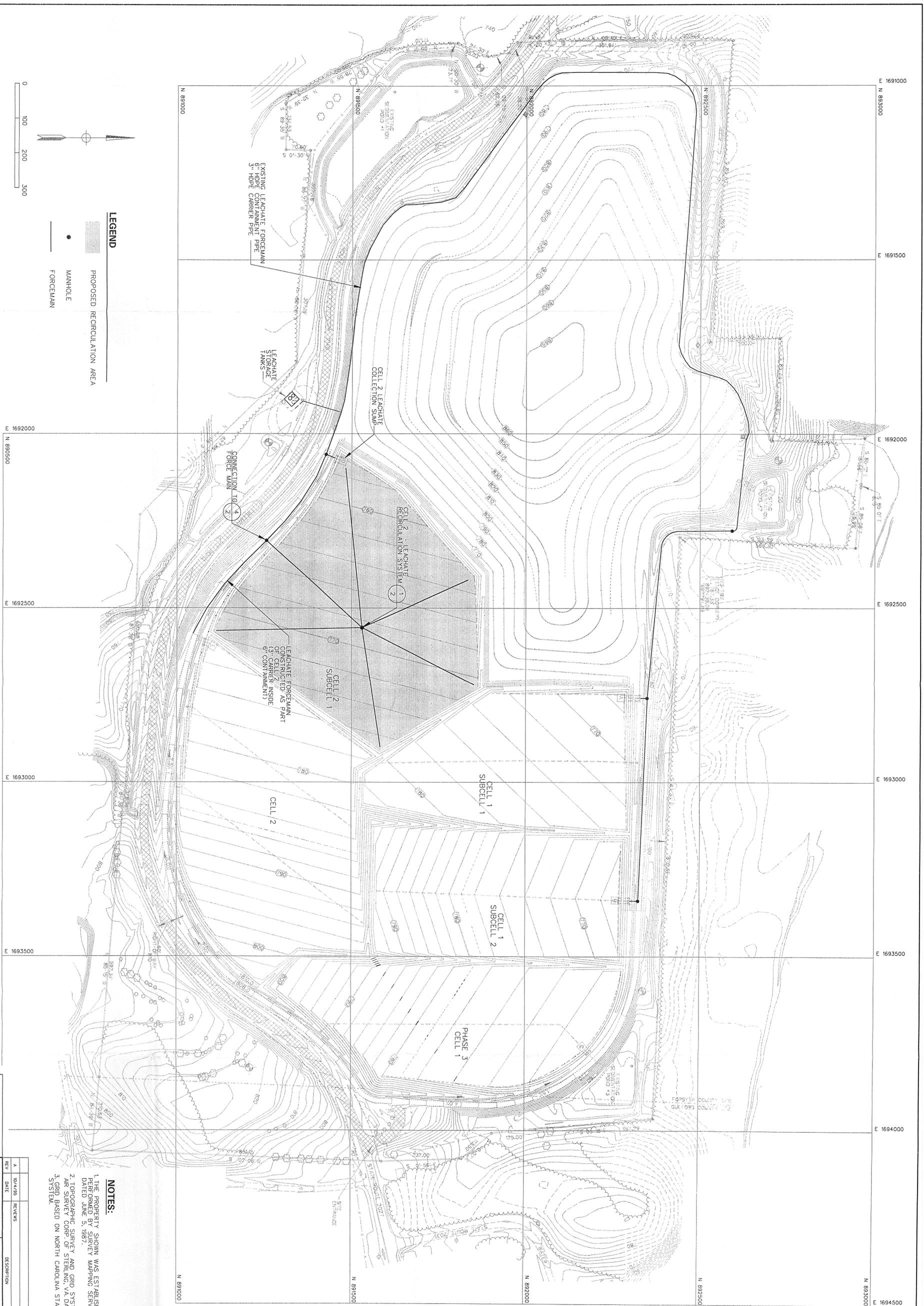
OPERATIONS

Leachate will be applied as conditions indicate that the refuse is capable of absorbing the liquid and normal landfill operations are not hampered.

- Since the leachate will be applied beneath the waste, odor is not expected to be a concern.
- Leachate pumping will be controlled by landfill personnel overseeing the operation. All recirculation operations will be done manually. Site personnel will perform regular inspections to detect any leachate seepage. A typical inspection log is attached.
- Flow rates will be monitored and adjusted as necessary. The rate may be varied depending on weather conditions to prevent runoff or seepage.
- Records of weather conditions will be documented using the existing rain gauge and thermometer.

Leachate Recirculation
Piedmont Landfill & Recycling Facility

- The most recent leachate analysis will be used to establish a baseline for the leachate constituents. In addition to the normal Appendix 1 parameters the leachate will also be tested for PH and BOD at the same time as normal testing is done.
- The quantity of leachate generated will be measured using flow meters located on each sump's discharge. This information along with the leachate recirculated will be maintained on a weekly basis.
- Excess leachate which cannot be recirculated will be transported by tanker for off-site disposal.



LEGEND

- PROPOSED RECIRCULATION AREA
- MANHOLE
- FORCEMAIN



NOTES:

1. THE PROPERTY SHOWN WAS ESTABLISHED FROM SURVEY PERFORMED BY SURVEY MAPPING SERVICES OF SOUTH CAROLINA DATED JUNE 5, 1987.
2. TOPOGRAPHIC SURVEY AND GRID SYSTEM PREPARED BY MAP SURVEY CORP. OF STERLING, VA. DATED 7-1-93.
3. GRID BASED ON NORTH CAROLINA STATE PLANE COORDINATE SYSTEM.

REV.	DATE	REVISIONS	DES. BY	APP. BY
A				

PROJECT NO. 33025
 DATE JUNE 1995
 DES. BY [blank]
 CHK. BY [blank]
 APP. BY [blank]

DESCRIPTION: PIEDMONT LANDFILL AND RECYCLING CENTER, KERNERSVILLE, FORSYTH COUNTY, NORTH CAROLINA

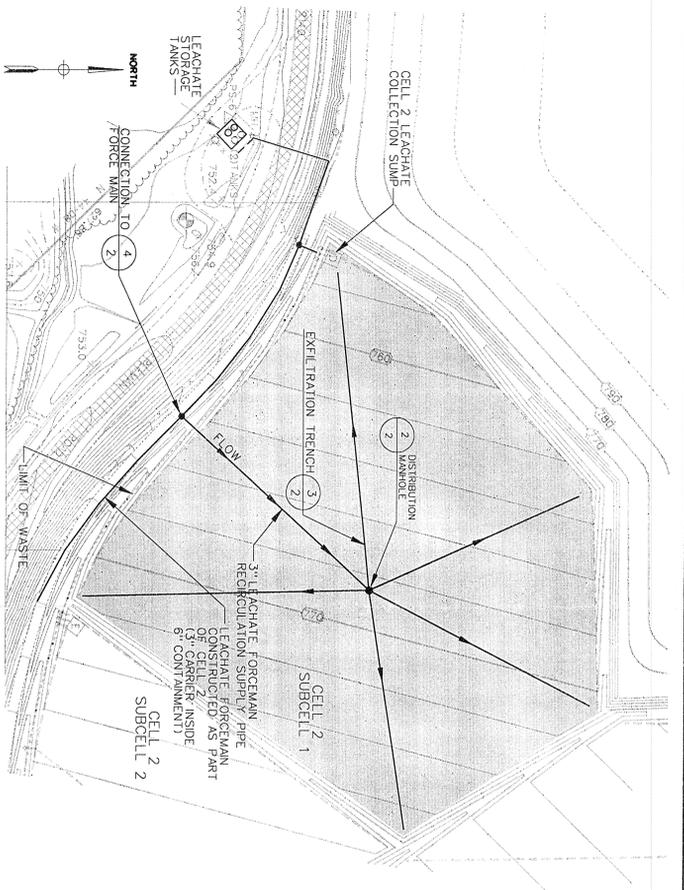
LEACHATE RECIRCULATION SYSTEM SITE PLAN

SHEET 1 OF 2
 DRAWING NO. 1

PREPARED BY
RUST ENVIRONMENT & INFRASTRUCTURE

Waste Management
 of Carolinas, Inc.

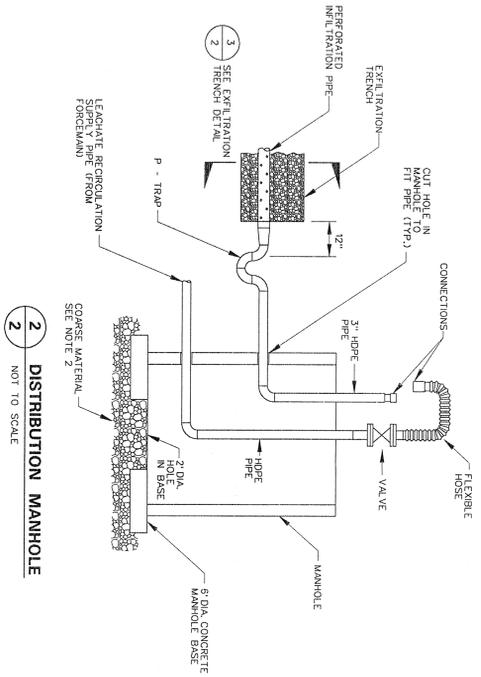
1



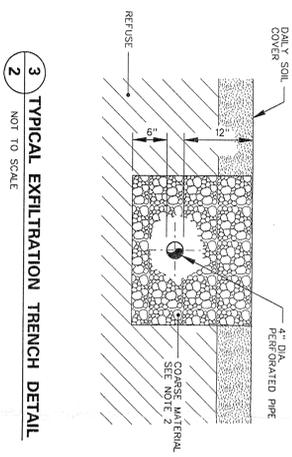
1 CELL 2 - LEACHATE RECIRCULATION SYSTEM



PLAN

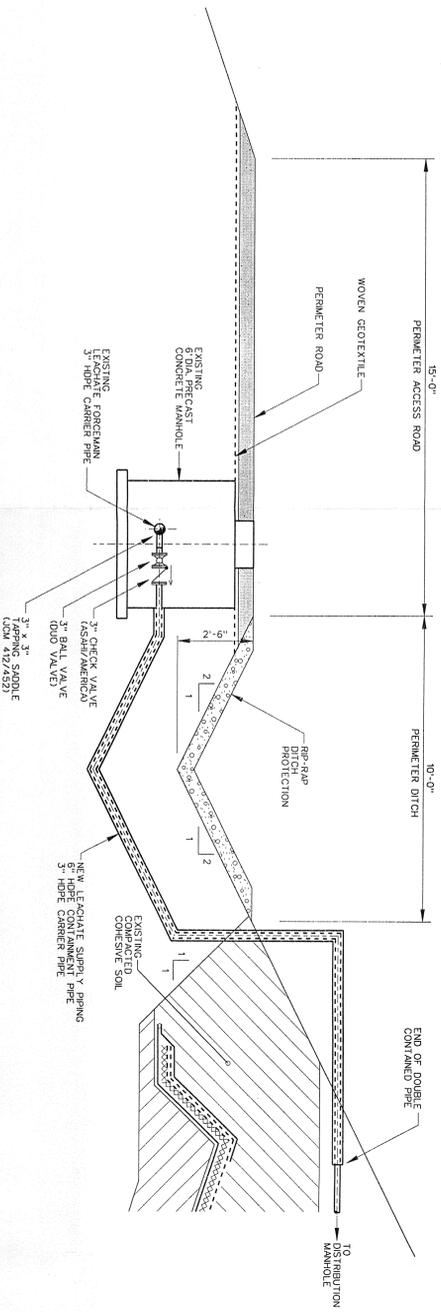


2 DISTRIBUTION MANHOLE
NOT TO SCALE



3 TYPICAL EXFILTRATION TRENCH DETAIL
NOT TO SCALE

NOTES:
1. DIMENSIONS SHOWN ARE APPROXIMATE AND ARE BASED ON THE BEST AVAILABLE INFORMATION ON OPERATING LEACHATE RECIRCULATION WITH EXFILTRATION SYSTEMS.
2. COARSE MATERIAL IN TRENCHES AND TRENCHES, OR OTHER SUBSIDIARY TRENCHES, OR OTHER SUBSIDIARY NONDEGRADABLE MATERIAL.



4 LEACHATE RECIRCULATION CONNECTION TO FORCEMAIN
NOT TO SCALE

REV	DATE	REVISIONS	DES BY	APP BY
A	10/4/95	REVIEWS		

PROJECT NO	33025	DESCRIPTION	PERMONT LANDFILL AND RECYCLING CENTER KERNERSVILLE, FORSYTH COUNTY, NORTH CAROLINA
DES BY		DATE	JUNE 1995
DIN BY			
CHK BY			
APP BY			

PREPARED BY:
RUST ENVIRONMENT & INFRASTRUCTURE

Waste Management
of Carolinas, Inc.

SHEET 1 OF 2
DRAWING NO. 2