

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

August 28, 1996

Lesley Moxley, Esquire  
Office of the County Attorney  
County of Durham  
Post Office Box 3508  
Durham, NC 27702

RE: **CURRIN BROTHERS LANDFILL PERMIT #32-I, DURHAM COUNTY**

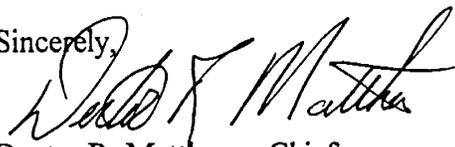
Dear Ms. Moxley:

The Solid Waste Section wishes to clarify the letter from Jim Barber of the Section to Glenn Dunn of Poyner and Spruill, dated August 19, 1996, and to correct any misimpression that the letter may have created.

Permit #32-I, issued to Currin Brothers on March 22, 1995, was issued for operation of the landfill in Areas 1 and 3, in accordance with sheet 2 of the approved plans. The landfill is permitted only for these two areas. The permit was issued for a maximum of five years from the date of issuance, in accordance with 15A N.C. Administrative Code 13B .0563(4). Note that this specific rule prevails over the general rule, 15A N.C. Administrative Code .0201(e), which was cited in Mr. Barber's letter.

In order to obtain a permit for the next area of operation at the Currin Brothers site, the applicant is required to comply with all applicable statutes and rules effective on the date of issuance of the new permit. To the extent that neither a rule nor the on-site or off-site condition addressed by the rule has changed since an LCID landfill applicant received site approval, Section staff have advised applicants that an application for a new permit on that site does not need to duplicate adequate demonstrations already made for siting criteria.

Sincerely,

  
Dexter R. Matthews, Chief  
Solid Waste Section

cc: Glenn Dunn

LCIDN32-I Permit Currin Brothers  
Landfill

Jim Barber  
DC REVIEW  
FOR BATA CORP  
LCID CF'S  
DORHAM  
① DORHAM RAGBON SITE  
② LATTI SITE  
③ LATTI YES BATA

\* NOTE  
10563  
5yr  
EXPIRES

Link to original WordPerfect file

How to access the above link?

Ferry - FFI

NO. COA 98-157

NORTH CAROLINA COURT OF APPEALS

Filed: 17 November 1998

Fin + Mark  
FFI  
Durham Eastern  
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T.

IN RE DECLARATORY RULING PETITION

FOR JUDICIAL REVIEW

COUNTY OF DURHAM,

Appellant,

v.

NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES,

Appellee,

and

CURRIN BROS., INC., a North Carolina Corporation,

Intervenor-Appellee.

Appeal by petitioner, County of Durham, from judgment entered 28 October 1997 by Judge A. Leon Stanback, Jr. in Durham County Superior Court. Heard in the Court of Appeals 6 October 1998.

*Assistant Durham County Attorney Lesley F. Moxley for petitioner-appellant County of Durham.*

*Attorney General Michael F. Easley, by Assistant Attorney General Nancy E. Scott, for the respondent-appellee North Carolina Department of Environment and Natural Resources.*

*Poyner & Spruill, L.L.P., by Timothy P. Sullivan, for intervenor-appellee Currin Bros., Inc.*

SMITH, Judge.

Located within the County of Durham (County) are three Land Clearing and Inert Debris (LCID) landfills, two of which are owned and operated by Intervenor-Appellee, Currin Brothers. As LCID landfills, each is permitted to receive solid waste generated from land clearing activities, yard trash, untreated or unpainted wood, and solid waste that is virtually inert and likely to retain its physical and chemical structure. See N.C. Gen. Stat. § 130A-290(a)(14)-(15) (1997). The North Carolina Department of Environment and Natural Resources (NCDENR) approved the applications for each of the LCID landfills and issued permits for their operation "in accordance with Article 9, Chapter 130A, of the General Statutes of North Carolina and all rules promulgated thereunder." NCDENR notified County's planning department of the proposed landfills and County provided NCDENR with zoning approval letters. See N.C. Admin. Code tit. 15A, r. 13B.0565 (January 1993) (stating that before the situs of an LCID landfill can be approved, NCDENR must receive "[a]n approval letter from the unit of local government having zoning authority over the area . . . stating that the site meets all of the requirements of the local zoning ordinance"). A public hearing was not held prior to the approval of the permits nor was the clerk to the board of commissioners informed of the applications.

Pursuant to N.C. Gen. Stat. § 150B-45 (1991), County requested a declaratory ruling from NCDENR that (1) LCID landfills are not "demolition landfills" within the meaning of N.C. Gen. Stat. § 130A-294(a)(4)a. (1997), and (2) LCID landfills are subject to the notice and hearing provisions of N.C. Gen. Stat. § 130A-294(b1)(2) (1997). On 20 November 1996, NCDENR issued a declaratory ruling that LCID landfills are not "sanitary landfills" pursuant to N.C. Gen. Stat. § 130A-294(a)(4)a. and that the notice procedures under the statute only apply to sanitary landfills. Thus, NCDENR concluded, the notice requirements of the statute do not apply to LCID landfills.

County then filed a petition for judicial review of NCDENR's findings, pursuant to N.C. Gen. Stat. § 150B-4 (1991). On 28 October 1997, the Superior Court of Durham County upheld the declaratory ruling issued by NCDENR. County appeals.

In determining whether an agency erred in interpreting a statutory term, an appellate court employs a de novo review. *See Brooks, Comr. of Labor v. Grading Co.*, 303 N.C. 573, 580-81, 281 S.E.2d 24, 29 (1981). However, even when reviewing a case de novo, courts recognize the long-standing tradition of according deference to the agency's interpretation. *See Newsome v. N.C. State Bd. of Elections*, 105 N.C. App. 499, 507, 415 S.E.2d 201, 205 (1992) (citing *Comr. of Insurance v. Automobile Rate Office*, 294 N.C. 60, 241 S.E.2d 324 (1978)). It is a tenet of statutory construction that a reviewing court should defer to the agency's interpretation of a statute it administers "so long as the agency's interpretation is reasonable and based on a permissible construction of the statute." *Carpenter v. N.C. Dept. of Human Resources*, 107 N.C. App. 278, 279, 419 S.E.2d 582, 584, *temporary stay allowed*, 332 N.C. 482, 421 S.E.2d 348, *review allowed*, 332 N.C. 664, 424 S.E.2d 398 (1992), *review denied as improvidently granted*, 333 N.C. 533, 427 S.E.2d 874 (1993). "[I]f the statute is silent or ambiguous with respect to the specific issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute." *Chevron U.S.A. v. Natural Res. Def. Council*, 467 U.S. 837, 843, 81 L. Ed. 694, 703, *reh'g denied*, 468 U.S. 1227, 82 L. Ed. 2d 921 (1984). Thus we review this case de novo but accord considerable weight to NCDENR's interpretation of the statute at issue.

The first issue presented to the Court for review is whether the superior court erred in affirming NCDENR's declaratory ruling that LCID landfills are not sanitary landfills under N.C. Gen. Stat. § 130A-294(a)(4)a., and consequently the applicability of the notice requirements of N.C. Gen. Stat. § 130A-294(b1)(2). When resolving an issue of statutory construction, we must first look to the language of the statute. *See Hieb v. Lowery*, 344 N.C. 403, 409, 474 S.E.2d 323, 327 (1996). Section 130A-294(a)(4)a. requires NCDENR to

[d]evelop a permit system governing the establishment and operation of solid waste management facilities. A landfill with a disposal area of ½ acre or less for the on-site disposal of land clearing and inert debris is exempt from the permit requirement of this section and shall be governed by G.S. 130A-301.1. A landfill for the disposal of demolition debris generated on the same parcel or tract of land on which the landfill is located that has a disposal area of one acre or less is exempt from the permit requirement of the section and rules adopted pursuant to this section, and shall be governed by G.S. 130A-301.2. The Department shall not approve an application for a new permit, the renewal of a permit, or a substantial amendment to a permit for a sanitary landfill, excluding demolition landfills as defined in the rules of the Commission for Health Services, except as provided in subdivisions (3) and (4) of subsection (b1) of this section.

N.C. Gen. Stat. § 130A-294(a)(4)a. (1997). It is the permit requirements referred to in this statute that County brings to issue in this case. This single paragraph addresses several distinct categories of solid waste disposal facilities. A "landfill" is statutorily defined as a "disposal facility . . . where waste is placed in or on land." N.C. Gen. Stat. § 130A-290(a)(16) (1997). Likewise, a "sanitary landfill" is defined as "a facility for disposal of solid waste on land in a sanitary manner *in accordance with the rules concerning sanitary landfills*." N.C. Gen. Stat. § 130A-290(a)(31) (1997) (emphasis added). Thus, NCDENR, cloaked with the rulemaking authority with regard to issues of solid waste management, determines how sanitary landfills are to be defined and managed.

By defining "demolition landfill" as "a *sanitary landfill* that is limited to receiving stumps, limbs,

leaves, concrete, brick, wood, uncontaminated earth or other solid wastes as approved by the Division," NCDENR intended for demolition landfills to be a sub-category of, and thus encompassed by the rules concerning, sanitary landfills. N.C. Admin. Code tit. 15A, r. 13B.0101(4) (October 1995) (emphasis added). Likewise, because of the language used in the rules, NCDENR did *not* intend for sanitary landfills to encompass LCID landfills. Rule 13B.0501 provides:

(a) The disposal of solid waste shall be by the following approved methods or any combination thereof:

- (1) Sanitary landfill;
- (2) Land clearing and inert debris landfill;
- (3) Incineration; or
- (4) Disposal by other sanitary methods which may be developed and demonstrated to be capable of fulfilling the basic requirements of these rules and which have been approved by the Division.

N.C. Admin. Code tit. 15A, r. 13B.0501 (October 1993). By enumerating both sanitary landfills and LCID landfills as approved methods of solid waste disposal, NCDENR made a marked distinction between the two. In addition, NCDENR established entirely separate application and operational requirements for sanitary landfills and LCID landfills. *Compare* N.C. Admin. Code tit. 15A, r. 13B.0504 (February 1991), 13B.0505 (September 1990) (Application Requirements and Operational Requirements for Sanitary Landfills); *with* N.C. Admin. Code tit. 15A, r. 13B.0565 (January 1993), 13B.0566 (January 1993) (Application Requirements and Operation Requirements for LCID Landfills). Furthermore, NCDENR set up separate permit requirements for LCID landfills. *See* N.C. Admin. Code tit. 15A, r. 13B.0563 (January 1993). Rule 13B.0563 sets forth when a permit is and is not required for LCID landfills and makes no mention whatsoever of notice to or approval by the local government. The rule applicable to LCID landfills is starkly different from the rule regarding application requirements for sanitary landfills. *See* N.C. Admin. Code tit. 15A, r. 13B.0504 (February 1991). To obtain approval for a sanitary landfill, the application must be accompanied by a permit *under all conditions*, and before an application can be granted, the local government *must* approve of the landfill and confirm that the landfill meets all requirements of local zoning ordinances. These rules governing sanitary and LCID landfills evidence NCDENR's intention to treat the two types of landfills differently.

In addition, the relative risk each poses to the public's health and safety mandates a distinction between the two. Sanitary landfills are filled with household garbage and items that are likely to decompose, thus emitting odor, attracting disease-carrying vermin, and causing health concerns. Land clearing debris is "generated solely from land-clearing activities" and has a natural, organic composition. *See* N.C. Gen. Stat. § 130A-290(a)(15) (1997). Likewise, inert debris, by its statutory definition, must "consist[] solely of material that is virtually inert and that is likely to retain its physical and chemical structure under expected conditions of disposal." *See* N.C. Gen. Stat. § 130A-290(a)(14) (1997). Therefore, the additional safeguards that apply to sanitary landfills are unnecessary for LCID landfills.

It is undeniable that NCDENR intended for sanitary landfills and LCID landfills to be treated differently, each with its own definition, regulations, and application procedures. Thus, the trial court did not err in upholding NCDENR's declaratory ruling.

Because we have determined that LCID landfills do not fall within the statutory definition of "sanitary landfill," we turn next to the question of the applicability of the notice requirements of N.C. Gen. Stat. § 130A-294(b1)(2). This section as written pertains exclusively to sanitary landfills.

Within 10 days after receiving an application for a permit, for the renewal of a permit, or for a substantial amendment to a permit for a *sanitary landfill*, the Department shall notify the clerk of the board of commissioners of the county or counties in which the sanitary landfill is proposed to be located

N.C. Gen. Stat. § 130A-294(b1)(2) (1997) (emphasis added). Because this section refers exclusively to sanitary landfills and we have concluded that LCID landfills are *not* sanitary landfills, it follows that the notice requirements of this section are inapplicable to LCID landfills.

The trial court's decision is therefore

Affirmed.

Judges GREENE and WALKER concur.

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State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director



August 19, 1996

Mr. Glenn Dunn  
Poyner & Spruill  
P.O. Box 10096  
Raleigh, North Carolina 27605

Subject: Currin Brothers Landfill Permit #32-I

Dear Mr. Dunn:

In response to your questions concerning the above referenced permit, the Currin Bros. Land Clearing and Inert Debris landfill was given site approval 62.948 acres in accordance with 15A NCAC 13B Section .0564, Siting Criteria for Land Clearing and Inert Debris Landfills. The first two cells for construction (Areas 1 and 3 on the approved site plan, page 2 of 7) is for the first five years of operational capacity.

In accordance with G.S. 130A-294 and 15A NCAC 13B Section .0201 (e) "Permits, including those issued prior to the effective date of this Rule, shall be reviewed every five years. Modifications, where necessary, shall be in accordance with the Rules in effect at that time of review for those areas of a permitted sanitary landfill site which have not previously received solid waste".

If you have any questions about this information please contact me at (910) 486-1191.

Sincerely,

Jim Barber  
Eastern Area Engineer  
Solid Waste Section

cc: Dexter Matthews  
Jim Coffey  
Terry Dover  
Robert Hearn  
Raleigh Central file: Permit 32-I

Fayetteville Regional Office

225 Green Street, Suite 601, Fayetteville, North Carolina 28301 Telephone 910-486-1191 FAX 910-486-1791

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COUNTY OF DURHAM

OFFICE OF THE COUNTY ATTORNEY

P.O. Box 3508
Courthouse, 200 E. Main Street
Durham, N.C. 27702
(919) 560-0705
(919) 560-0719 (FAX)

Handwritten notes: 'Durham Co', 'C in Landfill', 'Ph: 1 (LCID)', 'Jim FVE', 'Return to DM'

Fax Transmittal Letter

Date: 8/22/96

Pages: (Including Cover Sheet)

TO: Nancy Scott, Atty, DEHNR
919/733-4810

From: Lesley Maxley
560-0714

Message:

The resolution went out as mass mailing on or about 7/9/96. I personally faxed some; I do not recall whether DEHNR was one of them. Ellis Hankins from Poyner + Spruill also rec'd one. Both Currin LCID #1 + LCID #2 are in the watershed. #1 is in the water quality basin area for Falls Lake and #2 is in the water quality critical area for Falls Lake. #2 is the case to the BOA. Also, I think you should know that the BOCC is considering a request for a declaratory rule regarding the statute (LCID's vs. demolition landfills). I will be out of town

If all pages are not received, please contact the Office of the County Attorney at 560-0705.

CONFIDENTIAL AND PRIVILEGED

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tomorrow (Friday), but will be back on Monday, 8/26. The BOCC will be meeting that night, 8/26, and this may come up. Let's talk on Monday about this. Thanks so much. Lesley

r 10  
8/23/96  
RF

**RESOLUTION**

**DURHAM COUNTY BOARD OF COMMISSIONERS  
DURHAM COUNTY, NORTH CAROLINA**

**REGARDING PERMITTING OF LAND CLEARING & INERT DEBRIS (LCID)  
LANDFILLS**

**WHEREAS**, the General Assembly of North Carolina has created the Department of Environment, Health and Natural Resources and directed the Department to maintain a Division of Solid Waste Management: "For the purpose of promoting and preserving an environment that is conducive to public health and welfare, and preventing the creation of nuisances . . .," NC Gen. Stat. Sec. 130A-291(a); and

**WHEREAS**, the General Assembly has found that: "Inefficient and improper methods of managing solid waste create hazards to public health, cause pollution of air and water resources, constitute a waste of natural resources, have an adverse effect on land values, and create public nuisances," NC Gen. Stat. Sec. 130A-309.03(a)(1); and that "Problems of solid waste management have become a matter statewide in scope and necessitate State action to assist local governments in improving methods and processes to promote more efficient methods of solid waste collection and disposal," NC Gen. Stat. Sec. 130A-309.03(a)(2); and

**WHEREAS**, the General Assembly adopted the Solid Waste Management Act of 1989 to "Regulate in the most economically feasible, cost-effective, and environmentally safe manner the . . . collection, transport, . . . and disposal of solid waste in order to protect the public health, safety, and welfare . . . for the people of this State . . .," NC Gen. Stat. Sec. 130A-309.03(b)(1); and

**WHEREAS**, Durham County is a political subdivision of North Carolina which is dedicated to the principles of accountability and good government; and

**WHEREAS**, Durham County is concerned about the health, safety and welfare of residents within its local government jurisdiction; and

**WHEREAS**, the North Carolina Department of Environment, Health and Natural Resources is charged with monitoring and supervising permitted activities under the Solid Waste Management Act; and

**WHEREAS**, the General Assembly requires that the Department of Environment, Health and Natural Resources: "Develop a permit system governing the establishment and operation of solid waste management facilities," NC Gen. Stat. Sec. 130A-294(a)(4)a.,

which provides for public hearings prior to permitting of all but "demolition landfills," NC Gen. Stat. Sec. 130A-294(a)(4)a; and

**WHEREAS**, the Department of Environment, Health and Natural Resources' policy has been to exclude Land Clearing and Inert Debris landfills from the public hearing process by classifying Land Clearing and Inert Debris landfills as demolition landfills; and

**WHEREAS**, the Department of Environment, Health and Natural Resources has permitted two (2) Land Clearing and Inert Debris landfill sites on SR 1900 (a.k.a. Coley Road) in Durham County, near the Wake County line; and

**WHEREAS**, SR 1900 is located in a water quality critical area; and

**WHEREAS**, SR 1900 and the surrounding roads are in populated areas; and

**WHEREAS**, SR 1900 is experiencing greatly increased dump truck traffic as a result of the location of the landfills, thereby causing increased safety concerns due to torn up pavement and high speed limits of 45 mph, resulting in at least three overturned trucks; and

**WHEREAS**, SR 1900 is not completely paved, resulting in increased amounts of airborne dust; and

**WHEREAS**, significant quantities of waste going into these landfills are generated by Wake and other counties surrounding Durham County; and

**WHEREAS**, transportation of waste to these landfills necessitates transportation through Durham County and adequate manpower is not available to police SR 1900 for violations of regulations by haulers transporting said waste, resulting in significant financial costs to the County for clean up of illegal dumping and to the State for road repairs; and

**WHEREAS**, Durham County recognizes that similar waste is generated by development in Durham County; and

**WHEREAS**, Durham County government desires to work with all affected parties, including the waste generators and haulers, to effect a solution to the problem.

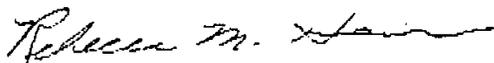
**NOW, THEREFORE, BE IT RESOLVED** that the Durham County Board of Commissioners hereby:

- (1) implores the State of North Carolina to assume responsibility and liability for the health, safety and welfare of the residents of the community surrounding the Land

Clearing and Inert Debris landfill sites on SR 1900, including, but not limited to, increased enforcement of motor vehicle, health and environmental safety laws, prevention of nuisances and closure of the two (2) landfill sites located on SR 1900;

- (2) opposes the siting of Land Clearing and Inert Debris landfills in Durham County without benefit of all the safeguards afforded the public under NC Gen. Stat. Sec. 130A-294(a)(4)a. for siting of non-demolition landfills, and requests amendment of such statute and applicable rules to effect the same;
- (3) requests that the General Assembly amend the statute to allow for a public hearing prior to issuance of a permit for an Land Clearing and Inert Debris landfill and to take into account aesthetic factors in the siting of Land Clearing and Inert Debris landfills, such as visibility, noise, dust, etc.; and
- (4) requests that the State of North Carolina reduce the speed limit on SR 1900 to a speed at or below 35 mph;
- (5) requests that the State of North Carolina Department of Transportation resurface SR 1900 and pave the unpaved portion of same;
- (6) requests that the State of North Carolina Department of Transportation complete road work on SR 1903 (a.k.a. Kemp Road) as soon as possible;
- (7) requests that the State of North Carolina amend the Solid Waste Management Act, NC Gen. Stat. Sec. 130A-294, to require operators of solid waste management facilities to identify routes that their haulers will use prior to notification of local government entities, any public comment period and issuance of the permit;
- (8) requests that the Secretary of the North Carolina Department of Environment, Health and Natural Resources review the permits of the SR 1900 (Coley Road) landfill operations for compliance with the statute and applicable rules pursuant to NC Gen. Stat. Sec. 130A-303, et al.;
- (9) requests that the State of North Carolina Department of Environment, Health, and Natural Resources contact Wake County and surrounding counties about directing and controlling the flow of solid waste from their counties into Durham County.
- (10) requests that the State of North Carolina provide leadership in requiring localities to promote the recovery, recycling and reuse of material and energy resources from solid waste deposited in Land Clearing and Inert Debris landfills.

**BE IT FURTHER RESOLVED**, that copies of this Resolution, adopted this the 30th day of May, 1996, shall be transmitted to the Governor of the State of North Carolina, to the Secretary of the North Carolina Department of Environment, Health and Natural Resources, to each of the members of the General Assembly representing Durham County, to the Secretary of the North Carolina Department of Transportation, to the North Carolina Association of County Commissioners, and to the County Manager for the County of Wake.



---

Rebecca M. Heron, Chairman



Prepared by: Jim Coffey  
Mail to: Rob Harrison, Little & Little  
PO Box 1448  
Raleigh, NC  
27602

BOOK 2071 PAGE 3

PERMIT NUMBER: 32-I  
PERMIT ISSUED: March 22, 1995

FILED  
BOOK 2071 PAGE 3-7

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Facility Name: Currin Bros. Inc. LCID landfill #2  
North of S.R. 1902 and West of S.R. 1900

RUTH C. GARRETT  
REGISTER OF DEEDS  
DURHAM COUNTY, N.C.

APR 14 1995

CONDITIONS OF PERMIT

**LITTLE & LITTLE**

1. This permit is issued for a period not to exceed five years from date of issuance. This permit is for the construction of the landfill according to the approved plans. This permit approves the operation (disposal of LCID material) in Areas 1 and 3, in accordance with the approved plans, sheet 2 of 7. Any revisions of these approved plans must be approved by the North Carolina Solid Waste Section.
2. Amendments or revisions to the NC Solid Waste Management Rules or any violation of groundwater standards may necessitate modification of the approved plans or closure of the facility.
3. This permit shall not be effective unless the certified copy is filed in the Register of Deeds office and indexed in the grantor index under the name of the owner of the land in the county or counties in which the land is located. The certified copy of the permit, affixed with the Register's seal and the date, book, and page number of recording shall be returned to the Division of Solid Waste Management, within thirty (30) working days, from date received.
4. When this property is sold, leased, conveyed, or transferred, the deed or other instrument of transfer shall contain in the deed description section in no smaller type than that used in the body of the deed or instrument a statement that the property has been used as a land clearing and inert debris landfill.
5. This facility is permitted to receive land clearing waste, yard trash, untreated and unpainted wood, and inert debris such as rock, brick, concrete, concrete block, and uncontaminated soil. Waste acceptance requirements may be affected by future revisions and amendments to the NC General Statutes, or to the NC Solid Waste Management Rules.
6. Waste shall be placed a minimum of four (4) feet above the seasonal high water table.
7. This facility shall conform to the operational requirements of the NC Solid Waste Management Rules, 15A NCAC 13B .0566, and to the operational plan required by 15A NCAC 13B .0565(4).



APR 19 1995

SOLID WASTE MANAGEMENT  
FAYETTEVILLE REGIONAL OFFICE

08525

1600

PERMIT NUMBER: 32-I

PERMIT ISSUED: March 22, 1995

BOOK 2071 PAGE 4

FACILITY NAME: Currin Bros. Inc. LCID landfill #2  
North of S.R. 1902 and West of S.R. 1900

8. The following requirements shall be met prior to receiving solid waste, within the horizontal expansion area, at the site:
  - a. A site inspection and pre-operative meeting shall be conducted by a representative of the Solid Waste Section.
  - b. A sign shall be posted at the entrance as required by the NC Solid Waste Management Rules Operational Requirements, 15A NCAC 13B .0566 (16).
9. Ground water quality at this facility is subject to the classification and remedial action provisions of 15 NCAC 2L.
10. An approved sedimentation and erosion control plan shall be obtained prior to the beginning of earth disturbing activities and all such activities shall be conducted in accordance with the Sedimentation Pollution Control Act of 1973 (15 NCAC 4).
11. A approved Sedimentation and Erosion control plan shall be obtained and implemented prior to the beginning of earth disturbing activities and all such activities shall be conducted in accordance with the Sedimentation Pollution Control Act of 1973 (15 NCAC 4) along with any federal or local requirements.

RECEIVED

APR 19 1995

SOLID WASTE MANAGEMENT  
FAYETTEVILLE REGIONAL OFFICE

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APR 19 1995

BOOK 2071 PAGE

5

SOLID WASTE MANAGEMENT  
FAYETTEVILLE REGIONAL OFFICE

CERTIFIED COPY OF SOLID WASTE PERMIT

I do hereby certify that the attached permit is an exact and true copy of Permit Number 32-I.

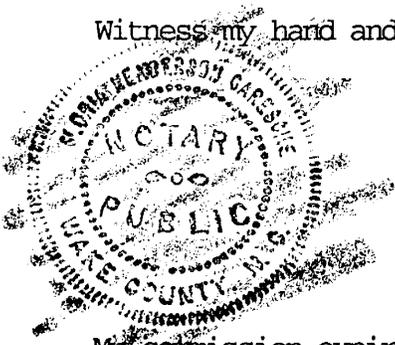
*James C Coffey*  
James C. Coffey, Supervisor  
Permitting Branch  
Solid Waste Section

North Carolina

Wake County

I, Gloria Henderson Harsche, a Notary Public for said County and State, do hereby certify that James C. Coffey, Supervisor, Permitting Branch, personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

Witness my hand and seal, this the 28 day of March, 1995.



Gloria Henderson Harsche  
Notary Public

State of North Carolina-Durham County

The foregoing certificate(s) of Gloria Henderson Harsche

A Notary (Notaries) Public for the Designated Government units is (are) certified to be correct.

This the 31 day of March, 1995  
Ruth C. Garrett Sharon Harsche  
Register of Deeds By: Assistant, Deputy Register of Deeds

My commission expires 11-02, 1996.

BOOK 2071 PAGE 6

PERMIT # 32-I  
Permit Issued: March 22, 1995

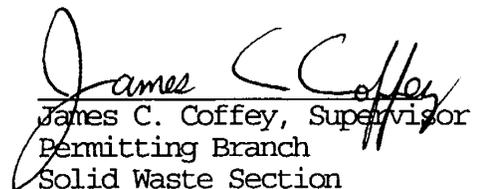
**SOLID WASTE PERMIT**

CURRIN BROS., INC.

is hereby issued a permit to Construct and Operate a

LAND CLEARING AND INERT DEBRIS LANDFILL

located approximately 2500' North of S.R. 1902 on S.R. 1900 (Coley Road), Durham County, North Carolina in accordance with Article 9, Chapter 130A of the General Statutes of North Carolina and all rules promulgated thereunder and subject to the conditions set forth in this permit. The facility is located and described by the legal description or the recorded map on the attached sheet.

  
James C. Coffey, Supervisor  
Permitting Branch  
Solid Waste Section

RECEIVED

APR 19 1995

SOLID WASTE MANAGEMENT  
RALEIGH REGIONAL OFFICE

BOOK 2071 PAGE 7  
BOOK 1969 PAGE 204

PART OF  
PERMIT # 32-J

DURHAM COUNTY

APR 11 1994

325.00



Real Estate  
Excise Tax

RECEIVED

FILED  
BOOK 1969 PAGE 204-206

JAN 6 1995

'94 APR 11 AM 11 16

RUTH C. GARRETT  
REGISTER OF DEEDS  
DURHAM COUNTY, N.C.

Excise Tax

Recording Time, Book and Page

Tax Lot No. Map 986, Block 1, Parcel 4 Parcel Identifier No.  
Verified by County on the day of 19  
by

Mail after recording to Pipkin & Knott, 100 E. Six Forks Road, Suite 308, Raleigh, N.C. 27609

This instrument was prepared by Pipkin & Knott

Brief description for the Index  
62.948 acres PB 131, p. 78

NORTH CAROLINA GENERAL WARRANTY DEED

THIS DEED made this 21st day of March, 1994, by and between

GRANTOR

SIM COLEY BRINKLEY, a/k/a S. COLEY BRINKLEY  
and SALLY F. BRINKLEY, his wife;  
HAZEL BRINKLEY STAPLES, a/k/a HAZEL B.  
STAPLES, and ALEX T. STAPLES, her husband;  
DOROTHY BRINKLEY LOFTIS and CARLTON S.  
LOFTIS, her husband; and  
JEWEL (a/k/a JEWELL) BRINKLEY THARRINGTON,  
and PERRY R. THARRINGTON, her husband.

GRANTEE

CURRIN BROS., INC.,  
a North Carolina corporation  
P.O. Box 547  
Fuquay-Varina, N.C. 27526

Enter in appropriate block for each party; name, address, and, if appropriate, character of entity, e.g. corporation or partnership.

The designation Grantor and Grantee as used herein shall include said parties, their heirs, successors, and assigns, and shall include singular, plural, masculine, feminine or neuter as required by context.

WITNESSETH, that the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, all that certain lot or parcel of land situated in the City of Carr Township, Durham County, North Carolina and more particularly described as follows:

Being all of the property described in and conveyed by the deed dated August 27, 1936 from R.O. Everett and G.C. Scott, Commissioners, to H.C. Brinkley that now lies west of the western edge of the right of way of S.R. 1900 (Coley Road); this deed is recorded in Deed Book 119, Page 319, Durham County Registry. This parcel containing 62.948 acres more or less is more particularly described in a plat captioned "Survey for Currin Bros., Inc., Carr Township, Durham Co., N.C." dated January 15, 1994, by Mauldin-Watkins Surveying, P.A., recorded in Plat Book 131, Page 78, Durham County Registry. Conveyed with the above parcel subject to the right-of-way of S.R. 1900 (Coley Road) is all of the Grantors' interest in the western half of the right-of-way of S.R. 1900 (Coley Road), including but not limited to any right to any portion of this right-of-way that is subsequently abandoned or released.

13377

RECEIVED

APR 19 1995

129

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*LITTLE & LITTLE*

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14 April 1995

Mr. Jim Barber  
Eastern Area Engineer  
Solid Waste Section  
NC Department of Environment,  
Health, and Natural Resources  
225 Green Street, Suite 601  
Fayetteville, North Carolina 28301

SUBJECT: Land Clearing and Inert Debris (LCID) Landfill  
Durham County, North Carolina  
Permit No. 32 - I

Dear Jim:

Enclosed please find a copy of the Solid Waste Permit and Conditions of the Solid Waste Permit for the above referenced landfill. This copy verifies that the Permit has been filed in the Register of Deeds office and shows the page and book number, date of recordation, and Register's seal.

I am forwarding the original permit to the owner, Allen Currin of Currin Bros., Inc.

Sincerely,



Robert G. Harrison IV, ASLA  
LITTLE & LITTLE

Enclosure

pc: Allen Currin

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management



James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

March 22, 1995

Mr. Allen Currin  
1610 Wolfpack Lane  
Raleigh, North Carolina 27609

Subject: Land Clearing and Inert Debris (LCID) Landfill  
Located approximately 2500' North of S.R. 1902 and on the  
West side of S.R. 1900 (Coley Rd. Tax Map 986, Block 1,  
Lot 4)  
**Permit No. 32-I**  
Durham County, Durham, N.C.

Dear Mr. Currin:

Enclosed please find a Solid Waste Permit and Conditions of the  
Solid Waste Permit for the above referenced landfill.

Please note Condition No. 3. This permit shall not be effective  
unless the certified copy is filed in the Register of Deeds office  
and the copy is returned to the Solid Waste Section, within thirty  
(30) working days, from date received, with the page and book  
number, date of recordation, and Register's seal.

Also note Condition No. 8, which requires that we hold a pre-  
operative meeting. Please contact me when you are ready to schedule  
such a meeting. If you have questions about your permit, please  
contact me at (910) 486-1191.

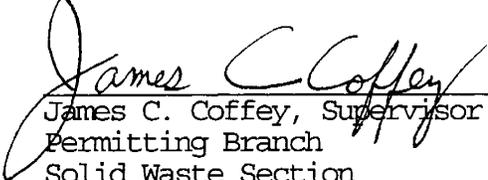
Sincerely,

Jim Barber  
Eastern Area Engineer  
Solid Waste Section

cc: Jim Coffey  
Terry Dover  
Robert Hearn  
✓ Raleigh Central file: 32-I

CERTIFIED COPY OF SOLID WASTE PERMIT

I do hereby certify that the attached permit is an exact and true copy of Permit Number 32-I.

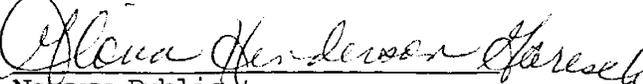
  
James C. Coffey, Supervisor  
Permitting Branch  
Solid Waste Section

North Carolina

Wake County

I, Alona Henderson Harselt, a Notary Public for said County and State, do hereby certify that James C. Coffey, Supervisor, Permitting Branch, personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

Witness my hand and seal, this the 28 day of March, 1995.

  
Notary Public

My commission expires 11-02, 1996.

PERMIT # 32-I  
Permit Issued: March 22, 1995

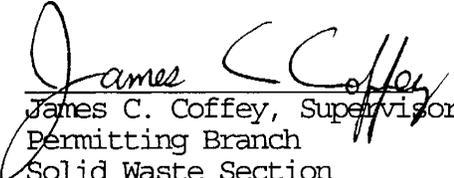
**SOLID WASTE PERMIT**

CURRIN BROS., INC.

is hereby issued a permit to Construct and Operate a

**LAND CLEARING AND INERT DEBRIS LANDFILL**

located approximately 2500' North of S.R. 1902 on S.R. 1900 (Coley Road), Durham County, North Carolina in accordance with Article 9, Chapter 130A of the General Statutes of North Carolina and all rules promulgated thereunder and subject to the conditions set forth in this permit. The facility is located and described by the legal description or the recorded map on the attached sheet.

  
James C. Coffey, Supervisor  
Permitting Branch  
Solid Waste Section

PERMIT NUMBER: 32-I  
PERMIT ISSUED: March 22, 1995  
Facility Name: Currin Bros. Inc. LCID landfill #2  
North of S.R. 1902 and West of S.R. 1900

CONDITIONS OF PERMIT

1. This permit is issued for a period not to exceed five years from date of issuance. This permit is for the construction of the landfill according to the approved plans. This permit approves the operation (disposal of LCID material) in Areas 1 and 3, in accordance with the approved plans, sheet 2 of 7. Any revisions of these approved plans must be approved by the North Carolina Solid Waste Section.
2. Amendments or revisions to the NC Solid Waste Management Rules or any violation of groundwater standards may necessitate modification of the approved plans or closure of the facility.
3. This permit shall not be effective unless the certified copy is filed in the Register of Deeds office and indexed in the grantor index under the name of the owner of the land in the county or counties in which the land is located. The certified copy of the permit, affixed with the Register's seal and the date, book, and page number of recording shall be returned to the Division of Solid Waste Management, within thirty (30) working days, from date received.
4. When this property is sold, leased, conveyed, or transferred, the deed or other instrument of transfer shall contain in the deed description section in no smaller type than that used in the body of the deed or instrument a statement that the property has been used as a land clearing and inert debris landfill.
5. This facility is permitted to receive land clearing waste, yard trash, untreated and unpainted wood, and inert debris such as rock, brick, concrete, concrete block, and uncontaminated soil. Waste acceptance requirements may be affected by future revisions and amendments to the NC General Statutes, or to the NC Solid Waste Management Rules.
6. Waste shall be placed a minimum of four (4) feet above the seasonal high water table.
7. This facility shall conform to the operational requirements of the NC Solid Waste Management Rules, 15A NCAC 13B .0566, and to the operational plan required by 15A NCAC 13B .0565(4).

PERMIT NUMBER: 32-I

PERMIT ISSUED: March 22, 1995

FACILITY NAME: Currin Bros. Inc. LCD landfill #2  
North of S.R. 1902 and West of S.R. 1900

8. The following requirements shall be met **prior** to receiving solid waste, within the horizontal expansion area, at the site:
  - a. A site inspection and pre-operative meeting shall be conducted by a representative of the Solid Waste Section.
  - b. A sign shall be posted at the entrance as required by the NC Solid Waste Management Rules Operational Requirements, 15A NCAC 13B .0566 (16).
9. Ground water quality at this facility is subject to the classification and remedial action provisions of 15 NCAC 2L.
10. An approved sedimentation and erosion control plan shall be obtained prior to the beginning of earth disturbing activities and all such activities shall be conducted in accordance with the Sedimentation Pollution Control Act of 1973 (15 NCAC 4).
11. A approved Sedimentation and Erosion control plan shall be obtained and implemented prior to the beginning of earth disturbing activities and all such activities shall be conducted in accordance with the Sedimentation Pollution Control Act of 1973 (15 NCAC 4) along with any federal or local requirements.

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Environmental Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
A. Preston Howard, Jr., P.E., Director

PART OF  
PERMIT # 32-I

January 13, 1995

Glenn Currin  
Currin Bros Inc  
1610 Wolfpack Lane  
Raleigh, NC 27609

Subject: General Permit No. NCG010000  
Currin Bros Inc  
COC NCG011462  
Durham County

Dear Glenn Currin:

In accordance with your application for discharge permit received on December 8, 1994, we are forwarding herewith the subject certificate of coverage to discharge under the subject state - NPDES general permit. This permit is issued pursuant to the requirements of North Carolina General Statute 143-215 .1 and the Memorandum of Agreement between North Carolina and the US Environmental Protection agency dated December 6, 1983.

If any parts, measurement frequencies or sampling requirements contained in this permit are unacceptable to you, you have the right to request an individual permit by submitting an individual permit application. Unless such demand is made, this certificate of coverage shall be final and binding.

Please take notice that this certificate of coverage is not transferable except after notice to the Division of Environmental Management. The Division of Environmental Management may require modification or revocation and reissuance of the certificate of coverage.

This permit does not affect the legal requirements to obtain other permits which may be required by the Division of Environmental Management or permits required by the Division of Land Resources, Coastal Area Management Act or any other Federal or Local governmental permit that may be required.

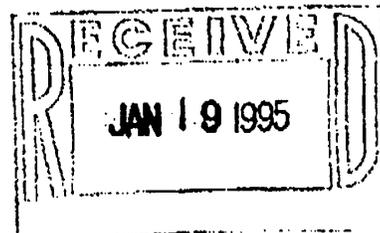
If you have any question concerning this permit, please contact MS. LIZ KOVASCKITZ at telephone number 919/733-5083.

Sincerely,

  
A. Preston Howard, Jr. P.E.

cc: Raleigh Regional Office

RECEIVED



STATE OF NORTH CAROLINA  
DEPARTMENT OF ENVIRONMENT, HEALTH, AND NATURAL RESOURCES  
DIVISION OF ENVIRONMENTAL MANAGEMENT

GENERAL PERMIT NO. NCG010000  
CERTIFICATE OF COVERAGE NO. NCG011462

STORMWATER DISCHARGES

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provision of North Carolina General Statute 143-215.1, other lawful standards and regulations promulgated and adopted by the North Carolina Environmental Management Commission, and the Federal Water Pollution Control Act, as amended,

Curran Bros., Inc.

is hereby authorized to discharge stormwater from land disturbing activities located at

Durham County Land Clearing and Inert Debris Landfill  
Coley Road  
Durham  
Durham County

to receiving waters designated as unnamed tributaries to Rocky Branch in the Neuse River Basin in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III and IV of General Permit No. NCG010000 as attached.

This Certificate of Coverage shall become effective January 13, 1995.

This Certificate of Coverage shall remain in effect for the duration of the General Permit.

Signed this day January 13, 1995.



A. Preston Howard, Jr., P.E., Director  
Division of Environmental Management  
By Authority of the Environmental Management Commission

STATE OF NORTH CAROLINA  
DEPARTMENT OF ENVIRONMENT, HEALTH, AND NATURAL RESOURCES  
DIVISION OF ENVIRONMENTAL MANAGEMENT

GENERAL PERMIT

TO DISCHARGE STORMWATER UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provision of North Carolina General Statute 143-215.1, other lawful standards and regulations promulgated and adopted by North Carolina Environmental Management Commission and the Federal Water Pollution Control Act as amended,

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All owners or operators of stormwater point source discharges associated with construction activities including clearing, grading and excavation activities resulting in the disturbance of five or more acres of total land area are hereby authorized to discharge stormwater to the surface waters of North Carolina or to a separate storm sewer system conveying stormwater to the surface waters. Facilities disturbing less than five acres may be covered by this permit on a case-by-case basis if the discharges are a source of significant pollutants.

The General Permit shall become effective on September 1, 1992.

The General Permit shall expire at midnight on August 31, 1997.

Signed this day July 31, 1992.



\_\_\_\_\_  
A. Preston Howard, Jr., P.E., Acting Director  
Division of Environmental Management  
By the Authority of the Environmental Management Commission



*LITTLE & LITTLE*

16 December 1994

Mr. Jim Barber  
Eastern Area Engineer  
Solid Waste Section  
NC Dept. of Environment, Health,  
and Natural Resources  
225 Green Street, Suite 601  
Fayetteville, NC 28301

RECEIVED

JAN 6 1995

SOLID WASTE MANAGEMENT  
FAYETTEVILLE REGIONAL OFFICE

SUBJECT: Currin Brothers, Inc. Land Clearing & Inert Debris Landfill #2  
Permit Application

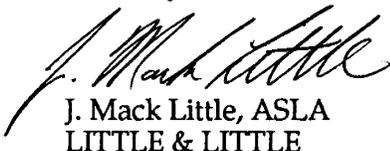
Dear Mr. Barber:

Enclosed are revised plans and Operations and Project Manual for the above referenced project. Your comments are addressed as follows:

1. Enclosed are National Flood Insurance Program, Floodway, Flood Boundary and Floodway Maps for Durham County, panels 45 and 60. The site is marked on the maps.
2. An additional letter addressing endangered plants is included in the Operations and Project Manual.
3. The NPDES permit has been applied for. When recieved, a copy of the approval notification will be forwarded to your office.
4. Addressed on revised plans.
5. Durham County sedimentation and erosion control permit letter is included in Operations and Project Manual.
6. Additional cross sections are included on revised plans.
7. Addressed on revised plans.
8. Enclosed is a copy of the deed for this property.
9. Engineers seals are included on revised plans.
10. Enclosed is an Operations and Project Manual.

Please call if you have any questions or need additional information.

Sincerely,



J. Mack Little, ASLA  
LITTLE & LITTLE

Enclosures (plans under seperate cover)

60ES 100 32-J

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management



James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

September 20, 1994

C.) LANDSCAPE ARCHITECTS.  
GRADING, STORM DRAINAGE

# 86C.  
K 89C

Mr. Mack Little  
Little & Little  
P.O. Box 1448  
Raleigh, North Carolina 27602

Ref: Currin Brothers, Inc. Land Clearing & Inert Debris Landfill #2  
Permit Application

Mr. Little:

The Solid Waste Section has conducted a preliminary review of the Land Clearing & Inert Debris (LCID) Landfill Permit Application, submitted by you on behalf of Currin Brothers, Incorporated. In accordance with the North Carolina Solid Waste Management Rules, the following items and comments, as discussed in phone conversations on 9/19/94, must be addressed to continue the review process. Please address the following:

10 RESPONSE  
PACKAGE REC'D  
1/6/95

1. The 100-year floodplain location on the site plan, indicates that the proposed LCID landfill is not in the 100 year floodplain. Please provide a copy of the referenced FEMA or FIRM map that corresponds to this site and/or area of Durham County.

10 REVISED  
O & P MANUAL  
1/6/95

2. Please provide a follow up letter, or additional information, to address the comments made by the Division of Parks & Recreation concerning the possibility of endangered plants on the proposed site and the need for a field survey to be conducted.

TO BE ISSUED BY  
O LATER DATE  
BY DEM.  
CAN MACK LITTLE

3. .0564 (8) (a,b,c) Please address and included with this review letter is a copy of a memo from DEM on "GENERAL NPDES PERMITS FOR STORMWATER". Please indicate whether or not the appropriate stormwater permits have been acquired.

OJ  
PLANS

4. .0565 (2) (b) Is this area of the county on a public water system or are all homes shown on the site plan on private well(s).

10 REVISED  
O & P MANUAL  
1/6/95

5. .0565 (3) (m) Please submit a copy of the Approved Mining Permit and/or the Approved Sedimentation and Erosion Control Permit from Durham County.

Mr. Little  
page 2  
September 20, 1994

.0565 (3) (o) Please provide additional cross sections for the operational areas that will correspond to the cell(s) that will be utilized for five years of disposal capacity.

*OR REVISED PLANS REC'D 1/6/95*  
*OR REVISED PLANS REC'D 1/6/95*

Please provide documentation on the separation to ground water and/or uppermost aquifer/bedrock in the proposed disposal areas in accordance with .0564(8)(d), .0565(1)(c) and .0565(3)(n).

Please provide a copy of the deed for this property in accordance with .0565(1)(e).

*REC'D AS PART OF RESPONSE PACKAGE 1/6/95*

In accordance with .0565 "APPLICATION REQUIREMENTS FOR LAND CLEARING AND INERT DEBRIS (LCID) LANDFILLS"; when submitting plans for a Land Clearing and Inert Debris landfill, the seal of a professional engineer is required.

*QUESTIONS NOT ADEQUATE*  
*9 DU PLANS REC'D 1/6/95*

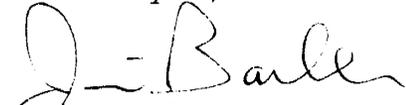
Please provide an "operational plan" in accordance with .0565(4)(a,b,c,d,e).

*REVISED O&P MANUAL 1/6/95*

The comments and items requested are intended to expedite the review of the application. The Solid Waste Section reserves the right to request any additional information during and following the technical review process.

If you have any questions or require any assistance, please do not hesitate to contact me at (910) 486-1191 or (919) 733-0692.

Thank you,



Jim Barber  
Eastern Area Engineer  
Solid Waste Section

copy: Jim Coffey-Permitting Branch Head  
Terry Dover-Eastern Area Supervisor  
Robert Hearn-Environmental Technician

*u*

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*LITTLE & LITTLE*

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2 September 1994

Mr. Jim Barber  
North Carolina Department of Environment,  
Health, and Natural Resources  
225 Green Street, Suite 601  
Fayetteville, NC 28301

SUBJECT: Durham County L.C.I.D. Landfill

Dear Jim:

Please find enclosed five copies of Supplemental Stormwater Calculations which were not included in the package we mailed to you on 30 September 1994.

Please call me or Mack Little if you have any questions or need additional information.

Sincerely,



Robert G. Harrison, IV , ALSA  
LITTLE & LITTLE

Enclosures

*LITTLE & LITTLE*

30 August 1994

Mr. Jim Barber  
North Carolina Department of Environment,  
Health, and Natural Resources  
225 Green Street, Suite 601  
Fayetteville, NC 28301

RECEIVED  
SEP 2 1994  
SOLID WASTE MANAGEMENT  
FAYETTEVILLE REGIONAL OFFICE

SUBJECT: Durham County L.C.I.D. Landfill

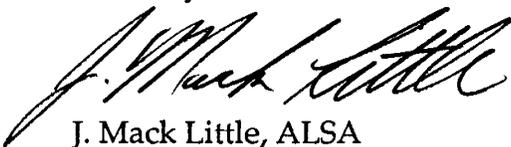
Dear Jim:

Enclosed is our submittal application for your review. I have enclosed five copies each of the following:

1. Approval letter from Durham County stating that the site meets all of the requirements of the local zoning ordinance.
2. County Road Map with location marked.
3. Information showing minimum depth of waste from high water table is indicated on the plans.
4. Information indicating that the facility complies with all the requirements set forth under Rule .0564 is indicated on the plans.
3. Survey of the property.
4. Submittal plans and detail package.

Please call if you have any questions or need additional information.

Sincerely,



J. Mack Little, ALSA  
LITTLE & LITTLE

Enclosures

pc: Allen and Glen Currin, Currin Bros., Inc.



PART OF  
PERMIT # 32-J

BOOK 1969 PAGE 204

DURHAM COUNTY

APR 11 1994

325.00



Real Estate  
Excise Tax

Excise Tax

RECEIVED

FILED  
BOOK 1969 PAGE 204-206

'94 APR 11 AM 11 16

RUTH C. GARRETT  
REGISTER OF DEEDS  
DURHAM COUNTY, N.C.

SOLID WASTE MANAGEMENT  
WAYNEVILLE REGIONAL OFFICE

Recording Time, Book and Page

Tax Lot No. Map 986, Block 1, Parcel 4 Parcel Identifier No.

Verified by County on the day of 19

by

Mail after recording to Pipkin & Knott, 100 E. Six Forks Road, Suite 308, Raleigh, N.C. 27609

This instrument was prepared by Pipkin & Knott

Brief description for the Index  
 62.948 acres PB 131, p. 78

### NORTH CAROLINA GENERAL WARRANTY DEED

THIS DEED made this 21st day of March, 1994, by and between

**GRANTOR**

SIM COLEY BRINKLEY, a/k/a S. COLEY BRINKLEY  
and SALLY F. BRINKLEY, his wife;  
HAZEL BRINKLEY STAPLES, a/k/a HAZEL B.  
STAPLES, and ALEX T. STAPLES, her husband;  
DOROTHY BRINKLEY LOFTIS and CARLTON S.  
LOFTIS, her husband; and  
JEWEL (a/k/a JEWELL) BRINKLEY THARRINGTON,  
and PERRY R. THARRINGTON, her husband.

**GRANTEE**

CURRIN BROS., INC.,  
a North Carolina corporation  
P.O. Box 547  
Fuquay-Varina, N.C. 27526

Enter in appropriate block for each party; name, address, and, if appropriate, character of entity, e.g. corporation or partnership.

The designation Grantor and Grantee as used herein shall include said parties, their heirs, successors, and assigns, and shall include singular, plural, masculine, feminine or neuter as required by context.

WITNESSETH, that the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, all that certain lot or parcel of land situated in the City of Carr Township, Durham County, North Carolina and more particularly described as follows:

Being all of the property described in and conveyed by the deed dated August 27, 1936 from R.O. Everett and G.C. Scott, Commissioners, to H.C. Brinkley that now lies west of the western edge of the right of way of S.R. 1900 (Coley Road); this deed is recorded in Deed Book 119, Page 319, Durham County Registry. This parcel containing 62.948 acres more or less is more particularly described in a plat captioned "Survey for Currin Bros., Inc., Carr Township, Durham Co., N.C." dated January 15, 1994, by Mauldin-Watkins Surveying, P.A., recorded in Plat Book 131, Page 78, Durham County Registry. Conveyed with the above parcel subject to the right-of-way of S.R. 1900 (Coley Road) is all of the Grantors' interest in the western half of the right-of-way of S.R. 1900 (Coley Road), including but not limited to any right to any portion of this right-of-way that is subsequently abandoned or released.

13377

120

The property hereinabove described was acquired by Grantor by instrument recorded in ..... See Estate of .....  
Hubert Charles Brinkley, died 10/7/55, and of Lottie Coley Brinkley 90-E-944.

A map showing the above described property is recorded in Plat Book ✓ 131 ..... page ✓ 78.....

TO HAVE AND TO HOLD the aforesaid lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

And the Grantor covenants with the Grantee, that Grantor is seized of the premises in fee simple, has the right to convey the same in fee simple, that title is marketable and free and clear of all encumbrances, and that Grantor will warrant and defend the title against the lawful claims of all persons whomsoever except for the exceptions hereinafter stated.

Title to the property hereinabove described is subject to the following exceptions:

1. The lien for 1994 property taxes.
2. Transmission Line Easement dated January 16, 1978, from Lottie Coley Brinkley, et als to Carolina Power & Light Company, recorded in Book 963, Page 567, Durham County Registry.
3. General Service Easement for electrification or telephone purposes dated 10/25/51 from H.C. Brinkley and Lottie C. Brinkley to Wake Electric Membership Corp. recorded in Book 208, Page 121, Durham County Registry.
4. General Service Easement dated 4/2/58 from Lottie C. Brinkley, widow, to Wake Electric Membership Corporation, recorded in Book 256, Page 431, Durham County Registry.

IN WITNESS WHEREOF, the Grantor has hereunto set his hand and seal, or if corporate, has caused this instrument to be signed in its corporate name by its duly authorized officers and its seal to be hereunto affixed by authority of its Board of Directors, the day and year first above written.

Sim Coley Brinkley (SEAL)  
SIM COLEY BRINKLEY

Sally F. Brinkley (SEAL)  
SALLY F. BRINKLEY

Hazel Brinkley Staples (SEAL)  
HAZEL BRINKLEY STAPLES

Alex T. Staples (SEAL)  
ALEX T. STAPLES

Dorothy Brinkley Loftis (SEAL)  
DOROTHY BRINKLEY LOFTIS

Carlton S. Loftis (SEAL)  
CARLTON S. LOFTIS

Jewel Brinkley Tharrington (SEAL)  
JEWEL BRINKLEY THARRINGTON

Perry R. Tharrington (SEAL)  
PERRY R. THARRINGTON

The foregoing Certificate(s) of .....

is/are certified to be correct. This instrument and this certificate are duly registered at the date and time and in the Book and Page shown on the first page hereof.

..... REGISTER OF DEEDS FOR ..... COUNTY  
By ..... Deputy/Assistant - Register of Deeds

NORTH CAROLINA, Orange County.

I, a Notary Public of the County and State aforesaid, certify that SIM COLEY BRINKLEY and SALLY F. BRINKLEY, his wife, Grantor, personally appeared before me this day and acknowledged the execution of the foregoing instrument. Witness my hand and official stamp or seal, this 21 day of March, 1994. My commission expires: 10-29-96 Emily E. Edwards Notary Public



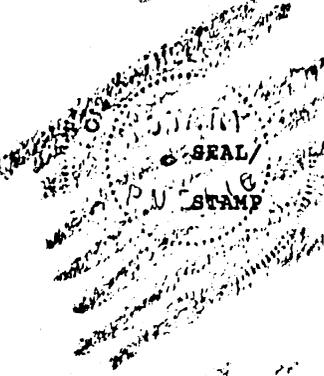
NORTH CAROLINA, Durham County.

I, a Notary Public of the County and State aforesaid, certify that HAZEL BRINKLEY STAPLES and ALEX T. STAPLES, her husband, Grantor, personally appeared before me this day and acknowledged the execution of the foregoing instrument. Witness my hand and official stamp or seal, this 21st day of March, 1994. My commission expires: 10-31-95 Delia G. Conly Notary Public



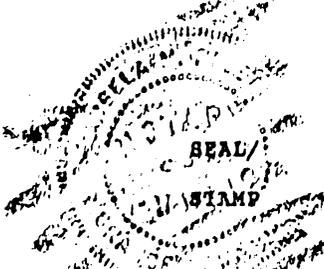
NORTH CAROLINA, Orange County.

I, a Notary Public of the County and State aforesaid, certify that DOROTHY BRINKLEY LOFTIS and CARLTON S. LOFTIS, her husband, Grantor, personally appeared before me this day and acknowledged the execution of the foregoing instrument. Witness my hand and official stamp or seal, this the 22 day of March, 1994. My commission expires: 5-5-98 Sharon Kathleen Case Notary Public



NORTH CAROLINA, Orange County.

I, a Notary Public of the County and State aforesaid, certify that JEWEL BRINKLEY THARRINGTON and PERRY R. THARRINGTON, her husband, Grantor, personally appeared before me this day and acknowledged the execution of the foregoing instrument. Witness my hand and official stamp or seal, this the 23 day of



State of North Carolina - Durham County  
The foregoing certificate(s) of Sharon E. Edwards 1994.

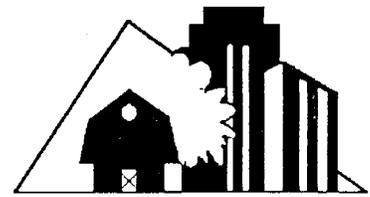
Angela M. Riley commission expires: 5/5/98 Angela M. Riley Notary Public

A Notary Public for the Designated Governments  
whom is (are) certified to be correct.

This was 11 94  
Ruth C. Barrett By: Sharon A. Barrett  
Register of Deeds Assistant, Deputy  
Register of Deeds



# Durham County Planning Department



101 City Hall Plaza  
Durham, NC 27701  
(919) 560-4137  
Fax 560-4641

March 16, 1994

Mr. Steve Deaton  
6508 Falls of Neuse Road, Suite 100  
Raleigh, NC 27615

Dear Mr. Deaton:

Based upon a letter dated February 28, 1994 from Jim Barber, Eastern Area Engineer of the Division of Solid Waste Management, Department of Environmental Health and Natural Resources, I have reviewed, via a request by Allen Currin, Currin Brothers, Inc., to determine the legality of a potential site for a Land Clearing and Inert Debris (LCID) permit for property located on Coley Road and further described on Tax Map 986, Block 1, Lot 4. This location has been submitted for consideration as a permitted use under the regulations of the Rural District zoning classification in the Durham County Zoning Ordinance prior to January 1, 1994.

Prior to January 1, 1994, a Land Clearing and Inert Debris (LCID) landfill was a permitted use in Rural District under the Durham County Zoning Ordinance. Therefore, since this location on Coley Road was under active consideration before January 1, 1994 for purchase, design, and permitting the Planning Department supports the final permit application conditioned upon State approval for conformance with North Carolina Solid Waste Management Rules (15A NCAC 13); Section .0500 - Disposal Sites, Paragraphs .0563 (Applicability Requirements for Land Clearing/Inert Debris Landfills); .0564 (Siting criteria for Land Clearing/Inert Debris Landfills); .0565 (Application Requirements for Land Clearing/Inert Debris Landfills) and .0566 (Operational Requirements for Land Clearing/Inert Debris Landfills).

ON 3/25/94 @ 12:22PM, SPOKE W/GERALD KELLEY AND  
HE STATED THIS LETTER ~~CONSTITUTES~~ CONSTITUTES "ZONING  
APPROVAL" FOR THE CURRIN BROS. LCID L.F.

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management



James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

February 28, 1994

Allen Currin  
Currin Bros. Inc.  
Post Office Box 547  
Fuquay-Varina, North Carolina 27526

Ref: Proposed Land Clearing & Inert Debris (LCID) landfill  
North of LCID landfill Permit # 32-D

To Whom it may concern:

The Solid Waste Section received on September 7, 1993 a topo map from Mr. Allen Currin showing the above referenced facility location. At this time Mr. Currin requested any comments, positive or negative, as to the potential for permitting of a LCID landfill on the indicated site. I told Mr. Currin in a meeting, at the Raleigh Central Office, that it appeared that the site would be satisfactory for a LCID landfill. At that time, Mr. Currin stated that he would initiate the process to purchase said tract of land and start the design and permitting process for a LCID permit. Numerous conversations have followed since this initial meeting, concerning permitting questions and design requirements. The Section is currently awaiting the final permit application, to finalize a permit for this site. Should additional information be required, Currin Bros. Incorporated's consultant will be contacted by this Section for additional information.

If you have any questions or require any assistance, please do not hesitate to contact me.

Thank you,

Jim Barber  
Eastern Area Engineer

Fayetteville Regional Office

228 Green Street, Suite 401, Fayetteville, North Carolina 28301 Telephone 910-486-1191 FAX 910-486-1791

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LCID LANDFILL CHECKLIST

File Name CURNJU LCID L.F. (SITE #2)

**.0564 SITING CRITERIA FOR LAND CLEARING AND INERT DEBRIS (LCID) LANDFILLS**

The following siting criteria shall apply for Land Clearing and Inert Debris (LCID) landfills:

- (1) Facilities or practices, shall not be located in the 100-year floodplain.
- (2) Facilities or practices shall not cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife.
- (3) Facilities or practices shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species as identified in 50 CFR Part 17 which is hereby incorporated by reference including any subsequent amendments and editions. This material is available for inspection at the Department of Environment, Health, and Natural Resources, Division of Solid Waste Management, 401 Oberlin Road, Raleigh, North Carolina 27605 where copies can be obtained at no cost.
- (4) Facilities or practices shall not damage or destroy an archaeological or historical site.
- (5) Facilities or practices shall not cause an adverse impact on a state park, recreation or scenic area, or any other lands included in the state nature and historic preserve.
- (6) Facilities shall not be located in any wetland as defined in the Clean Water Act, Section 404(b).
- (7) It must be shown that adequate suitable soils are available for cover, either from on or off site.
- (8) Land Clearing and Inert Debris landfills shall meet the following surface and ground water requirements:
  - (a) Facilities or practices shall not cause a discharge of pollutants into waters of the state that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES), under Section 402 of the Clean Water Act, as amended.
  - (b) Facilities or practices shall not cause a discharge of dredged materials or fill material into waters of the state that is in violation of the requirements under Section 404 of the Clean Water Act, as amended.
  - (c) Facilities or practices shall not cause non-point source pollution of waters of the state that violates assigned water quality standards.

~~PROVIDE FEMA  
FIRM MAP.~~ ?  
~~ACCOMPLISH  
UTPL. 19.7.~~ ?

~~7/8~~

\* SPECIFIC ON-SITE?  (d)  
 LOCATIONS [ALSO  
 4' SEPARATION TO BEDROCK!  
 H.A.  (e)

Waste in landfills with a disposal area greater than two acres shall be placed a minimum of four feet above the seasonal high water table, except where an alternative separation is approved by the Division.  
 Waste in landfills with a disposal area less than two acres shall be placed above the seasonal high water table.

- (9) The facility shall meet the following minimum buffer requirements:
  - (a) 50 feet from the waste boundary to all surface waters of the state as defined in G.S. 143-212.
  - (b) 100 feet from the disposal area to property lines, residential dwellings, commercial or public buildings, and wells.
  - (c) Buffer requirements may be adjusted as necessary to insure adequate protection of public health and the environment.
- (10) The facility shall meet all requirements of any applicable zoning ordinance.

**.0565 APPLICATION REQUIREMENTS FOR LAND CLEARING AND INERT DEBRIS (LCID) LANDFILLS**

Five sets of plans, maps, and reports shall be required with each application. The seal of a professional engineer is required when submitting plans for a Land Clearing and Inert Debris (LCID) landfill.

- (1) The following information is required in order to review and approve the siting of a Land Clearing and Inert Debris (LCID) landfill:
  - (a) An approval letter from the unit of local government having zoning authority over the area where the facility is to be located stating that the site meets all of the requirements of the local zoning ordinance, or that the site is not zoned.
  - (b) Location on a county road map.
  - (c) Information showing that the bottom elevation of the waste shall be four feet above the seasonal high water table. Seasonal high water table elevations shall be obtained from on site test borings, test pits, or from other geological or water table investigations, studies, or reports from the immediate area of the proposed facility.
  - ?  (d) A written report indicating that the facility shall comply with all the requirements set forth under Rule .0564.
  - ?  (e) A copy of the deed or other legal description of the site that would be sufficient as a description in an instrument of conveyance, showing property owner's name.
  - (f) Any other information pertinent to the suitability of the proposed facility.
- (2) The following shall be provided on a map or aerial photograph with a scale of at least one inch equals four hundred feet showing the area within one-fourth mile of the site:

- (a) Entire property or portion thereof owned or leased by the person providing the disposal site.
- (b) Location of all homes, buildings, public or private utilities, roads, wells, watercourses, water or other impoundments, and any other applicable features or details.
- (c) 100-year flood plain boundaries, if any.
- (d) Wetland boundaries, if any.
- (e) Historical or archaeological sites, if any.
- (f) Park, scenic, or recreation area boundaries, if any.
- (3) Development and design plans and details, at a scale of at least one inch equals one hundred feet with one inch equals forty feet preferred, and specifications containing the following information shall be submitted with the application for a proposed Land Clearing and Inert Debris (LCID) landfill:
  - (a) Property or site boundary, fully dimensioned with bearings and distances, tied to North Carolina grid coordinates where reasonably feasible.
  - (b) Easements and right-of-ways.
  - (c) Existing pertinent on site and adjacent structures such as houses, buildings, wells, roads and bridges, water and sewer utilities, septic fields, and storm drainage features.
  - (d) Proposed and existing roads, points of ingress and egress along with access control such as gates, fences, or berms.
  - (e) Buffer and set back lines along with the buffered boundary or feature.
  - (f) Springs, streams, creeks, rivers, ponds, and other waters and impoundments.
  - (g) Wetlands, if any.
  - (h) Boundary of the proposed waste area.
  - (i) Existing topography with contours at a minimum of five foot intervals. Where necessary, a smaller interval shall be utilized to clarify existing topographic conditions.
  - (j) Proposed excavation, grading, and final contours at a minimum of five foot intervals. Where necessary, a smaller interval shall be utilized to clarify proposed grading. Excavation, grading, and fill material side slopes shall not exceed three to one (3:1).
  - (k) Where on site borrow for operational and final cover is proposed, indicate the borrow excavation and grading plan with contours at a minimum of five foot intervals. Where necessary, a smaller interval shall be utilized to clarify proposed grading.
  - (l) Proposed surface water control features and devices such as slope drains, storm water pipes, inlets, culverts, and channels.

- (m) Information showing that the project meets the requirements of 15A NCAC 4, Sedimentation Control Rules.
- (n) Location of test borings or test pits, if used to determine the seasonal high water table elevation, shall be shown on the plans.
- (o) A minimum of two cross-sections, one each along each major axis, per operational area showing:
  - (i) Original elevations.
  - (ii) Proposed excavation.
  - (iii) Proposed final elevations.
- (4) An operational plan addressing the requirements under Rule .0566 and containing the following information shall be submitted with the application for a proposed Land Clearing and Inert Debris (LCID) landfill:
  - ?  (a) Name, address, and phone number of individual responsible for operation and maintenance of the facility.
  - ?  (b) Projected use of the land after completion.
  - (c) Description of systematic usage of disposal area, operation, orderly development and closure of the landfill.
  - ?  (d) Type, source, and quantity of waste to be accepted.
  - ?  (e) An emergency contingency plan, including fire fighting procedures.

**.0566 OPERATIONAL REQUIREMENTS FOR LAND CLEARING AND INERT DEBRIS (LCID) LANDFILLS**

Land Clearing and Inert Debris (LCID) landfills shall meet the following operational requirements:

- (1) Operational plans shall be approved and followed as specified for the facility.
- (2) The facility shall only accept those solid wastes which it is permitted to receive.
- (3) Solid waste shall be restricted to the smallest area feasible and compacted as densely as practical into cells.
- (4) Adequate soil cover shall be applied monthly, or when the active area reaches one acre in size, whichever occurs first.
- (5) 120 calendar days after completion of any phase of disposal operations, or upon revocation of a permit, the disposal area shall be covered with a minimum of one foot of suitable soil cover sloped to allow surface water runoff in a controlled manner. The Division may require further action in order to correct any condition which is or may become injurious to the public health, or a nuisance to the community.
- (6) Adequate erosion control measures, structures, or devices shall be utilized to prevent silt from leaving the site and to prevent excessive on site erosion.

- (7) Provisions for a ground cover sufficient to restrain erosion must be accomplished within 30 working days or 120 calendar days upon completion of any phase of landfill development.
- (8) The facility shall be adequately secured by means of gates, chains, berms, fences, etc. to prevent unauthorized access except when an operator is on duty. An attendant shall be on duty at all times while the landfill is open for public use to assure compliance with operational requirements and to prevent acceptance of unauthorized wastes.
- (9) Access roads shall be of all-weather construction and properly maintained.
- (10) Surface water shall be diverted from the working face and shall not be impounded over waste.
- (11) Solid waste shall not be disposed of in water.
- (12) Open burning of solid waste is prohibited.
- (13) The concentration of explosive gases generated by the facility shall not exceed:
  - (a) Twenty-five percent of the lower explosive limit for the gases in facility structures.
  - (b) The lower explosive limit for the gases at the property boundary.
- (14) Leachate shall be properly managed on site through the use of current best management practices.
- (15) Should the Division deem it necessary, ground water or surface water monitoring, or both, may be required as provided for under Rules .0601 and .0602 of this Subchapter.
- (16) A sign shall be posted at the facility entrance showing the contact name and number in case of an emergency and the permit number. The permit number requirement is not applicable for facilities not requiring an individual permit.



*OPERATIONS AND PROJECT MANUAL*

***LAND CLEARING AND  
INERT DEBRIS LANDFILL***

***DURHAM COUNTY, NORTH CAROLINA***

*CURRIN BROTHERS, INC.*

RECEIVED

JAN 6 1995

SOLID WASTE MANAGEMENT  
FAYETTEVILLE REGIONAL OFFICE

**APPROVED**

DIVISION OF SOLID WASTE MANAGEMENT

DATE 3/28/95 BY [Signature]

29 NOVEMBER 1994

RAL. CENTRAL FILE COPY  
32-I (DURHAM CITY)

LITTLE & LITTLE

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29 November 1994

**Currin Durham County LCID  
Landfill Operational Plan**

Individual(s) Responsible for Operation and Maintenance of the Facility

Glenn and Allen Currin  
c/o Currin Brothers, Inc.  
Post Office Box 547  
Fuquay-Varina, North Carolina 27526  
Phone: 919-876-1138

Projected Land Use After Completion

Tree Farm and/or Park

Usage, Operation, Development and Closure of the Facility

The facility will be operated as a private landfill. Hours of operation will generally be from sunrise to sunset on weekdays and Saturdays. Operations on Sunday will be limited to as needed and special cases. Generally the facility will be closed on Sundays and holidays.

Usage of the landfill will be limited to Currin Brothers, Inc. and their assigns.

Access to the facility will be controlled through one entrance gate. The entrance gate will be secured and no admittance allowed except during hours of operation. The responsible party or his employee will be on site at all times while the facility is open.

The landfill will not commence operations until sediment and erosion control measures are installed as approved by Durham County. (See the construction sequence for site included in the S&E plans and the project manual.)

Operation of the fill areas will be conducted in an orderly manner, always providing positive drainage to the two sediment basins. Excavation in any of the areas will not be made closer than four (4) feet to ground water tables or rock. Should ground water or rock be encountered, excavation will cease and a minimum of four (4) feet of soil material placed over the rock or ground water.

No surface water will be allowed to pond on top of fill areas or be diverted through the landfill. All interim and finished grades will be established to provide positive runoff and prevent surface ponding. All off site drainage will be diverted around the facility (see plans for details).

As interim and/or final grades are obtained, those areas will be seeded and stabilized according to the approved erosion control plan. Any areas where vegetation fails to establish itself will be reseeded and fertilized until adequate cover is obtained. As finished grades are obtained in the several fill areas and ground cover established, pine seedling will be planted to complement the permanent cover. Areas holding at interim elevations will be protected per the erosion control plan.

State and local permits required for the landfill operation will be renewed as required by law. After the last fill area is excavated and backfilled with landfill materials, the facility will be brought to final grades and closed out. Final soil cover will be placed over debris to required depths. All fill dirt will be provided from on site. Once the soil cover is in place, vegetative cover will be provided per approved plans and specifications. With vegetation established, the permanent erosion control measures will be removed and those areas stabilized.

The owners will monitor the fill areas for settlement for 12 months after close out, repair any unvegetated areas, and backfill areas where surface ponding may have developed.

#### Waste to be Accepted

- Type: Materials to be disposed of will be land clearing waste, inert debris, untreated wood, and yard trash.
- Source: The anticipated service area of the facility is northwest, north, and northeast Durham County; the City of Durham; west and northwest Wake County; and northwest Raleigh. Most of the material will be from land clearing operations for public roads, residential lots, commercial development and other general development.
- Projected Quantities: 30 to 150 loads per day depending on economy and weather.
- Expected life of the facility: 2050.

#### Fire Fighting Procedures

Should a fire occur at the facility, there will be soil stockpiled in several areas which can be used to smother the flames. Equipment kept on the site will be used to spread the soil and extinguish the flames.

Emergency information with contact names and telephone numbers will be posted at the entrance to the facility. Local emergency medical, fire, and law enforcement telephone numbers will also be posted.

No Trespassing signage will be placed at frequent intervals around the perimeter of the landfill. Unauthorized entry or dumping will be prosecuted. Material left at the site which is not authorized for disposal will be segregated and disposed of in a proper facility.

## CONSTRUCTION SEQUENCE

1. Obtain erosion control permit from Durham County.
2. Obtain driveway permit from NCDOT.
3. Install construction entrance and Culvert 1.
4. Install silt fence below the basins as shown on the plans.
5. Install Sediment Traps B and C and diversion ditches in Areas 3 and 9.
6. Clear and grub portions of Areas 3 & 9 and areas for Sediment Basins.
7. Install the two riser basins using soil from Areas 3 and 9 for the construction.
8. Install Ditches 1, 2, & 3 and Sediment Trap A along northern property line.
9. Install Temporary Phase 1 Diversion Ditch from Coley Road toward South Sediment Basin.
10. Call for inspection of devices by Durham County Sediment & Erosion Control inspector.
11. Clear and grub area to be initially excavated (Area 1 and a portion of Area 3).
12. Excavate Area 1 and build the berm adjacent to SR 1900 and the northern property line installing Ditch 4 along side of berm. Maintain Positive drainage from excavation in Areas 1 and 3 to North Sediment Basin.
13. Stabilize the exterior slope of the berm per the seeding schedule on the plans.
14. Begin fill and grade operations for Area 1 according to the plans as approved and permitted by the State. Borrow fill from Area 3.
15. Clear and grub next area of operations (uncleared portion of Area 3 and a portion of Area 5).
16. Excavate remaining Area 3 and stockpile in Area 5.
17. Begin fill and grade operations for Area 3 according to the plans as approved and permitted by the State. Continue fill operations for Area 1. Borrow fill from Area 5.
18. Install Ditches 5 & 6 during fill operations.
19. Stabilize the exterior slopes per the seeding schedule on the plans.
20. Maintain the sediment control devices according to the plans or as necessary to prevent overtopping and off site siltation.
21. Clear and grub next area to be excavated (Area 2 and the remainder of Area 5).
22. Install Culvert 2, Ditch 10, and inlet and outlet protections.
23. Excavate Area 2 and build the berm adjacent to SR 1900 over Culvert 2. Maintain Positive drainage from excavation to North Sediment Basin.
24. Begin fill and grade operations for Area 2 according to the plans as approved and permitted by the State. Continue fill operations for Area 1. Borrow fill from Area 5.
25. As the fill is increased in the berm along Coley Road, extend Ditch 4 along slope as shown on the plans.
26. Continue to stabilize the exterior slopes per the seeding schedule on the plans.
27. Maintain the sediment control devices according to the plans or as necessary to prevent overtopping and off site siltation.

28. Clear and grub next area to be excavated (uncleared portion of Area 5, Area 4, and a portion of Area 6 adjacent to Area 5).
29. Begin fill and grade operations for Area 5 according to the plans as approved and permitted by the State. Continue Fill operations for areas 2, and 3. Complete fill operations for Area 1. Borrow fill from Area 4 and a portion of Area 6 maintaining positive drainage to North Sediment Basin.
30. Stabilize the exterior slopes and Area 1 per the seeding schedule on the plans.
31. Maintain the sediment control devices according to the plans or as necessary to prevent overtopping and off site siltation.
32. Clear and grub next area to be excavated (uncleared portion of Area 6).
33. Begin fill and grade operations for Area 4 according to the plans as approved and permitted by the State. Continue fill operations for Area 2. Borrow fill from Area 6.
34. Install remainder of Ditch 4 and Ditches 8 & 9.
35. Stabilize the exterior slopes per the seeding schedule on the plans.
36. Maintain the sediment control devices according to the plans or as necessary to prevent overtopping and off site siltation.
37. Clear and grub next area to be excavated (Area 7).
38. Begin fill and grade operations for Area 6 according to the plans as approved and permitted by the State. Continue fill operations for Area 5. Complete fill operations for Areas 2 & 4. Borrow fill from Area 7.
39. Stabilize the exterior slopes and Areas 2 & 4 per the seeding schedule on the plans.
40. Maintain the sediment control devices according to the plans or as necessary to prevent overtopping and off site siltation.
41. Install Ditch 7.
42. Clear and grub next area to be excavated (Area 8).
43. Begin fill and grade operations for Area 7 according to the plans as approved and permitted by the State. Continue fill operations for area 5 and complete operations for Area 6. Borrow fill from Area 8.
44. Stabilize the exterior slopes and Area 6 per the seeding schedule on the plans.
45. Maintain the sediment control devices according to the plans or as necessary to prevent overtopping and off site siltation.
46. Install temporary diversion along clearing limits at Area 9.
47. Clear and grub remaining uncleared portion of Area 9.
48. Begin fill and grade operations for Area 8 according to the plans as approved and permitted by the State. Complete fill operations for Areas 5 & 7. Borrow fill from Area 9.
49. Stabilize the exterior slopes and Areas 5 & 7 per the seeding schedule on the plans.
50. Maintain the sediment control devices according to the plans or as necessary to prevent overtopping and off site siltation.
51. Renew permits as required by law. Submit plans for Areas 9, 10, 11, & 12 before proceeding with landfill operations in these Areas.

Ditch #	Drain Area	Rational 'C', or TR-55 CN	Peak Flow	C-L Slope	RIPRAP LINING				Construction Dimensions for			Reference
					Depth of Flow	Max. Vel.	'n'	Tract. Force	Triangular 'V' Ditch with Riprap Lining	Side Slope	Lining	
# 1	9.66 Ac.	0.3 'C'	25.7 C.F.S.	8.6%	1.19 Ft.	6.0 F.P.S.	0.049	6.4 Lb/Sq.Ft.	1.5' x 9'	3 to 1	NCDOT Class B Riprap 22" min. thickness	Install 1 permanent rock check dam
# 5	4.62 Ac.	0.3 'C'	12.3 C.F.S.	16.6%	0.83 Ft.	5.9 F.P.S.	0.055	8.6 Lb/Sq.Ft.	1.25' x 7.5'	3 to 1	NCDOT Class B Riprap 22" min. thickness	Install 2 permanent rock check dams
# 7	3.78 Ac.	0.3 'C'	10.1 C.F.S.	10.7%	0.84 Ft.	4.8 F.P.S.	0.055	5.6 Lb/Sq.Ft.	1.25' x 7.5'	3 to 1	NCDOT Class B Riprap 22" min. thickness	Install 1 permanent rock check dam
# 8	2.2 Ac.	0.3 'C'	10.0 C.F.S.	10.0%	0.85 Ft.	4.7 F.P.S.	0.055	5.3 Lb/Sq.Ft.	1.25' x 7.5'	3 to 1	NCDOT Class B Riprap 22" min. thickness	Install 1 permanent rock check dam
# 10	9.83 Ac.	0.4 'C'	29.8 C.F.S.	5.3%	1.36 Ft.	5.4 F.P.S.	0.047	4.5 Lb/Sq.Ft.	2' x 12'	3 to 1	NCDOT Class B Riprap 22" min. thickness	

Ditch #	Drain Area	Rational 'C', or TR-55 CN	Peak Flow	C-L Slope	#REFI		'D' Retardance		Q-2		Construction Dimensions for Triangular 'V' Ditch with Grass Lining		
					Depth of Flow	Max. Vel.	Depth of Flow	Max. Vel.	Max. Vel.	Tract. Force	Ht. x Top W	Side Slope	Lining
# 2	9.21 Ac.	0.3	24.5 C.F.S.	2.9%	1.42 Ft.	4.1 F.P.S.	1.31 Ft.	4.8 F.P.S.	4.7 F.P.S.	2.1 Lb/Sq.Ft.	2' x 12'	3 to 1	Grass with Excelsior Lining
# 3	8.34 Ac.	0.3	22.2 C.F.S.	3.5%	1.33 Ft.	4.2 F.P.S.	1.22 Ft.	5.0 F.P.S.	4.8 F.P.S.	2.4 Lb/Sq.Ft.	2' x 12'	3 to 1	Grass w/ 3-4 ft. strip excelsior lining
# 4	7.18 Ac.	0.3	19.1 C.F.S.	2.5%	1.39 Ft.	3.3 F.P.S.	1.27 Ft.	4.0 F.P.S.	4.1 F.P.S.	1.7 Lb/Sq.Ft.	2' x 12'	3 to 1	Grass w/ 3-4 ft. strip excelsior lining
# 6	2.64 Ac.	0.3	7.0 C.F.S.	2.2%	1.14 Ft.	1.8 F.P.S.	1.00 Ft.	2.3 F.P.S.	2.8 F.P.S.	1.1 Lb/Sq.Ft.	1.5' x 9'	3 to 1	Grass w/ 2-4 ft. strip excelsior lining
# 9	1.58 Ac.	0.3	4.2 C.F.S.	10.0%	0.72 Ft.	2.7 F.P.S.	0.63 Ft.	3.6 F.P.S.	3.8 F.P.S.	3.3 Lb/Sq.Ft.	1' x 6'	3 to 1	Grass w/ 2-4 ft. strip excelsior lining
# 11	6.8 Ac.	0.4	20.6 C.F.S.	2.0%	1.49 Ft.	3.1 F.P.S.	1.36 Ft.	3.7 F.P.S.	3.9 F.P.S.	1.4 Lb/Sq.Ft.	2' x 12'	3 to 1	Grass w/ 3-4 ft. strip excelsior lining

# S.C.S. Soil Categories List

Currin Landfill, Durham County, North Carolina

August 1, 1994

Source: Durham County Soil Survey: U.S.D.A. Soil Conservation Service

Map Symbol	Soil Name	Slope Range	Hydrologic Soil Group
<u>On Site</u>			
CrB	Creedmoor sandy loam	2-6%	C
CrC	Creedmoor sandy loam	6-10%	C
PfC	Pinkston fine sandy loam	2-10%	B
PfE	Pinkston fine sandy loam	10-25%	B
WsE	White Store sandy loam	10-25%	D

# Rainfall Data/ Land Cover

Currin Landfill,  
Rainfall Data and Land Cover Types

Durham County, North Carolina  
August 1, 1994

## RAINFALL DATA (map interpolated)

Source: Soil Conservation Service North Carolina Rainfall Data Maps (Rev. 6-70)

<u>24 hr. Storm</u>	<u>Rainfall in inches</u>
1 Year	2.95"
2 Year	3.56"
5 Year	4.68"
10 Year	5.51"
25 Year	6.33"
50 Year	7.14"
100 Year	7.93"

## LAND COVER TYPES with CN and C factors.

<u>Description</u>	<u>Soil Group</u>	<u>S.C.S. CN</u>	<u>Rational C</u>
Woods (good)	B	55	0.22
Woods (good)	C	70	0.30
Woods (good)	D	77	0.40
Meadow	B	58	0.24
Meadow	C	71	0.32
Meadow	D	78	0.45
Grass Berms, Ditches, Seeded Areas	B	65	0.28
Grass Berms, Ditches, Seeded Areas	C	77	0.40
Grass Berms, Ditches, Seeded Areas	D	82	0.76
New graded areas (no vegetation)	B	86	0.80
New graded areas (no vegetation)	C	91	0.90
New graded areas (no vegetation)	D	94	0.95
Stone and dirt roads (excl R.O.W.)	B	86	0.80
Stone and dirt roads (excl R.O.W.)	C	90	0.88
Stone and dirt roads (excl R.O.W.)	D	92	0.91
Paved roads (incl R.O.W.)	B	89	0.86
Paved roads (incl R.O.W.)	C	92	0.91
Paved roads (incl R.O.W.)	D	93	0.93
Ponds	all	98	0.98
Roofs, Asphalt surfaces	all	98	0.98

CN Factors determined from Tables 2-2a to 2-2C, Soil Conservation Service T.R. 55, June 1986 edition.  
Rational C factors interpolated from multiple sources.

	North Basin	South Basin
25 Yr Peak Inflow Rate:	85 C.F.S.	60 C.F.S.
<b>1 percent of Peak Rate</b>		
<i>expressed in acres:</i>	<b>0.85 Ac</b>	<b>0.60 Ac</b>
<i>expressed in feet:</i>	37,026 sq.ft.	26,136 sq.ft.
<b>Pond Dimensions</b>		
Riser Inv elev:	El. 306.0	El. 323.2
Pond Depth (z):	6.00	13.20
Pond Surface Area (sq ft):	39,224 sq.ft.	28,215 sq.ft.
<b>Pond Surface Area</b>		
<i>expressed in acres:</i>	<b>0.90 Ac</b>	<b>0.65 Ac</b>
<i>expressed in feet:</i>	39,224 sq.ft.	28,215 sq.ft.

<b>PEAK DISCHARGE SUMMARY</b>				
<b>JOB:</b> Currin Landfill		H.P.		
<b>DRAINAGE AREA NAME:</b> SOUTH BASIN		30-July-94		
<b>COVER DESCRIPTION</b>	<b>SOIL NAME</b>	<b>GROUP A,B,C,D?</b>	<b>CN from TABLE 2-2</b>	<b>AREA (In acres)</b>
Ponds		-	98	1.60 Ac.
Established Meadow		B	58	8.81 Ac.
Established Meadow		C	71	2.64 Ac.
Established Meadow		D	78	
Woods		B	55	4.31 Ac.
Woods		C	70	1.80 Ac.
Woods		D	77	
Paved Roads w/ROW		C	92	0.50 Ac.
Paved Roads w/ROW		D	93	0.85 Ac.
Crushed Stone Roads		B	86	0.79 Ac.
Unvegetated, disturbed		B	86	5.20 Ac.
Unvegetated, disturbed		C	91	
<b>AREA SUBTOTALS:</b>				<b>26.50 Ac.</b>
<b>Total Area In Acres =</b>	<b>26.50 Ac.</b>	<b>Total Sheet</b>	<b>Total Shallow</b>	<b>Total Channel</b>
<b>Weighted CN =</b>	<b>70</b>	<b>Flow=</b>	<b>Flow=</b>	<b>Flow =</b>
<b>Time Of Concentration =</b>	<b>0.58 Hrs.</b>	<b>0.57 Hrs.</b>	<b>0.00 Hrs.</b>	<b>0.01 Hrs.</b>
<b>Pond Factor =</b>	<b>1</b>	<b>RAINFALL TYPE II</b>		
<b>STORM</b>	<b>Precipitation (P) Inches</b>	<b>Runoff (Q)</b>	<b>Qp, PEAK DISCHARGE</b>	<b>TOTAL STORM Volumes</b>
1 Year	3.0 In.	0.7 In.	11.6 CFS	66,055 Cu. Ft.
2 Year	3.6 In.	1.0 In.	18.5 CFS	100,557 Cu. Ft.
5 Year	4.7 In.	1.8 In.	34 CFS	173,374 Cu. Ft.
10 Year	5.5 In.	2.4 In.	46 CFS	232,983 Cu. Ft.
25 Year	6.3 In.	3.1 In.	60 CFS	295,253 Cu. Ft.
50 Year	7.1 In.	3.7 In.	74 CFS	359,295 Cu. Ft.
100 Year	7.9 In.	4.4 In.	88 CFS	423,661 Cu. Ft.

<b>PEAK DISCHARGE SUMMARY</b>				
<b>JOB:</b> Currin Landfill				<b>H.P.</b>
<b>DRAINAGE AREA NAME:</b> SOUTH BASIN				<b>30-July-94</b>
<b>COVER DESCRIPTION</b>	<b>SOIL NAME</b>	<b>GROUP A,B,C,D?</b>	<b>CN from TABLE 2-2</b>	<b>AREA (In acres)</b>
Ponds		-	98	1.60 Ac.
Established Meadow		B	58	8.81 Ac.
Established Meadow		C	71	2.64 Ac.
Established Meadow		D	78	
Woods		B	55	4.31 Ac.
Woods		C	70	1.80 Ac.
Woods		D	77	
Paved Roads w/ROW		C	92	0.50 Ac.
Paved Roads w/ROW		D	93	0.85 Ac.
Crushed Stone Roads		B	86	0.79 Ac.
Unvegetated, disturbed		B	86	5.20 Ac.
Unvegetated, disturbed		C	91	
<b>AREA SUBTOTALS:</b>				<b>26.50 Ac.</b>
<b>Total Area in Acres =</b>	<b>26.50 Ac.</b>	<b>Total Sheet</b>	<b>Total Shallow</b>	<b>Total Channel</b>
<b>Weighted CN =</b>	<b>70</b>	<b>Flow=</b>	<b>Flow=</b>	<b>Flow =</b>
<b>Time Of Concentration =</b>	<b>0.58 Hrs.</b>	<b>0.57 Hrs.</b>	<b>0.00 Hrs.</b>	<b>0.01 Hrs.</b>
<b>Pond Factor =</b>	<b>1</b>	<b>RAINFALL TYPE II</b>		
<b>STORM</b>	<b>Precipitation (P) Inches</b>	<b>Runoff (Q)</b>	<b>Qp, PEAK DISCHARGE</b>	<b>TOTAL STORM Volumes</b>
1 Year	3.0 In.	0.7 In.	11.6 CFS	66,055 Cu. Ft.
2 Year	3.6 In.	1.0 In.	18.5 CFS	100,557 Cu. Ft.
5 Year	4.7 In.	1.8 In.	34 CFS	173,374 Cu. Ft.
10 Year	5.5 In.	2.4 In.	46 CFS	232,983 Cu. Ft.
25 Year	6.3 In.	3.1 In.	60 CFS	295,253 Cu. Ft.
50 Year	7.1 In.	3.7 In.	74 CFS	359,295 Cu. Ft.
100 Year	7.9 In.	4.4 In.	88 CFS	423,661 Cu. Ft.

H.P.

**Currin Landfill**  
 Rev. 10-31-94

**VOLUME ESTIMATES: South Basin Storage**

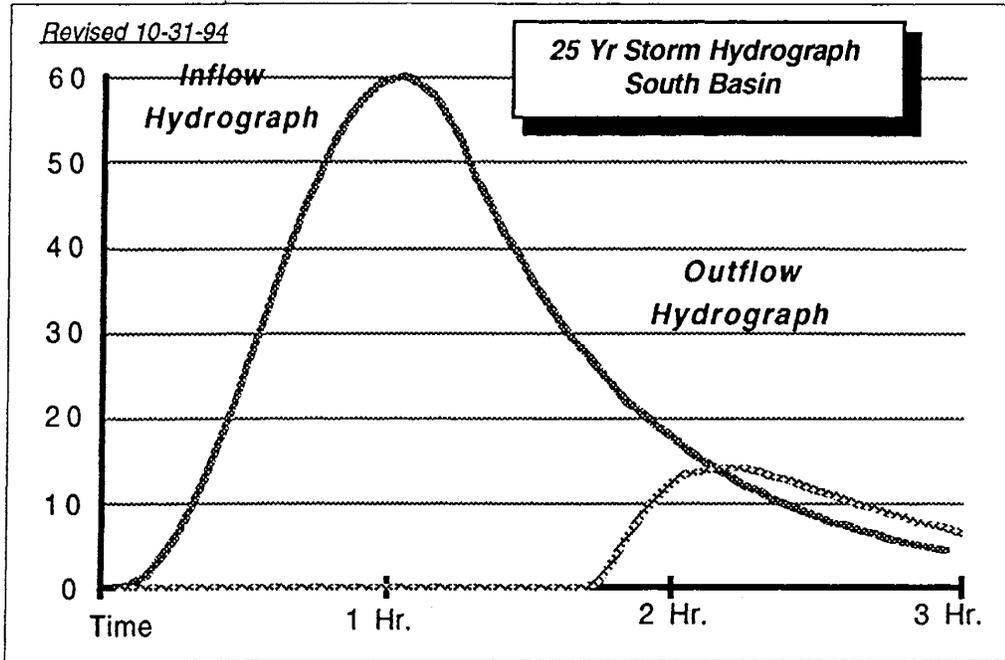
STAGE/ ELEV.	CONTOUR INCHES	AREA SQ. FEET	INCREMENT. STORAGE	CUMULATIVE STORAGE	MAP SCALE 1 INCH = 100 FT.
0 FT.			0		
EL. 310.0		2,520		0	
5 FT.			43,800		SEDIMENT or Perm. WATER INITIAL STORAGE
EL. 315.0		15,000		43,800	
10 FT.			97,500		9,360 CU. FT.
EL. 320.0		24,000		141,300	
13 FT.			80,218		Basin Stage 2.0 FT.
EL. 323.2		26,136		221,518	
15 FT.			52,817		STORAGE TO Max. Elev. 2,373,965 GALLONS
EL. 325.0		32,550		274,335	
16 FT.			43,040		FLOOD STORAGE 308,015 CuFt
EL. 326.3		34,700		317,375	

**Notes:** Top of dam is at El. 327.0

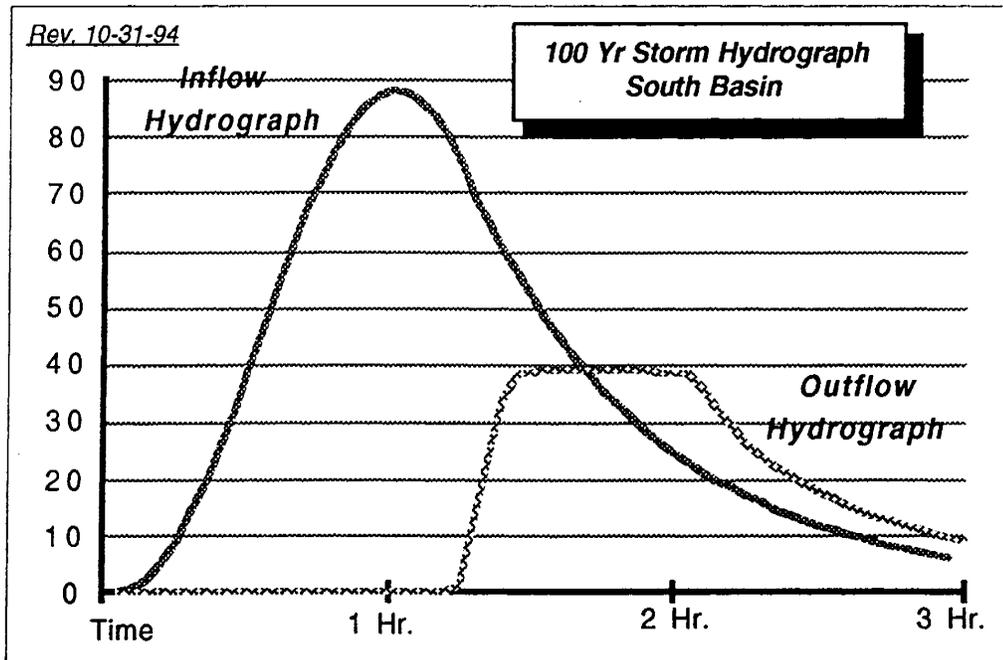
STAGE/STORAGE FUNCTION				Linear Regression	
STAGE	STORAGE	STAGE	STORAGE	Function	
0	0	<b>NATURAL LOGARITHMS</b>			
5	43,800	1.60943791	10.6873891	<b>b</b>	In Ks
10	141,300	2.30258509	11.85864057	<b>1.6724</b>	7.9984
13.2	221,518	2.58021683	12.30825732	<b>1/b</b>	<b>Ks</b>
15	274,335	2.7080502	12.52210527	<b>0.5979</b>	<b>2976.1953</b>

## 25 and 100 Year Hydrographs for the South Basin

Currin Brothers South Basin		Top of Dam=Primary Outlet: INV. OU' 30 In. Riser El. 323.20		Spillway Width=20 Ft.							
		El. 327.00		1 Riser/Barrel INV. OU' 24 In. Barrel El. 315.00							
Time (minutes)	OVERLAN FLOW	TOTAL INFLOW	INCREMENTAL Storage-CuF	Accumulate Storage Cu	Stage Feet	Elevation TOTAL	Outflow: OUTFLOW Riser/Barrel	Max. Outflow: CMP-Barrel	Spillway Inv. El. 325.50		
MAXIMUM VALUES>>	180.0	6.0	6.0	10,783	241,717	13.86	323.86	14.12	14.12	36.76	0.00
						2.1 Ft. Below the Top of Dam.					



Currin Brothers South Basin		Top of Dam=Primary Outlet: INV. OU' 30 In. Riser El. 323.20		Spillway Width=20 Ft.							
		El. 327.00		1 Riser/Barrel INV. OU' 24 In. Barrel El. 315.00							
Time (minutes)	OVERLAN FLOW	TOTAL INFLOW	INCREMENTAL Storage-CuF	Accumulate Storage Cu	Stage Feet	Elevation TOTAL	Outflow: OUTFLOW Riser/Barrel	Max. Outflow: CMP-Barrel	Spillway Inv. El. 325.50		
MAXIMUM VALUES>>	180.0	8.8	8.8	15,834	270,642	14.83	324.83	38.96	38.96	38.96	0.00
						2.2 Ft. Below the Top of Dam.					



Time (minutes)	OVERLAND FLOW		TOTAL INFLOW	INCREMENTAL Storage-CuFt	Accumulated Storage-CuFt	Stage Feet	Elevation	TOTAL OUTFLOW	Outflow: Riser/Barrel	Max. Outflow: CMP-Barrel	Spillway Inv. El. 325.50
	FLOW	INFLOW									
0.0	0	0	0	0	0	1.98	311.98	0.00	0.00	0.00	0.00
3.0	0	0	0	70	9,360	1.98	311.98	0.00	0.00	0.00	0.00
6.0	2	2	4	278	9,430	1.99	311.99	0.00	0.00	0.00	0.00
9.0	3	3	6	618	9,707	2.03	312.03	0.00	0.00	0.00	0.00
12.0	6	6	12	1,082	10,325	2.10	312.10	0.00	0.00	0.00	0.00
15.0	9	9	18	1,657	11,407	2.23	312.23	0.00	0.00	0.00	0.00
18.0	13	13	26	2,390	13,064	2.42	312.42	0.00	0.00	0.00	0.00
21.0	17	17	34	3,081	15,394	2.67	312.67	0.00	0.00	0.00	0.00
22.0	22	22	44	3,893	18,475	2.98	312.98	0.00	0.00	0.00	0.00
27.0	26	26	52	4,744	22,368	3.34	313.34	0.00	0.00	0.00	0.00
30.0	31	31	60	5,612	27,112	3.75	313.75	0.00	0.00	0.00	0.00
33.0	36	36	69	6,474	32,724	4.19	314.19	0.00	0.00	0.00	0.00
36.0	41	41	78	7,308	39,198	4.67	314.67	0.00	0.00	0.00	0.00
39.0	45	45	87	8,094	46,507	5.17	315.17	0.00	0.00	0.00	0.00
42.0	49	49	96	8,809	54,600	5.70	315.70	0.00	0.00	0.00	0.00
45.0	52	52	105	9,436	63,409	6.23	316.23	0.00	0.00	0.00	0.00
48.0	55	55	114	9,959	72,846	6.77	316.77	0.00	0.00	0.00	0.00
51.0	58	58	122	10,364	82,805	7.31	317.31	0.00	0.00	0.00	0.00
54.0	59	59	130	10,641	93,169	7.84	317.84	0.00	0.00	0.00	0.00
57.0	60	60	138	10,782	103,809	8.36	318.36	0.00	0.00	0.00	0.00
60.0	60	60	146	10,783	114,591	8.87	318.87	0.00	0.00	0.00	0.00
63.0	59	59	154	10,646	125,374	9.36	319.36	0.00	0.00	0.00	0.00
66.0	58	58	161	10,373	136,020	9.83	319.83	0.00	0.00	0.00	0.00
69.0	55	55	168	9,971	146,393	10.27	320.27	0.00	0.00	0.00	0.00
72.0	53	53	175	9,451	156,364	10.68	320.68	0.00	0.00	0.00	0.00
75.0	49	49	181	8,743	165,815	11.07	321.07	0.00	0.00	0.00	0.00
78.0	45	45	187	8,130	174,558	11.41	321.41	0.00	0.00	0.00	0.00
81.0	42	42	192	7,559	182,688	11.73	321.73	0.00	0.00	0.00	0.00
84.0	39	39	196	7,028	190,247	12.01	322.01	0.00	0.00	0.00	0.00
87.0	36	36	200	6,535	197,275	12.28	322.28	0.00	0.00	0.00	0.00
90.0	34	34	203	6,076	203,810	12.52	322.52	0.00	0.00	0.00	0.00
93.0	31	31	206	5,650	209,887	12.74	322.74	0.00	0.00	0.00	0.00
96.0	29	29	209	5,253	215,537	12.94	322.94	0.00	0.00	0.00	0.00
99.0	27	27	212	4,885	220,790	13.13	323.13	0.00	0.00	0.00	0.00
102.0	25	25	215	4,581	225,675	13.31	323.31	0.89	0.89	35.43	0.00
105.0	23	23	218	3,602	230,056	13.46	323.46	3.45	3.45	35.80	0.00
108.0	22	22	221	2,803	233,657	13.58	323.58	6.24	6.24	36.11	0.00
110.0	20	20	224	2,076	236,460	13.68	323.68	8.75	8.75	36.34	0.00
114.0	19	19	227	1,455	238,536	13.75	323.75	10.78	10.78	36.50	0.00
117.0	18	18	230	948	239,991	13.80	323.80	12.27	12.27	36.62	0.00
120.0	16	16	233	545	240,939	13.84	323.84	13.28	13.28	36.70	0.00
123.0	15	15	236	233	241,484	13.86	323.86	13.87	13.87	36.74	0.00
126.0	14	14	239	-4	241,717	13.86	323.86	14.12	14.12	36.76	0.00
129.0	13	13	242	-182	241,712	13.86	323.86	14.12	14.12	36.76	0.00
132.0	12	12	245	-311	241,531	13.86	323.86	13.92	13.92	36.75	0.00
135.0	11	11	248	-405	241,219	13.85	323.85	13.58	13.58	36.72	0.00
138.0	11	11	251	-469	240,815	13.83	323.83	13.14	13.14	36.69	0.00
141.0	10	10	254	-512	240,345	13.82	323.82	12.64	12.64	36.65	0.00
144.0	9	9	257	-539	239,833	13.80	323.80	12.11	12.11	36.61	0.00
147.0	8	8	260	-554	239,294	13.78	323.78	11.55	11.55	36.57	0.00
150.0	8	8	263	-559	238,740	13.76	323.76	10.98	10.98	36.52	0.00
153.0	7	7	266	-558	238,181	13.74	323.74	10.42	10.42	36.48	0.00
156.0	7	7	269	-551	237,623	13.72	323.72	9.87	9.87	36.43	0.00
159.0	6	6	272	-541	237,072	13.70	323.70	9.33	9.33	36.39	0.00
162.0	6	6	275	-528	236,532	13.68	323.68	8.82	8.82	36.34	0.00
165.0	5	5	278	-513	236,004	13.67	323.67	8.33	8.33	36.30	0.00
168.0	5	5	281	-498	235,490	13.65	323.65	7.85	7.85	36.26	0.00
171.0	5	5	284	-481	234,993	13.63	323.63	7.40	7.40	36.22	0.00
174.0	4	4	287	-464	234,512	13.61	323.61	6.98	6.98	36.18	0.00
177.0	4	4	290	-447	234,048	13.60	323.60	6.58	6.58	36.14	0.00
180.0	60	60	293	10,783	241,717	13.86	323.86	14.12	14.12	36.76	0.00

Time (minutes)	OVERLAND FLOW	TOTAL INFLOW	INCREMENTAL Storage-CuFt	Accumulated Storage CuFt	Stage Feet	Elevation	TOTAL OUTFLOW	Outflow: Rise/Barrel	Max Outflow: CMP-Barrel	Spillway Inv. El. 325.50
0.0	0	0	0	0	1.98	311.98	0.00	0.00	0.00	0.00
3.0	1	1	105	9,360	1.98	311.98	0.00	0.00	0.00	0.00
6.0	2	2	418	9,465	2.00	312.00	0.00	0.00	0.00	0.00
9.0	5	5	931	9,884	2.05	312.05	0.00	0.00	0.00	0.00
12.0	9	9	1,630	10,815	2.16	312.16	0.00	0.00	0.00	0.00
15.0	14	14	2,496	12,445	2.35	312.35	0.00	0.00	0.00	0.00
18.0	19	19	3,506	14,940	2.62	312.62	0.00	0.00	0.00	0.00
21.0	26	26	4,633	18,446	2.98	312.98	0.00	0.00	0.00	0.00
24.0	32	32	5,848	23,080	3.40	313.40	0.00	0.00	0.00	0.00
27.0	40	40	7,118	28,928	3.90	313.90	0.00	0.00	0.00	0.00
30.0	47	47	8,410	36,046	4.44	314.44	0.00	0.00	0.00	0.00
33.0	54	54	9,688	44,456	5.04	315.04	0.00	0.00	0.00	0.00
36.0	61	61	10,920	54,144	5.67	315.67	0.00	0.00	0.00	0.00
39.0	67	67	12,071	65,064	6.32	316.32	0.00	0.00	0.00	0.00
42.0	73	73	13,112	77,135	7.00	317.00	0.00	0.00	0.00	0.00
45.0	78	78	14,015	90,247	7.69	317.69	0.00	0.00	0.00	0.00
48.0	82	82	14,756	104,262	8.39	318.39	0.00	0.00	0.00	0.00
51.0	85	85	15,315	119,019	9.08	319.08	0.00	0.00	0.00	0.00
54.0	87	87	15,678	134,334	9.76	319.76	0.00	0.00	0.00	0.00
57.0	88	88	15,834	150,012	10.42	320.42	0.00	0.00	0.00	0.00
60.0	88	88	15,779	165,846	11.07	321.07	0.00	0.00	0.00	0.00
63.0	86	86	15,516	181,625	11.69	321.69	0.00	0.00	0.00	0.00
66.0	84	84	15,050	197,141	12.27	322.27	0.00	0.00	0.00	0.00
69.0	80	80	14,395	212,191	12.82	322.82	0.00	0.00	0.00	0.00
72.0	75	75	13,328	226,587	13.34	323.34	1.33	1.33	35.51	0.00
75.0	69	69	10,292	239,915	13.80	323.80	12.19	12.19	35.62	0.00
78.0	64	64	7,224	250,207	14.15	324.15	24.30	24.30	37.43	0.00
81.0	60	60	4,622	257,431	14.40	324.40	34.17	34.17	37.98	0.00
84.0	56	56	3,107	262,053	14.55	324.55	38.33	38.33	38.33	0.00
87.0	52	52	2,354	265,160	14.65	324.65	38.56	38.56	38.56	0.00
90.0	48	48	1,661	267,514	14.73	324.73	38.73	38.73	38.73	0.00
93.0	45	45	1,025	269,175	14.78	324.78	38.86	38.86	38.86	0.00
96.0	41	41	442	270,201	14.82	324.82	38.93	38.93	38.93	0.00
99.0	38	38	-94	270,642	14.83	324.83	38.96	38.96	38.96	0.00
102.0	36	36	-585	270,548	14.83	324.83	38.95	38.95	38.95	0.00
105.0	33	33	-1,035	269,963	14.81	324.81	38.91	38.91	38.91	0.00
108.0	31	31	-1,446	268,928	14.78	324.78	38.84	38.84	38.84	0.00
111.0	29	29	-1,821	267,482	14.73	324.73	38.73	38.73	38.73	0.00
114.0	27	27	-2,164	265,661	14.67	324.67	38.60	38.60	38.60	0.00
117.0	25	25	-2,475	263,497	14.60	324.60	38.44	38.44	38.44	0.00
120.0	23	23	-2,758	261,022	14.51	324.51	38.25	38.25	38.25	0.00
123.0	21	21	-2,533	258,264	14.42	324.42	35.37	35.37	38.05	0.00
126.0	20	20	-2,155	255,731	14.34	324.34	31.76	31.76	37.86	0.00
129.0	18	18	-1,872	253,575	14.27	324.27	28.78	28.78	37.69	0.00
132.0	17	17	-1,655	251,703	14.20	324.20	26.26	26.26	37.55	0.00
135.0	16	16	-1,483	250,049	14.15	324.15	24.10	24.10	37.42	0.00
138.0	15	15	-1,346	248,565	14.10	324.10	22.20	22.20	37.30	0.00
141.0	14	14	-1,233	247,219	14.05	324.05	20.53	20.53	37.20	0.00
144.0	13	13	-1,138	245,987	14.01	324.01	19.03	19.03	37.10	0.00
147.0	12	12	-1,058	244,848	13.97	323.97	17.68	17.68	37.01	0.00
150.0	11	11	-988	243,791	13.93	323.93	16.45	16.45	36.93	0.00
153.0	10	10	-926	242,803	13.90	323.90	15.33	15.33	36.85	0.00
156.0	9	9	-871	241,877	13.87	323.87	14.30	14.30	36.77	0.00
159.0	9	9	-822	241,006	13.84	323.84	13.35	13.35	36.70	0.00
162.0	8	8	-776	240,185	13.81	323.81	12.47	12.47	36.64	0.00
165.0	8	8	-735	239,408	13.78	323.78	11.66	11.66	36.58	0.00
168.0	7	7	-697	238,673	13.76	323.76	10.91	10.91	36.52	0.00
171.0	7	7	-662	237,976	13.73	323.73	10.22	10.22	36.46	0.00
174.0	6	6	-629	237,314	13.71	323.71	9.57	9.57	36.41	0.00
177.0	6	6	-598	236,685	13.69	323.69	8.96	8.96	36.35	0.00
180.0	88	88	15,834	270,642	14.83	324.83	38.96	38.96	38.96	0.00

MAXIMUM VALUES>> 180.0 88 88 15.834 270.642 14.83 324.83 38.96 38.96 38.96 0.00

2.2 Ft. Below the Top of Dam.

Little & Little PO Box 1448, Raleigh NC 27602

<b>PEAK DISCHARGE SUMMARY</b>					
<b>JOB:</b> Currin Landfill					H.P.
<b>DRAINAGE AREA NAME:</b> NORTH BASIN					30-July-94
<b>COVER DESCRIPTION</b>	<b>SOIL NAME</b>	<b>GROUP A,B,C,D?</b>	<b>CN from TABLE 2-2</b>	<b>AREA (In acres)</b>	
Ponds		-	98	1.60 Ac.	
Established Meadow		B	58	12.70 Ac.	
Established Meadow		C	71	4.34 Ac.	
Established Meadow		D	78	5.51 Ac.	
Crushed Stone Roads		B	86	0.44 Ac.	
Crushed Stone Roads		D	92	0.21 Ac.	
Paved Roads w/ROW		C	92		
Paved Roads w/ROW		D	93		
Unvegetated, disturbed		B	86	6.90 Ac.	
Unvegetated, disturbed		C	91		
<b>AREA SUBTOTALS:</b>				<b>31.70 Ac.</b>	
<b>Total Area In Acres =</b>	<b>31.70 Ac.</b>	<b>Total Sheet</b>	<b>Total Shallow</b>	<b>Total Channel</b>	
<b>Weighted CN =</b>	<b>72</b>	<b>Flow=</b>	<b>Flow=</b>	<b>Flow =</b>	
<b>Time Of Concentration =</b>	<b>0.48 Hrs.</b>	<b>0.43 Hrs.</b>	<b>0.04 Hrs.</b>	<b>0.01 Hrs.</b>	
<b>Pond Factor =</b>	<b>1</b>	<b>RAINFALL TYPE II</b>			
<b>STORM</b>	<b>Precipitation (P) Inches</b>	<b>Runoff (Q)</b>	<b>Qp, PEAK DISCHARGE</b>	<b>TOTAL STORM Volumes</b>	
1 Year	3.0 In.	0.8 In.	17.8 CFS	89,582 Cu. Ft.	
2 Year	3.6 In.	1.2 In.	27.7 CFS	133,522 Cu. Ft.	
5 Year	4.7 In.	2.0 In.	49 CFS	224,901 Cu. Ft.	
10 Year	5.5 In.	2.6 In.	67 CFS	298,905 Cu. Ft.	
25 Year	6.3 In.	3.3 In.	85 CFS	375,731 Cu. Ft.	
50 Year	7.1 In.	3.9 In.	104 CFS	454,373 Cu. Ft.	
100 Year	7.9 In.	4.6 In.	124 CFS	533,132 Cu. Ft.	

**PEAK DISCHARGE SUMMARY**

<b>JOB:</b> Currin Landfill		H.P.		
<b>DRAINAGE AREA NAME:</b> NORTH BASIN		30-July-94		
COVER DESCRIPTION	SOIL NAME	GROUP A,B,C,D?	CN from TABLE 2-2	AREA (In acres)
Ponds		-	98	1.60 Ac.
Established Meadow		B	58	12.70 Ac.
Established Meadow		C	71	4.34 Ac.
Established Meadow		D	78	5.51 Ac.
Crushed Stone Roads		B	86	0.44 Ac.
Crushed Stone Roads		D	92	0.21 Ac.
Paved Roads w/ROW		C	92	
Paved Roads w/ROW		D	93	
Unvegetated, disturbed		B	86	6.90 Ac.
Unvegetated, disturbed		C	91	
<b>AREA SUBTOTALS:</b>				<b>31.70 Ac.</b>
<b>Total Area In Acres =</b>	<b>31.70 Ac.</b>	<b>Total Sheet</b>	<b>Total Shallow</b>	<b>Total Channel</b>
<b>Weighted CN =</b>	<b>72</b>	<b>Flow=</b>	<b>Flow=</b>	<b>Flow =</b>
<b>Time Of Concentration =</b>	<b>0.48 Hrs.</b>	<b>0.43 Hrs.</b>	<b>0.04 Hrs.</b>	<b>0.01 Hrs.</b>
<b>Pond Factor =</b>	<b>1</b>	<b>RAINFALL TYPE II</b>		
<i>STORM</i>	<i>Precipitation (P) Inches</i>	<i>Runoff (Q)</i>	<i>Qp, PEAK DISCHARGE</i>	<i>TOTAL STORM Volumes</i>
1 Year	3.0 In.	0.8 In.	17.8 CFS	89,582 Cu. Ft.
2 Year	3.6 In.	1.2 In.	27.7 CFS	133,522 Cu. Ft.
5 Year	4.7 In.	2.0 In.	49 CFS	224,901 Cu. Ft.
10 Year	5.5 In.	2.6 In.	67 CFS	298,905 Cu. Ft.
25 Year	6.3 In.	3.3 In.	85 CFS	375,731 Cu. Ft.
50 Year	7.1 In.	3.9 In.	104 CFS	454,373 Cu. Ft.
100 Year	7.9 In.	4.6 In.	124 CFS	533,132 Cu. Ft.

H.P.

Curran Landfill  
10/28/94

**VOLUME ESTIMATES: North Basin Storage**

STAGE/ ELEV.	CONTOUR INCHES	AREA SQ. FEET	INCREMENT. STORAGE	CUMULATIVE STORAGE	MAP SCALE
0 FT.			0	0	1 INCH = 100 FT.
EL. 300.0	0.72	25,500			<b>SEDIMENT or Perm. WATER INITIAL STORAGE</b>
5 FT.			152,750	152,750	
EL. 305.0	1.71	35,600			
10 FT.			203,750	356,500	12,420
EL. 310.0		45,900			CU. FT.
11 FT.			68,068	424,568	
EL. 311.4		49,300			Basin Stage 0.7 FT.
					<b>STORAGE TO Max. Elev. 3,175,769 GALLONS</b>
					<b>FLOOD STORAGE</b> 412,148 CuFt

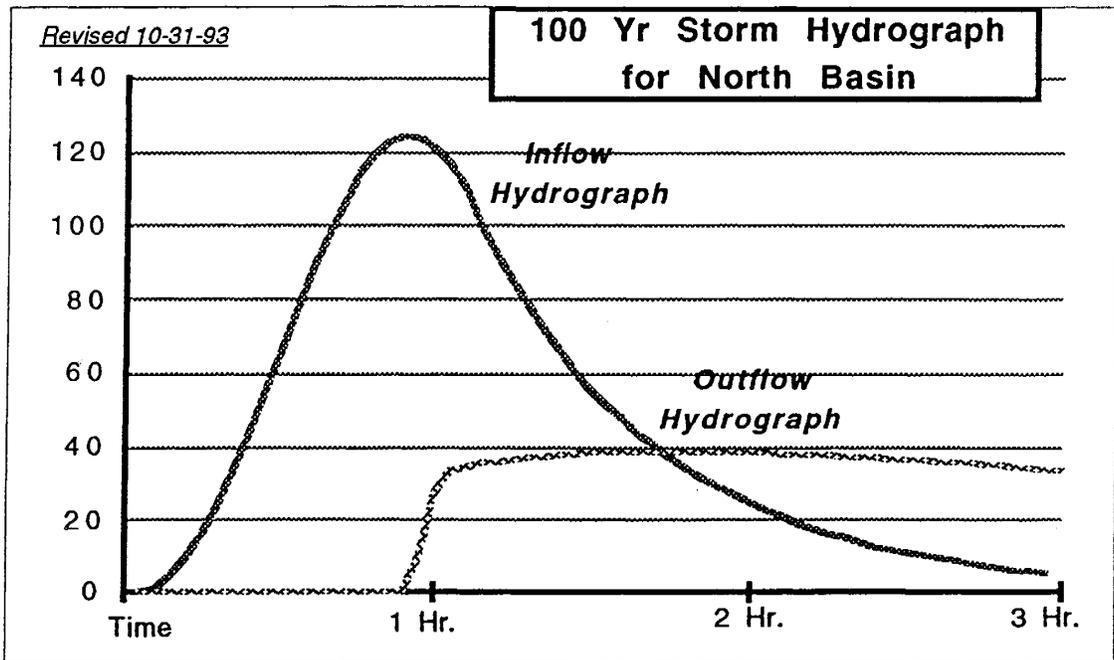
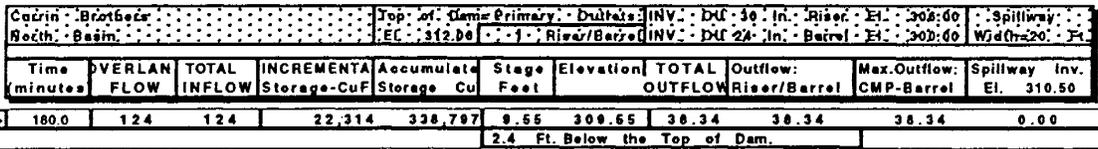
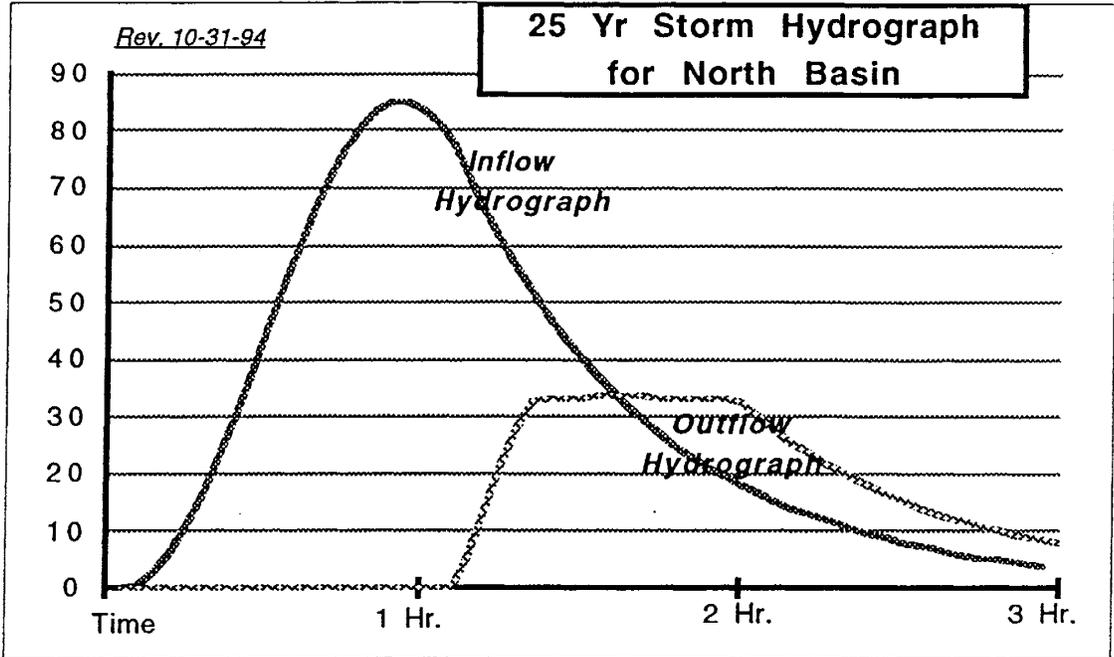
**Notes:** Top of dam is at El. 312.0

STAGE/STORAGE FUNCTION				Linear Regression	
STAGE	STORAGE	STAGE	STORAGE	Function	
0	0	<b>NATURAL LOGARITHMS</b>		<b>b</b>	ln Ks
5	152,750	1.60943791	11.93655788	<b>1.2319</b>	9.9530
10	356,500	2.30258509	12.78408952	<b>1/b</b>	<b>Ks</b>
11.43	424,568	2.43624148	12.95882746	<b>0.8117</b>	<b>21014.5135</b>

## 25 and 100 Year Hydrographs for the North Basin

Cu#10: Brothel North Basin	Top of Dam Primary Outlet El.: 312.00	INV.: DU 24 In. Barrel El.: 300.00	Spillway Width=20 Ft.							
Time (minutes)	OVERLAN FLOW	TOTAL INFLOW	INCREMENTAL Storage-CuF	Accumulate Storage Cu	Stage Feet	Elevation	TOTAL OUTFLOW	Outflow: Riser/Barrel	Max.Outflow: CMP-Barrel	Spillway Inv. El. 310.50

MAXIMUM VALUES>>	180.0	85	85	15,273	247,920	7.41	307.41	33.20	33.20	33.20	0.00
4.6 Ft. Below the Top of Dam.											



25 YEAR STORM ROUTING		Curtin Brothers		Top of Dam:		Primary Outlets:		30 In. Riser		24 In. Riser		El. 306.00		El. 300.00		Spillway	
Storm volume by SCS:		North Branch		El. 312.00		1 Riser/Barrel		INV. CUT:		INV. CUT:		El. 300.00		El. 310.50		Width=20 Ft.	
Q=(P-0.2S) <sup>2</sup> /(P+0.8S)	V=(C/12) <sup>2</sup> (Ac <sup>2</sup> *43560) In Cu.Ft.	Time (minutes)	OVERLAND FLOW	TOTAL INFLOW	INCREMENTAL Storage-CuFt	Accumulated Storage CuFt	Stage Feet	Elevation	TOTAL OUTFLOW	Outflow: Riser/Barrel	Max Outflow: CMP-Barrel	Spillway Inv. El.	Spillway Width=20 Ft.				
Watershed Area = 31.70 Acres	25 Year Runoff = 3.24 In.	0.0	0	0	0	12.420	0.65	300.65	0.00	0.00	0.00	0.00	0.00				
25 Year Storm Volume = 372,866 Cu. Ft.	25 Year Qp by SCS in CFS = 85.0 C.F.S.	3.0	1	1	122	12,420	0.65	300.65	0.00	0.00	0.00	0.00	0.00				
TP=Vol/(1.39Qp <sup>50</sup> ) in min	52.60 Minutes	6.0	3	3	486	12,542	0.66	300.66	0.00	0.00	0.00	0.00	0.00				
TIME INGR IN SECONDS and MINUTES	3.0 Minutes	9.0	6	6	1,079	13,028	0.68	300.68	0.00	0.00	0.00	0.00	0.00				
Stage-Storage Function:	S=KsZ <sup>b</sup>	12.0	10	10	1,882	14,107	0.72	300.72	0.00	0.00	0.00	0.00	0.00				
Z=(S/Ks) <sup>1/b</sup>	Ks=	15.0	16	16	2,870	15,990	0.80	300.80	0.00	0.00	0.00	0.00	0.00				
21014.5135	b	18.0	22	22	4,011	18,860	0.92	300.92	0.00	0.00	0.00	0.00	0.00				
1.2319	1/b	21.0	29	29	5,269	22,871	1.07	301.07	0.00	0.00	0.00	0.00	0.00				
0.811754201	Stage (Z) = 0 at Elev. ...	24.0	37	37	6,603	28,140	1.27	301.27	0.00	0.00	0.00	0.00	0.00				
300.0	Enter watershed's weighted CN below:	27.0	44	44	7,970	34,743	1.50	301.50	0.00	0.00	0.00	0.00	0.00				
Runoff Calculation (fr. Rainfall)	7.2	30.0	52	52	9,327	42,714	1.78	301.78	0.00	0.00	0.00	0.00	0.00				
Enter watershed's weighted CN below:	7.2	33.0	59	59	10,631	52,041	2.09	302.09	0.00	0.00	0.00	0.00	0.00				
7.2	7.2	36.0	66	66	11,839	62,672	2.43	302.43	0.00	0.00	0.00	0.00	0.00				
6.3 In.	6.3 In.	39.0	72	72	12,913	74,511	2.79	302.79	0.00	0.00	0.00	0.00	0.00				
S= 3.89	S= 3.89	42.0	77	77	13,818	87,423	3.18	303.18	0.00	0.00	0.00	0.00	0.00				
Runoff = 3.24 In.	Runoff = 3.24 In.	45.0	81	81	14,526	101,241	3.58	303.58	0.00	0.00	0.00	0.00	0.00				
105.0	105.0	48.0	83	83	15,013	115,767	4.00	304.00	0.00	0.00	0.00	0.00	0.00				
108.0	108.0	51.0	85	85	15,265	130,780	4.41	304.41	0.00	0.00	0.00	0.00	0.00				
111.0	111.0	54.0	85	85	15,273	146,045	4.82	304.82	0.00	0.00	0.00	0.00	0.00				
114.0	114.0	57.0	84	84	15,037	161,318	5.23	305.23	0.00	0.00	0.00	0.00	0.00				
117.0	117.0	60.0	81	81	14,564	176,355	5.62	305.62	0.00	0.00	0.00	0.00	0.00				
120.0	120.0	63.0	77	77	13,870	190,920	6.00	306.00	0.00	0.00	0.00	0.00	0.00				
123.0	123.0	66.0	71	71	11,787	204,790	6.35	306.35	0.00	0.00	0.00	0.00	0.00				
126.0	126.0	69.0	65	65	9,333	216,577	6.64	306.64	13.49	13.49	31.14	0.00	0.00				
129.0	129.0	72.0	60	60	6,995	225,910	6.87	306.87	21.40	21.40	31.78	0.00	0.00				
132.0	132.0	75.0	56	56	4,959	232,906	7.05	307.05	28.02	28.02	32.24	0.00	0.00				
135.0	135.0	78.0	51	51	3,364	237,865	7.17	307.17	32.56	32.56	32.56	0.00	0.00				
141.0	141.0	81.0	47	47	2,607	241,229	7.25	307.25	32.78	32.78	32.78	0.00	0.00				
144.0	144.0	84.0	44	44	1,916	243,836	7.31	307.31	32.94	32.94	32.94	0.00	0.00				
147.0	147.0	87.0	40	40	1,283	245,752	7.36	307.36	33.06	33.06	33.06	0.00	0.00				
150.0	150.0	90.0	37	37	706	247,035	7.39	307.39	33.15	33.15	33.15	0.00	0.00				
153.0	153.0	93.0	34	34	179	247,741	7.41	307.41	33.19	33.19	33.19	0.00	0.00				
156.0	156.0	96.0	32	32	-302	247,920	7.41	307.41	33.20	33.20	33.20	0.00	0.00				
159.0	159.0	99.0	29	29	-740	247,618	7.41	307.41	33.18	33.18	33.18	0.00	0.00				
162.0	162.0	102.0	27	27	-1,139	246,878	7.39	307.39	33.14	33.14	33.14	0.00	0.00				
165.0	165.0	105.0	25	25	-1,501	245,740	7.36	307.36	33.06	33.06	33.06	0.00	0.00				
168.0	168.0	108.0	23	23	-1,830	244,238	7.32	307.32	32.97	32.97	32.97	0.00	0.00				
171.0	171.0	111.0	21	21	-2,129	242,408	7.28	307.28	32.85	32.85	32.85	0.00	0.00				
174.0	174.0	114.0	19	19	-2,389	240,280	7.23	307.23	32.72	32.72	32.72	0.00	0.00				
177.0	177.0	117.0	18	18	-2,642	237,881	7.17	307.17	32.56	32.56	32.56	0.00	0.00				
180.0	180.0	120.0	16	16	-2,485	235,239	7.10	307.10	30.35	30.35	32.39	0.00	0.00				
MAXIMUM VALUES>>	MAXIMUM VALUES>>	123.0	15	15	-2,278	232,744	7.04	307.04	27.86	27.86	32.39	0.00	0.00				
		126.0	14	14	-2,092	230,466	6.99	306.99	25.65	25.65	32.08	0.00	0.00				
		129.0	13	13	-1,932	228,374	6.94	306.94	23.67	23.67	31.94	0.00	0.00				
		132.0	12	12	-1,792	226,442	6.89	306.89	21.88	21.88	31.81	0.00	0.00				
		135.0	11	11	-1,668	224,650	6.84	306.84	20.27	20.27	31.69	0.00	0.00				
		138.0	10	10	-1,557	222,983	6.80	306.80	18.80	18.80	31.58	0.00	0.00				
		141.0	9	9	-1,458	221,425	6.76	306.76	17.46	17.46	31.47	0.00	0.00				
		144.0	9	9	-1,369	219,967	6.73	306.73	16.23	16.23	31.37	0.00	0.00				
		147.0	8	8	-1,287	218,595	6.69	306.69	15.11	15.11	31.28	0.00	0.00				
		150.0	7	7	-1,212	217,311	6.66	306.66	14.07	14.07	31.19	0.00	0.00				
		153.0	7	7	-1,144	216,099	6.63	306.63	13.12	13.12	31.11	0.00	0.00				
		156.0	6	6	-1,080	214,965	6.60	306.60	12.24	12.24	31.03	0.00	0.00				
		158.0	6	6	-1,022	213,874	6.58	306.58	11.43	11.43	30.96	0.00	0.00				
		162.0	5	5	-967	212,853	6.55	306.55	10.68	10.68	30.89	0.00	0.00				
		165.0	5	5	-916	211,885	6.53	306.53	9.98	9.98	30.82	0.00	0.00				
		168.0	5	5	-869	210,969	6.50	306.50	9.34	9.34	30.75	0.00	0.00				
		171.0	4	4	-824	210,101	6.48	306.48	8.74	8.74	30.69	0.00	0.00				
		174.0	4	4	-782	209,277	6.46	306.46	8.18	8.18	30.64	0.00	0.00				
		177.0	4	4	-743	208,494	6.44	306.44	7.67	7.67	30.58	0.00	0.00				
		180.0	4	4	-710	207,743	6.41	307.41	7.19	7.19	30.52	0.00	0.00				
		180.0	85	85	15,273	247,920	7.41	307.41	33.20	33.20	33.20	0.00	0.00				

4.6 Ft. Below the Top of Dam.

100 YEAR STORM ROUTING

Rev. 10-31-94

Currit Brothers  
North Basin

Top of Dam:  
El. 312.00

Primary Outlets: 1 Riser/Barrel  
NV. CUT: 24 In. Barrel

30 In. Riser  
El. 308.00

Spillway Inv.  
El. 310.50  
Width=20 Ft.

Time (minutes)	OVERLAND FLOW	TOTAL INFLOW	INCREMENTAL Storage-CuFt	Accumulated Storage CuFt	Stage Feet	Elevation	TOTAL	Outflow:	Max Outflow:	Spillway Inv.
							OUTFLOW	Riser/Barrel	CMP-Barrel	
0.0	0	0	0	12,420	0.65	300.65	0.00	0.00	0.00	0.00
3.0	1	1	186	12,420	0.65	300.65	0.00	0.00	0.00	0.00
6.0	4	4	738	12,606	0.66	300.66	0.00	0.00	0.00	0.00
9.0	9	9	1,637	13,344	0.69	300.69	0.00	0.00	0.00	0.00
12.0	16	16	2,853	14,981	0.76	300.76	0.00	0.00	0.00	0.00
15.0	24	24	4,347	17,834	0.88	300.88	0.00	0.00	0.00	0.00
18.0	34	34	6,067	22,181	1.04	301.04	0.00	0.00	0.00	0.00
21.0	44	44	7,957	28,248	1.27	301.27	0.00	0.00	0.00	0.00
24.0	55	55	9,954	36,205	1.56	301.56	0.00	0.00	0.00	0.00
27.0	67	67	11,992	46,160	1.89	301.89	0.00	0.00	0.00	0.00
30.0	78	78	14,001	58,152	2.28	302.28	0.00	0.00	0.00	0.00
33.0	88	88	15,916	72,153	2.72	302.72	0.00	0.00	0.00	0.00
36.0	98	98	17,672	88,068	3.20	303.20	0.00	0.00	0.00	0.00
39.0	107	107	19,211	105,740	3.71	303.71	0.00	0.00	0.00	0.00
42.0	114	114	20,482	124,951	4.25	304.25	0.00	0.00	0.00	0.00
45.0	119	119	21,442	145,433	4.81	304.81	0.00	0.00	0.00	0.00
48.0	123	123	22,060	166,875	5.38	305.38	0.00	0.00	0.00	0.00
51.0	124	124	22,314	188,935	5.95	305.95	0.00	0.00	0.00	0.00
54.0	123	123	20,480	211,249	6.51	306.51	9.53	30.77	30.77	0.00
57.0	121	121	16,874	231,729	7.02	307.02	26.87	26.87	32.16	0.00
60.0	116	116	14,890	248,603	7.43	307.43	33.24	33.24	33.24	0.00
63.0	110	110	13,564	263,493	7.79	307.79	34.16	34.16	34.16	0.00
66.0	100	100	11,623	277,057	8.11	308.11	34.97	34.97	34.97	0.00
69.0	92	92	10,081	288,679	8.39	308.39	35.64	35.64	35.64	0.00
72.0	84	84	8,671	298,760	8.63	308.63	36.20	36.20	36.20	0.00
75.0	78	78	7,380	307,431	8.83	308.83	36.68	36.68	36.68	0.00
78.0	72	72	6,199	314,811	9.00	309.00	37.08	37.08	37.08	0.00
81.0	66	66	5,118	321,010	9.14	309.14	37.41	37.41	37.41	0.00
84.0	61	61	4,130	326,129	9.26	309.26	37.68	37.68	37.68	0.00
87.0	56	56	3,225	330,258	9.36	309.36	37.90	37.90	37.90	0.00
90.0	51	51	2,398	333,484	9.43	309.43	38.07	38.07	38.07	0.00
93.0	47	47	1,642	335,882	9.49	309.49	38.19	38.19	38.19	0.00
96.0	44	44	952	337,524	9.52	309.52	38.27	38.27	38.27	0.00
99.0	40	40	321	338,476	9.55	309.55	38.32	38.32	38.32	0.00
102.0	37	37	-255	338,797	9.55	309.55	38.34	38.34	38.34	0.00
105.0	34	34	-779	338,542	9.55	309.55	38.33	38.33	38.33	0.00
108.0	31	31	-1,258	337,763	9.53	309.53	38.29	38.29	38.29	0.00
111.0	29	29	-1,693	336,505	9.50	309.50	38.22	38.22	38.22	0.00
114.0	27	27	-2,088	334,813	9.46	309.46	38.13	38.13	38.13	0.00
117.0	24	24	-2,448	332,724	9.41	309.41	38.03	38.03	38.03	0.00
120.0	22	22	-2,774	330,276	9.36	309.36	37.90	37.90	37.90	0.00
123.0	21	21	-3,069	327,503	9.29	309.29	37.75	37.75	37.75	0.00
126.0	19	19	-3,335	324,434	9.22	309.22	37.59	37.59	37.59	0.00
129.0	18	18	-3,575	321,099	9.15	309.15	37.42	37.42	37.42	0.00
132.0	16	16	-3,792	317,524	9.06	309.06	37.23	37.23	37.23	0.00
135.0	15	15	-3,986	313,732	8.97	308.97	37.02	37.02	37.02	0.00
138.0	14	14	-4,159	309,746	8.88	308.88	36.81	36.81	36.81	0.00
141.0	13	13	-4,314	305,587	8.79	308.79	36.58	36.58	36.58	0.00
144.0	12	12	-4,451	301,273	8.68	308.68	36.34	36.34	36.34	0.00
147.0	11	11	-4,573	296,821	8.58	308.58	36.09	36.09	36.09	0.00
150.0	10	10	-4,679	292,249	8.47	308.47	35.84	35.84	35.84	0.00
153.0	9	9	-4,772	287,570	8.36	308.36	35.57	35.57	35.57	0.00
156.0	8	8	-4,852	282,798	8.25	308.25	35.30	35.30	35.30	0.00
159.0	8	8	-4,920	277,946	8.13	308.13	35.02	35.02	35.02	0.00
162.0	7	7	-4,978	273,026	8.02	308.02	34.73	34.73	34.73	0.00
165.0	7	7	-5,026	268,047	7.90	307.90	34.43	34.43	34.43	0.00
168.0	6	6	-5,065	263,022	7.78	307.78	34.13	34.13	34.13	0.00
171.0	6	6	-5,095	257,957	7.66	307.66	33.82	33.82	33.82	0.00
174.0	5	5	-5,117	252,862	7.53	307.53	33.51	33.51	33.51	0.00
177.0	5	5	-5,132	247,745	7.41	307.41	33.19	33.19	33.19	0.00
180.0	5	5	-5,132	247,745	7.41	307.41	33.19	33.19	33.19	0.00
MAXIMUM VALUES>>	124	124	22,314	338,797	9.55	309.55	38.34	38.34	38.34	0.00

2.4 Ft. Below the Top of Dam. Little & Little PO Box 1448, Raleigh, NC 27602

	Top of Dam					Basin Dimensions					Maximum Capacities					Peak Discharge Data			
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	
	Top	Top			Riser	Top of	Bottom	Sediment	Stormwater	Basin	Maximum	Sediment		25 Yr.	Inflow+	Inflow+			
	Width	Elev:			Ht.	Riser El	Elev	Storage El.	Runoff	Capacity to	Sediment	Storage	Clean Out	Storm El	Outflow	Outflow			
North Basin	15 Ft	312.0	1.5 Ft	4.5 Ft	6.0 Ft	306.0	300.0	303.0	163,920 CuFt	190,920 CuFt	27,000 CuFt	4.25 ft. fr. top	trash rack	307.4	85 CFS	124 CFS			
South Basin	15 Ft	327.0	1.5 Ft	2.3 Ft	8.2 Ft	323.2	310.0	314.0	196,000 CuFt	225,000 CuFt	29,000 CuFt	10 ft. fr. top	trash rack	323.9	60 CFS	88 CFS			

Note: Bottom of South Basin Riser is at El. 315.0, 5 ft. above bottom of basin.

Revised 10-28-94

**Anti-Flotation Calculations for North and South Basins  
Currin Landfill, Durham County, NC**

	E Riser Ht.	Primary Outlet K Riser Dia.	Riser Gauge	B	W	Calculation	Req. Vol. of Concrete	Sq. dimensions for 3' thickness	Imbed Riser 8" into Base Concrete Riser Base	Actual Vol. of Concrete
				Buoyancy in Lbs. per Lin. Ft.	Wt. in Lbs. per Lin. Ft.	Safety Factor = 58.4 (B-W) x Riser Ht				
North BASIN	6.0 Ft	30 In	14 Gauge 30 " C.M.P.	306.3	30.9	(306.3-30.9) x 6	28.29 Cu.Ft.	3.07	3'-3" x 3'-3" x 3'0"	31.69 Cu.Ft.
						58.4				
South BASIN	8.2 Ft	30 In	14 Gauge 30 " C.M.P.	306.3	30.9	(306.3-30.9) x 8.2	38.67 Cu.Ft.	3.59	3'-8" x 3'-8" x 3'0"	40.33 Cu.Ft.
						58.4				

Riser Ht.	Buoyancy (lbs)	Weight of Base @ 2 tons/CuYd	Ratio: Base to Buoyancy
6.0 Ft	1652 lbs	4690 lbs	2.84 to 1
8.2 Ft	2258 lbs	5969 lbs	2.64 to 1

Note: 2 tons/c.y.=148 lb/cu.ft.

U.S. ARMY CORPS OF ENGINEERS  
WILMINGTON DISTRICT

Action ID. \_\_\_\_\_

County Durham

GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION

Property Owner/Agent Currin Bros, Inc. c/o Allen Currin

Address ~~1610~~ 1610 Wolfpack Lane  
Raleigh, N.C. 27609

Telephone No. (919) 876-1138

Size and Location of project (waterbody, road name/number, town, etc.) 62.948 acres on  
W side of Coley Rd. (S.R. 1900), about 2,500 ft. N of  
S.R. 1902, E of Durham, about 1/2 mile W of Durham /  
Wake County line, N.C.

Description of Activity

Construction of sediment basins + filling of less than  
1/3 of an acre of creek channels (no wetlands on site)

Section 404 (Clean Water Act, 33 USC 1344) only.

Section 10 (River and Harbor Act of 1899) only.

Section 404 and Section 10.

26 Regional General Permit or Nationwide Permit Number.

Any violation of the conditions of the Regional General or Nationwide Permit referenced above may subject the permittee to a stop work order, a restoration order, and/or appropriate legal action.

This Department of the Army Regional General/Nationwide Permit verification does not relieve the undersigned permittee of the responsibility to obtain any other required Federal, State, or local approvals/permits. The permittee may need to contact appropriate State and local agencies before beginning work.

By signature below, the permittee certifies an understanding and acceptance of all terms and conditions of this permit.

Property Owner/Authorized Agent Signature Currin Bros. Inc. By: C. Allen Currin

Regulatory Project Manager Signature James B. Monrode

Date May 26, 1994

Expiration Date May 26, 1996

SURVEY PLATS, FIELD SKETCH, WETLAND DELINEATION FORM, ETC., MUST BE ATTACHED TO THE YELLOW (FILE) COPY OF THIS FORM, IF REQUIRED OR AVAILABLE.

**Durham  
City  
County  
Planning  
Department**



101 City Hall Plaza  
Durham, NC 27701  
(919) 560-4137  
Fax 560-4641

March 16, 1994

Mr. Steve Deaton  
6508 Falls of Neuse Road, Suite 100  
Raleigh, NC 27615

Dear Mr. Deaton:

Based upon a letter dated February 28, 1994 from Jim Barber, Eastern Area Engineer of the Division of Solid Waste Management, Department of Environmental Health and Natural Resources, I have reviewed, via a request by Allen Currin, Currin Brothers, Inc., to determine the legality of a potential site for a Land Clearing and Inert Debris (LCID) permit for property located on Coley Road and further described on Tax Map 986, Block 1, Lot 4. This location has been submitted for consideration as a permitted use under the regulations of the Rural District zoning classification in the Durham County Zoning Ordinance prior to January 1, 1994.

Prior to January 1, 1994, a Land Clearing and Inert Debris (LCID) landfill was a permitted use in Rural District under the Durham County Zoning Ordinance. Therefore, since this location on Coley Road was under active consideration before January 1, 1994 for purchase, design, and permitting the Planning Department supports the final permit application conditioned upon State approval for conformance with North Carolina Solid Waste Management Rules (15A NCAC 13); Section .0500 - Disposal Sites, Paragraphs .0563 (Applicability Requirements for Land Clearing/Inert Debris Landfills); .0564 (Siting criteria for Land Clearing/Inert Debris Landfills); .0565 (Application Requirements for Land Clearing/Inert Debris Landfills) and .0566 (Operational Requirements for Land Clearing/Inert Debris Landfills).

Mr. Steve Deaton  
March 16, 1994  
Page 2

For your information, the merged Durham Zoning Ordinance, effective December 31, 1993 at 11:59 p.m. prohibits land clearing/inert debris landfills in the City and County of Durham Watersheds except for Jordan District B and Eno River District B areas.

If I can be of further assistance, please call me at 560-4137.

Sincerely,

Gerald E. Kelley  
Assistant Director

GEK/bd

cc: Jim Barber, Eastern Area Engineer  
Fayetteville Regional Office  
226 Green Street, Suite 601  
Fayetteville, NC 28301

Allen Currin  
Currin Brothers, Inc.  
P. O. Box 547  
Fuquay-Varina, NC 27526

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Parks & Recreation

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
Dr. Phillip K. McKnelly, Director



July 29, 1994

Mr. Andy Otten  
Little & Little  
P.O. Box 1448  
Raleigh, NC 27602

**SUBJECT:** Rare Species and Significant Natural Areas in the  
Proposed Project Area Near Falls Lake in Durham County, NC

Dear Mr. Otten:

The North Carolina Natural Heritage Program does not have records of known rare species, high quality natural communities, or significant natural areas occurring at the proposed project site. To our knowledge, this project area has not been systematically inventoried and we cannot definitively state that rare species or significant natural areas do not occur there.

This project site is located on Rocky Branch which flows into Falls Lake State Park. Because this project site occurs along Rocky Branch, we recommend that erosion and siltation control measures be taken to reduce impacts to Falls Lake.

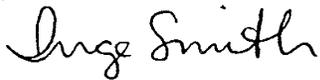
Located adjacent to the northwestern portion of the project site is a parcel of land that belongs to Falls Lake State Park. Also, located less than 0.5 mile north of this site is a significant natural area referred to as Lick Creek Bottomland Forest. This site is a Registered Natural Heritage Area and is considered to be of Regional Significance. Located at this registered area is a population of Cardamine douglassii (Douglass's bittercress) which is significantly rare in North Carolina. Due to its proximity, it is possible that this species may also occur at the project site.

Enclosed is a list of rare species that are known to occur in Durham County. If suitable habitat for any of these species occurs in the project area, then those species may be present at the project site. If it is necessary to be certain that this site does not contain rare species, a field survey would need to be conducted.

Mr. Otten  
Page 2  
July 28, 1994

Please contact me at the address below or call me at (919) 733-7701  
if you have any questions or need further information.

Sincerely,



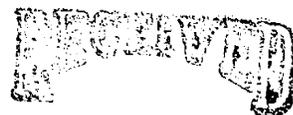
Inge Smith  
Information Specialist  
Natural Heritage Program

/iks

Enclosures

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Parks & Recreation

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
Dr. Philip K. McKnelly, Director



October 13, 1994

OCT 19 1994

Mr. Andy Otten  
Little & Little  
P.O. Box 1448  
Raleigh, NC 27602

LITTLE & LITTLE

SUBJECT: Rare Species and Significant Natural Areas in the  
Proposed Project Area Near Falls Lake in Durham County, NC

Dear Mr. Otten:

The North Carolina Natural Heritage Program answered an information request from you on July 29, 1994 about a project site on Rocky Branch, near Falls Lake State Park. In this response, reference was made to a population of Cardamine douglassii (Douglass's bittercress), a significantly rare plant in North Carolina, that occurs about 0.5 mile from the project site.

Due to this population's proximity to the project site, it is possible that this species may occur at there. This plant usually occurs in bottomlands and rich lower slopes, which apparently are not present at the project site. We do not require that a survey be conducted for this species. However, we do recommend that erosion and siltation control measures be taken to reduce impacts to Rocky Branch and Falls Lake State Park.

Please contact me at the address below or call me at (919) 733-7701 if you have any questions or need further information.

Sincerely,

Inge Smith  
Information Specialist  
Natural Heritage Program

/iks

Enclosures



## North Carolina Department of Cultural Resources

James B. Hunt Jr., Governor  
Betty Ray McCain, Secretary

Division of Archives and History  
William S. Price, Jr., Director

August 3, 1994

J. Andy Otten  
Little & Little  
P.O. Box 1448  
Raleigh, NC 27602

Re: Inert debris landfill, Durham County  
ER 95-7098

Dear Mr. Otten:

Thank you for your letter of July 14, 1994, concerning the above project.

We have conducted a review of the project and are aware of no properties of architectural, historic, or archaeological significance which would be affected by the project. Therefore, we have no comment on the project as currently proposed.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act of 1966 and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at 36 CFR Part 800.

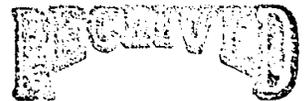
Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

Sincerely,

A handwritten signature in cursive script that reads "David Brook".

David Brook  
Deputy State Historic Preservation Officer

DB:slw



DEC 5 1994

**COUNTY OF DURHAM**  
SEDIMENTATION AND EROSION CONTROL

November 29, 1994

LITTLE & LITTLE

Currin Brothers, Inc.  
P.O. Box 547  
Fuquay-Varina, NC 27526  
Attn: Glenn R. Currin

Dear Mr. Currin:

RE: **LETTER OF APPROVAL**  
Project Name: LCID (Currin 2)  
JCN: 1747-08  
Submitted By: Little & Little  
Date Submitted: 11/21/94  
New Submittal ( ) Revised (X)

This office has reviewed the subject Sedimentation & Erosion Control Plan. We find the plan to be acceptable and hereby issue this letter of approval (if any stipulations or recommendations are applicable, a list is enclosed and is incorporated as a part of this letter of approval).

Please be advised that a copy of the approved plan must be on file at the job site, and a land disturbing permit must be obtained and prominently displayed. Pursuant to G.S. 113A-61(d) and Section 19 (a) and (c) of the Sedimentation and Erosion Control Ordinance you are hereby notified that the Sedimentation and Erosion Control Office has the right to inspect the site over the life of the project to insure compliance with the approved plan and ordinance.

The Durham County and City Sedimentation and Erosion Control program is performance oriented, requiring protection of the natural resources and adjoining properties. If following the commencement of this project it is determined that the Sedimentation & Erosion Control plan is inadequate to meet the requirements of the Sedimentation and Erosion Control Ordinance, this office may require revisions in the plan and its implementation to insure compliance with the Ordinance.

Recognizing the desirability of early coordination of Sedimentation Control, we believe that it would be beneficial if a preconstruction conference can be arranged to discuss the approved plan for this project. Please contact this office and let us know the date of construction start-up and the date of the preconstruction conference so that we may try to attend.

We look forward to working with you on this project.

Sincerely,

Thomas R. Kagarise  
Erosion Control Officer

PLAN REVIEW COMMENTS

Project Name: LCID Landfill (Curran 2) Job Number: 1747-08

Reviewed By: Thomas R. Kacarise For Signature Of: Same

New Submittal ( ) Revised (  ) Approved (  ) Disapproved ( )

\*\*\*\*\*

Reason for Disapproval ( ) Stipulations or Conditions (  )

Any Stipulation or Condition stated below are hereby incorporated by reference into the approved plan as if fully set out therein.

1. Permit fee will be credited \$136 thus:  $43.74 \text{ ac} \times \$32/\text{ac} = \$1400$  correct fee. Total paid  $\$1536 - \$1400 = \$136$ .
2. The permit fee is  $(43.74 \text{ ac} \times \$230/\text{ac}) - \$136 = \$9924$  (Phase 1)
3. The performance bond amount is \$96,667.
4. Please submit a Zoning Compliance Sign-off Form from the Planning Department.

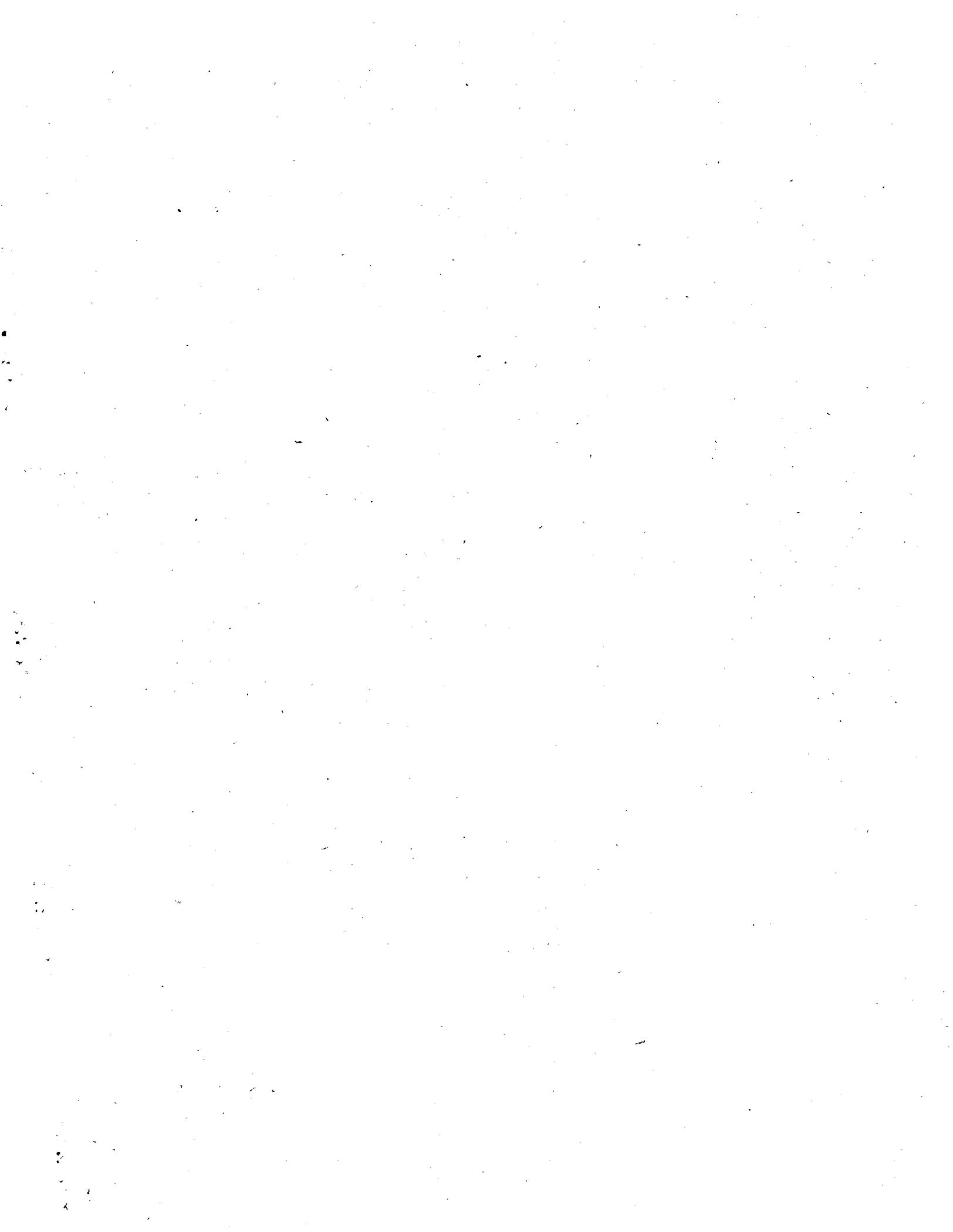
\*\*\*\*\*

Recommendations and/or Comments:

Any Recommendations and/or Comments stated below are hereby incorporated by reference into the approved plan as if fully set out therein.

Submit items 2, 3 & 4 to obtain a land disturbing permit.

Enclosed is a Notice of Intent requesting coverage under the Construction Activities General NPDES Permit NCG010000 stormwater Discharges, which must be submitted per the instructions.



SUPPLEMENTAL STORMWATER CALCULATIONS

**LAND CLEARING AND  
INERT DEBRIS LANDFILL**

DURHAM COUNTY, NORTH CAROLINA

RECEIVED

SEP 6 1995

PLANNING DIVISION

**APPROVED**

DIVISION OF SOLID WASTE MANAGEMENT

DATE 3/28/95 BY JDS

RAL. CENTRAL FILE COPY  
32-I (DURHAM CNTY)

AUGUST 1994

LITTLE & LITTLE

Ditch #	Drain Area	Rational 'C', or TR-55 CN	Peak Flow	C-L Slope	RIPRAP LINING			Construction Dimensions for Triangular 'V' Ditch with Riprap Lining			Reference	
					Depth of Flow	Max. Vel.	'n'	Tract. Force	Ht. x Top W	Side Slope		Lining
#1	9.66 Ac.	0.3 'C'	25.7 C.F.S.	8.6%	1.19 Ft.	6.0 F.P.S.	0.049	6.4 Lb/Sq.Ft.	1.5' x 9'	3 to 1	NCDOT Class B Riprap 22" min. thickness	Install 1 permanent rock check dam
#5	4.62 Ac.	0.3 'C'	12.3 C.F.S.	16.6%	0.83 Ft.	5.9 F.P.S.	0.055	8.6 Lb/Sq.Ft.	1.25' x 7.5'	3 to 1	NCDOT Class B Riprap 22" min. thickness	Install 2 permanent rock check dams
#7	3.78 Ac.	0.3 'C'	10.1 C.F.S.	10.7%	0.84 Ft.	4.8 F.P.S.	0.055	5.6 Lb/Sq.Ft.	1.25' x 7.5'	3 to 1	NCDOT Class B Riprap 22" min. thickness	Install 1 permanent rock check dam
#8	2.2 Ac.	0.3 'C'	10.0 C.F.S.	10.0%	0.85 Ft.	4.7 F.P.S.	0.055	5.3 Lb/Sq.Ft.	1.25' x 7.5'	3 to 1	NCDOT Class B Riprap 22" min. thickness	Install 1 permanent rock check dam
#10	9.83 Ac.	0.4 'C'	29.8 C.F.S.	5.3%	1.36 Ft.	5.4 F.P.S.	0.047	4.5 Lb/Sq.Ft.	2' x 12'	3 to 1	NCDOT Class B Riprap 22" min. thickness	



# S.C.S. Soil Categories List

Currin Landfill, Durham County, North Carolina

August 1, 1994

Source: Durham County Soil Survey: U.S.D.A. Soil Conservation Service

Map Symbol	Soil Name	Slope Range	Hydrologic Soil Group
<u>On Site</u>			
CrB	Creedmoor sandy loam	2-6%	C
CrC	Creedmoor sandy loam	6-10%	C
PfC	Pinkston fine sandy loam	2-10%	B
PfE	Pinkston fine sandy loam	10-25%	B
WsE	White Store sandy loam	10-25%	D

# Rainfall Data/ Land Cover

Currin Landfill,  
Rainfall Data and Land Cover Types

Durham County, North Carolina  
August 1, 1994

RAINFALL DATA (map interpolated)

Source: Soil Conservation Service North Carolina Rainfall Data Maps (Rev. 6-70)

<u>24 hr. Storm</u>	<u>Rainfall in inches</u>
1 Year	2.95"
2 Year	3.56"
5 Year	4.68"
10 Year	5.51"
25 Year	6.33"
50 Year	7.14"
100 Year	7.93"

LAND COVER TYPES with CN and C factors.

<u>Description</u>	<u>Soil Group</u>	<u>S.C.S. CN</u>	<u>Rational C</u>
Woods (good)	B	55	0.22
Woods (good)	C	70	0.30
Woods (good)	D	77	0.40
Meadow	B	58	0.24
Meadow	C	71	0.32
Meadow	D	78	0.45
Grass Berms, Ditches, Seeded Areas	B	65	0.28
Grass Berms, Ditches, Seeded Areas	C	77	0.40
Grass Berms, Ditches, Seeded Areas	D	82	0.76
New graded areas (no vegetation)	B	86	0.80
New graded areas (no vegetation)	C	91	0.90
New graded areas (no vegetation)	D	94	0.95
Stone and dirt roads (excl R.O.W.)	B	86	0.80
Stone and dirt roads (excl R.O.W.)	C	90	0.88
Stone and dirt roads (excl R.O.W.)	D	92	0.91
Paved roads (incl R.O.W.)	B	89	0.86
Paved roads (incl R.O.W.)	C	92	0.91
Paved roads (incl R.O.W.)	D	93	0.93
Ponds	all	98	0.98
Roofs, Asphalt surfaces	all	98	0.98

CN Factors determined from Tables 2-2a to 2-2C, Soil Conservation Service T.R. 55, June 1986 edition.  
Rational C factors interpolated from multiple sources.

**PEAK DISCHARGE SUMMARY**

<b>JOB:</b> Currin Landfill				H.P.
<b>DRAINAGE AREA NAME:</b> SOUTH BASIN				30-July-94
COVER DESCRIPTION	SOIL NAME	GROUP A,B,C,D?	CN from TABLE 2-2	AREA (In acres)
Ponds		-	98	1.60 Ac.
Established Meadow		B	58	8.81 Ac.
Established Meadow		C	71	2.64 Ac.
Established Meadow		D	78	
Woods		B	55	4.31 Ac.
Woods		C	70	1.80 Ac.
Woods		D	77	
Paved Roads w/ROW		C	92	0.50 Ac.
Paved Roads w/ROW		D	93	0.85 Ac.
Crushed Stone Roads		B	86	0.79 Ac.
Unvegetated, disturbed		B	86	5.20 Ac.
Unvegetated, disturbed		C	91	
<b>AREA SUBTOTALS:</b>				<b>26.50 Ac.</b>
<b>Total Area in Acres =</b>	<b>26.50 Ac.</b>	<b>Total Sheet</b>	<b>Total Shallow</b>	<b>Total Channel</b>
<b>Weighted CN =</b>	<b>70</b>	<b>Flow=</b>	<b>Flow=</b>	<b>Flow =</b>
<b>Time Of Concentration =</b>	<b>0.58 Hrs.</b>	<b>0.57 Hrs.</b>	<b>0.00 Hrs.</b>	<b>0.01 Hrs.</b>
<b>Pond Factor =</b>	<b>1</b>	<b>RAINFALL TYPE II</b>		
<b>STORM</b>	<b>Precipitation (P) Inches</b>	<b>Runoff (Q)</b>	<b>Op, PEAK DISCHARGE</b>	<b>TOTAL STORM Volumes</b>
1 Year	3.0 In.	0.7 In.	11.6 CFS	66,055 Cu. Ft.
2 Year	3.6 In.	1.0 In.	18.5 CFS	100,557 Cu. Ft.
5 Year	4.7 In.	1.8 In.	34 CFS	173,374 Cu. Ft.
10 Year	5.5 In.	2.4 In.	46 CFS	232,983 Cu. Ft.
25 Year	6.3 In.	3.1 In.	60 CFS	295,253 Cu. Ft.
50 Year	7.1 In.	3.7 In.	74 CFS	359,295 Cu. Ft.
100 Year	7.9 In.	4.4 In.	88 CFS	423,661 Cu. Ft.

<b>PEAK DISCHARGE SUMMARY</b>					
<b>JOB:</b> Currin Landfill					H.P.
<b>DRAINAGE AREA NAME:</b> SOUTH BASIN					30-July-94
<b>COVER DESCRIPTION</b>	<b>SOIL NAME</b>	<b>GROUP A,B,C,D?</b>	<b>CN from TABLE 2-2</b>	<b>AREA (In acres)</b>	
Ponds		-	98	1.60 Ac.	
Established Meadow		B	58	8.81 Ac.	
Established Meadow		C	71	2.64 Ac.	
Established Meadow		D	78		
Woods		B	55	4.31 Ac.	
Woods		C	70	1.80 Ac.	
Woods		D	77		
Paved Roads w/ROW		C	92	0.50 Ac.	
Paved Roads w/ROW		D	93	0.85 Ac.	
Crushed Stone Roads		B	86	0.79 Ac.	
Unvegetated, disturbed		B	86	5.20 Ac.	
Unvegetated, disturbed		C	91		
<b>AREA SUBTOTALS:</b>				<b>26.50 Ac.</b>	
<b>Total Area in Acres =</b>	<b>26.50 Ac.</b>	<b>Total Sheet</b>	<b>Total Shallow</b>	<b>Total Channel</b>	
<b>Weighted CN =</b>	<b>70</b>	<b>Flow=</b>	<b>Flow=</b>	<b>Flow =</b>	
<b>Time Of Concentration =</b>	<b>0.58 Hrs.</b>	<b>0.57 Hrs.</b>	<b>0.00 Hrs.</b>	<b>0.01 Hrs.</b>	
<b>Pond Factor =</b>	<b>1</b>	<b>RAINFALL TYPE II</b>			
<b>STORM</b>	<b>Precipitation (P) Inches</b>	<b>Runoff (Q)</b>	<b>Qp, PEAK DISCHARGE</b>	<b>TOTAL STORM Volumes</b>	
1 Year	3.0 In.	0.7 In.	11.6 CFS	66,055 Cu. Ft.	
2 Year	3.6 In.	1.0 In.	18.5 CFS	100,557 Cu. Ft.	
5 Year	4.7 In.	1.8 In.	34 CFS	173,374 Cu. Ft.	
10 Year	5.5 In.	2.4 In.	46 CFS	232,983 Cu. Ft.	
25 Year	6.3 In.	3.1 In.	60 CFS	295,253 Cu. Ft.	
50 Year	7.1 In.	3.7 In.	74 CFS	359,295 Cu. Ft.	
100 Year	7.9 In.	4.4 In.	88 CFS	423,661 Cu. Ft.	

**Currin Landfill**  
8/1/94

**VOLUME ESTIMATES: South Basin Storage**

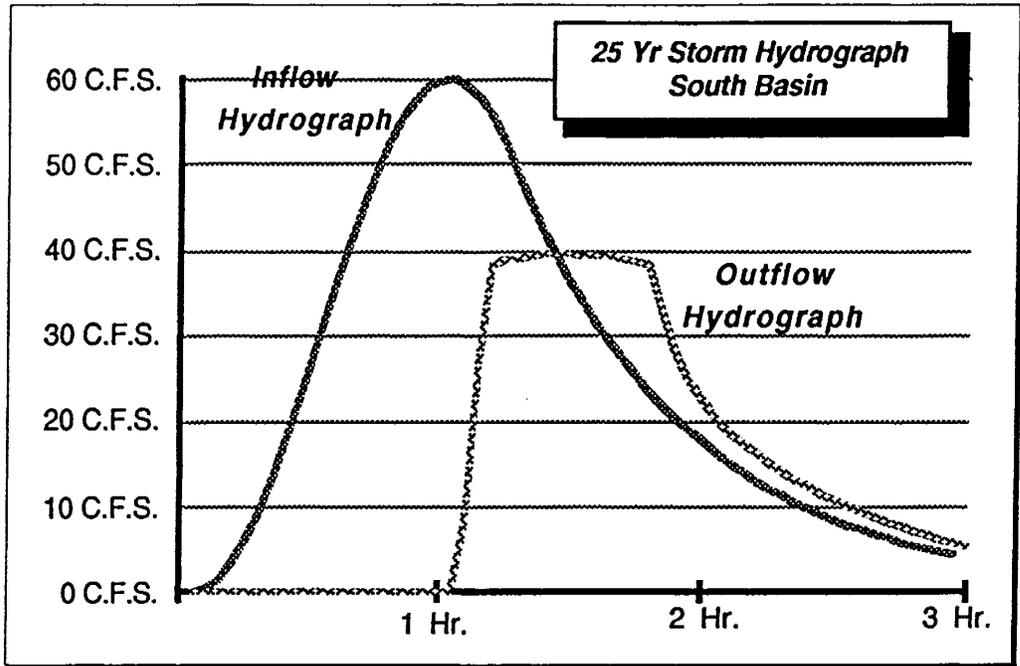
STAGE/ ELEV.	CONTOUR INCHES	AREA SQ. FEET	INCREMENT. STORAGE	CUMULATIVE STORAGE	MAP SCALE
0 FT.			0		1 INCH = 100 FT.
EL. 310.0	0.252	2,520		0	
5 FT.			22,331		SEDIMENT or Perm. WATER INITIAL STORAGE
EL. 315	0.64125	6,413		22,331	
10 FT.			42,681		
EL. 320	1.066	10,660		65,013	
15 FT.			77,838		9,360
EL. 325	2.0475	20,475		142,850	CU. FT.
20 FT.			124,406		Basin Stage 3.2 FT.
EL. 330	2.92875	29,288		267,256	
					STORAGE TO Max. Elev. 1,999,077 GALLONS
					FLOOD STORAGE 257,896 CuFt

**Notes:** Top of dam is at El. 327.0

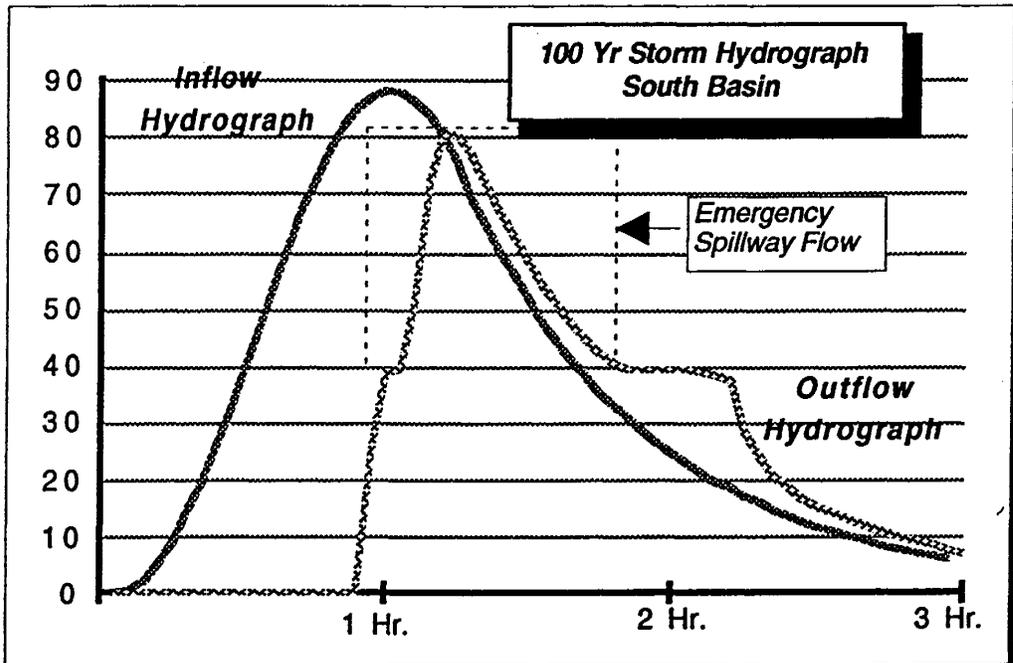
STAGE/STORAGE FUNCTION				Linear Regression	
STAGE	STORAGE	STAGE	STORAGE	Function	
0	0	<b>NATURAL LOGARITHMS</b>			
5	22,331	1.60943791	10.01374232	<b>b</b>	ln Ks
10	65,013	2.30258509	11.08233484	<b>1.7755</b>	7.0973
15	142,850	2.7080502	11.86955041	<b>1/b</b>	<b>Ks</b>
20	267,256	2.99573227	12.49596321	<b>0.5632</b>	<b>1208.6897</b>

## 25 and 100 Year Hydrographs for the South Basin

Currin Brothers South Basin			Top of Dam Primary Outlets: El. 327.00		30 In. Riser El. 323.20 24 In. Barrel El. 315.00		Spillway Width=20 Ft.		
Time minutes	FLOW	TOTAL INFLOW	Accumulate Storage Cu	Stage Feet	Elevation	TOTAL	Outflow: Riser/Barrel	CMP-Barrel	Spillway Inv. El. 325.50
MAXIMUM VALUES>>									
180.0	60	60	10,783	148,842	16.05	325.05	39.44	39.44	0.00
2.0 Ft. Below the Top of Dam.									



Currin Brothers South Basin			Top of Dam Primary Outlets: El. 327.00		30 In. Riser El. 323.20 24 In. Barrel El. 315.00		Spillway Width=20 Ft.		
Time minutes	FLOW	TOTAL INFLOW	Accumulate Storage Cu	Stage Feet	Elevation	TOTAL	Outflow: Riser/Barrel	CMP-Barrel	Spillway Inv. El. 325.50
MAXIMUM VALUES>>									
180.0	88	88	15,239	171,211	16.28	326.28	80.71	39.60	41.21
0.7 Ft. Below the Top of Dam.									





100 YEAR STORM ROUTING		Curran Brothers South Basin			Top of Dam = El. 327.00		Primary Outlet: 1 Ris. Barrel		30 in. Ris. 24 in. Barrel		El. 323.20 El. 315.00		Spillway Width=20 Ft.	
Storm volume by SCS:		Time (minutes)	OVERLAND FLOW	TOTAL INFLOW	INCREMENTAL Storage-CuFt	Accumulated Storage CuFt	Stage Feet	Elevation	TOTAL OUTFLOW	Outflow: Ris. Barrel	Max. Outflow: CMP-Barrel	Spillway Inv. El.		
Q=(P-0.2S)/2/(P+0.8S)		0.0	0	0	0	9,350	3.17	313.17	0.00	0.00	0.00	325.50		
V=(Q/12)*(Ac.*43560) in. Cu.Ft.		3.0	1	1	105	9,350	3.17	313.17	0.00	0.00	0.00	0.00		
Watershed Area = 28.56 Acres		6.0	2	2	418	9,465	3.19	313.19	0.00	0.00	0.00	0.00		
100 Year Runoff = 4.40 in.		9.0	5	5	931	9,884	3.27	313.27	0.00	0.00	0.00	0.00		
100 Year Storm Volume = 423,661 Cu. Ft.		12.0	9	9	1,630	10,815	3.44	313.44	0.00	0.00	0.00	0.00		
100 Year Qp by SCS in CFS = 88.0 CFS		15.0	14	14	2,496	12,445	3.72	313.72	0.00	0.00	0.00	0.00		
Tp=Vol/(1.38Qp*60) in min		18.0	19	19	3,506	14,940	4.12	314.12	0.00	0.00	0.00	0.00		
57.73 Minutes		21.0	26	26	4,633	18,446	4.64	314.64	0.00	0.00	0.00	0.00		
TIME INCR IN SECONDS and MINUTES		24.0	32	32	5,848	23,080	5.27	315.27	0.00	0.00	0.00	0.00		
180 Seconds		27.0	40	40	7,118	28,928	5.98	315.98	0.00	0.00	0.00	0.00		
3.0 Minutes		30.0	47	47	8,410	36,046	6.77	316.77	0.00	0.00	0.00	0.00		
Stage-Storage Function:		33.0	54	54	9,688	44,456	7.62	317.62	0.00	0.00	0.00	0.00		
S=KsZ^b		36.0	61	61	10,920	54,144	8.51	318.51	0.00	0.00	0.00	0.00		
Z=(S/Ks)^1/b		39.0	67	67	12,071	65,084	9.44	319.44	0.00	0.00	0.00	0.00		
Ks=		42.0	73	73	13,112	77,135	10.39	320.39	0.00	0.00	0.00	0.00		
1205.6697		45.0	78	78	14,015	90,247	11.35	321.35	0.00	0.00	0.00	0.00		
b		48.0	82	82	14,756	104,262	12.31	322.31	0.00	0.00	0.00	0.00		
1.7745		51.0	85	85	15,239	119,019	13.26	323.26	0.42	0.42	35.33	0.00		
1/b		54.0	87	87	11,004	134,256	14.20	324.20	25.96	25.96	37.53	0.00		
0.563221628		57.0	88	88	8,669	154,262	14.84	324.84	38.98	38.98	38.98	0.00		
Stage (Z) = 0 at Elev. ...		60.0	88	88	6,448	162,750	15.34	325.34	39.50	39.50	39.50	0.00		
310.0		63.0	86	86	2,013	189,198	16.17	326.17	72.43	72.43	39.50	10.88		
Runoff Calculation (Fr. Rainfall)		66.0	84	84	-1,212	167,680	16.09	326.09	66.58	66.58	39.50	32.93		
Enter watershed's weighted CN below:		69.0	80	80	-1,186	166,468	16.02	326.02	62.18	62.18	39.50	41.21		
7.0		72.0	75	75	-859	171,079	16.27	326.27	80.71	80.71	39.50	41.21		
Enter 24 Hr. rainfall for storm event:		75.0	69	69	-1,295	170,221	16.23	326.23	76.56	76.56	39.50	40.65		
7.9 in.		78.0	64	64	-1,246	168,926	16.16	326.16	71.36	71.36	39.50	37.06		
S = 4.28		81.0	60	60	-1,212	167,680	16.09	326.09	66.58	66.58	39.50	31.86		
Runoff = 4.40 in.		84.0	56	56	-1,186	166,468	16.02	326.02	62.18	62.18	39.50	27.08		
		87.0	52	52	-1,167	165,281	15.96	325.96	58.12	58.12	39.50	22.68		
		90.0	48	48	-1,156	164,114	15.89	325.89	54.39	54.39	39.50	18.62		
		93.0	45	45	-1,154	162,958	15.83	325.83	50.96	50.96	39.50	14.89		
		96.0	41	41	-1,163	161,804	15.77	325.77	47.85	47.85	39.50	11.46		
		99.0	38	38	-1,190	160,641	15.70	325.70	45.05	45.05	39.50	8.35		
		102.0	36	36	-1,242	159,451	15.64	325.64	42.61	42.61	39.50	5.55		
		105.0	33	33	-1,341	158,209	15.57	325.57	40.61	40.61	39.50	3.11		
		108.0	31	31	-1,565	156,868	15.50	325.50	39.50	39.50	39.50	0.00		
		111.0	29	29	-1,960	155,302	15.41	325.41	39.50	39.50	39.50	0.00		
		114.0	27	27	-2,326	153,343	15.30	325.30	39.50	39.50	39.50	0.00		
		117.0	25	25	-2,666	151,017	15.17	325.17	39.50	39.50	39.50	0.00		
		120.0	23	23	-2,958	148,350	15.02	325.02	39.36	39.36	39.36	0.00		
		123.0	21	21	-3,185	145,322	14.85	324.85	38.99	38.99	38.99	0.00		
		126.0	20	20	-3,384	142,208	14.66	324.66	38.59	38.59	38.59	0.00		
		129.0	18	18	-3,391	138,823	14.47	324.47	37.21	37.21	38.14	0.00		
		132.0	17	17	-2,102	135,433	14.28	324.28	28.74	28.74	37.69	0.00		
		135.0	16	16	-1,436	133,331	14.14	324.14	23.83	23.83	37.40	0.00		
		138.0	15	15	-1,064	131,896	14.05	324.05	20.64	20.64	37.20	0.00		
		141.0	14	14	-843	130,832	13.99	323.99	18.36	18.36	37.06	0.00		
		144.0	13	13	-704	129,989	13.94	323.94	16.62	16.62	36.94	0.00		
		147.0	12	12	-612	129,284	13.90	323.90	15.20	15.20	36.84	0.00		
		150.0	11	11	-548	128,672	13.86	323.86	14.01	14.01	36.75	0.00		
		153.0	10	10	-500	128,124	13.83	323.83	12.96	12.96	36.68	0.00		
		156.0	9	9	-462	127,625	13.80	323.80	12.03	12.03	36.60	0.00		
		159.0	9	9	-432	127,162	13.77	323.77	11.18	11.18	36.54	0.00		
		162.0	8	8	-406	126,730	13.74	323.74	10.41	10.41	36.48	0.00		
		165.0	8	8	-388	126,325	13.72	323.72	9.71	9.71	36.42	0.00		
		168.0	7	7	-362	125,942	13.69	323.69	9.05	9.05	36.36	0.00		
		171.0	7	7	-344	125,579	13.67	323.67	8.45	8.45	36.31	0.00		
		174.0	6	6	-326	125,236	13.65	323.65	7.89	7.89	36.26	0.00		
		177.0	6	6	-310	124,909	13.63	323.63	7.37	7.37	36.21	0.00		
MAXIMUM VALUES>>		180.0	88	88	15,239	171,211	16.28	326.28	80.71	80.71	39.50	41.21		

<b>PEAK DISCHARGE SUMMARY</b>				
<b>JOB:</b> Currin Landfill			<b>H.P.</b>	
<b>DRAINAGE AREA NAME:</b> NORTH BASIN			<b>30-July-94</b>	
<b>COVER DESCRIPTION</b>	<b>SOIL NAME</b>	<b>GROUP A,B,C,D?</b>	<b>CN from TABLE 2-2</b>	<b>AREA (In acres)</b>
Ponds		-	98	1.60 Ac.
Established Meadow		B	58	12.70 Ac.
Established Meadow		C	71	4.34 Ac.
Established Meadow		D	78	5.51 Ac.
Crushed Stone Roads		B	86	0.44 Ac.
Crushed Stone Roads		D	92	0.21 Ac.
Paved Roads w/ROW		C	92	
Paved Roads w/ROW		D	93	
Unvegetated, disturbed		B	86	6.90 Ac.
Unvegetated, disturbed		C	91	
<b>AREA SUBTOTALS:</b>				<b>31.70 Ac.</b>
<b>Total Area In Acres =</b>	<b>31.70 Ac.</b>	<b>Total Sheet</b>	<b>Total Shallow</b>	<b>Total Channel</b>
<b>Weighted CN =</b>	<b>72</b>	<b>Flow=</b>	<b>Flow=</b>	<b>Flow =</b>
<b>Time Of Concentration =</b>	<b>0.48 Hrs.</b>	<b>0.43 Hrs.</b>	<b>0.04 Hrs.</b>	<b>0.01 Hrs.</b>
<b>Pond Factor =</b>	<b>1</b>	<b>RAINFALL TYPE II</b>		
<b>STORM</b>	<b>Precipitation (P) Inches</b>	<b>Runoff (Q)</b>	<b>Qp, PEAK DISCHARGE</b>	<b>TOTAL STORM Volumes</b>
1 Year	3.0 In.	0.8 In.	17.8 CFS	89,582 Cu. Ft.
2 Year	3.6 In.	1.2 In.	27.7 CFS	133,522 Cu. Ft.
5 Year	4.7 In.	2.0 In.	49 CFS	224,901 Cu. Ft.
10 Year	5.5 In.	2.6 In.	67 CFS	298,905 Cu. Ft.
25 Year	6.3 In.	3.3 In.	85 CFS	375,731 Cu. Ft.
50 Year	7.1 In.	3.9 In.	104 CFS	454,373 Cu. Ft.
100 Year	7.9 In.	4.6 In.	124 CFS	533,132 Cu. Ft.

H.P.

**Currin Landfill**  
8/1/94

**VOLUME ESTIMATES: North Basin Storage**

STAGE/ ELEV.	CONTOUR INCHES	AREA SQ. FEET	INCREMENT. STORAGE	CUMULATIVE STORAGE	MAP SCALE
0 FT.			0		1 INCH = 100 FT.
EL. 300.0	0.72	7,200		0	
5 FT.			60,750		SEDIMENT or Perm. WATER INITIAL STORAGE
EL. 305	1.71	17,100		60,750	
10 FT.			116,750		
EL. 310	2.96	29,600		177,500	12,420 CU. FT.
15 FT.			190,250		
EL. 315	4.65	46,500		367,750	Basin Stage 1.9 FT.
					STORAGE TO Max. Elev. 2,750,770 GALLONS
					FLOOD STORAGE 355,330 CuFt

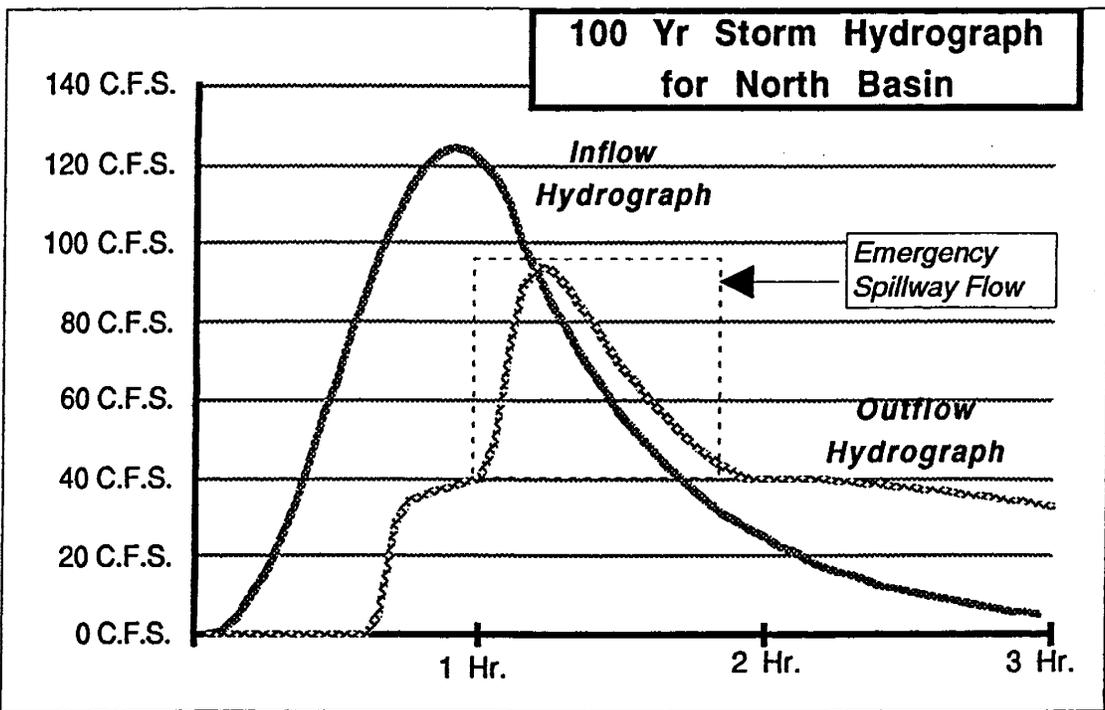
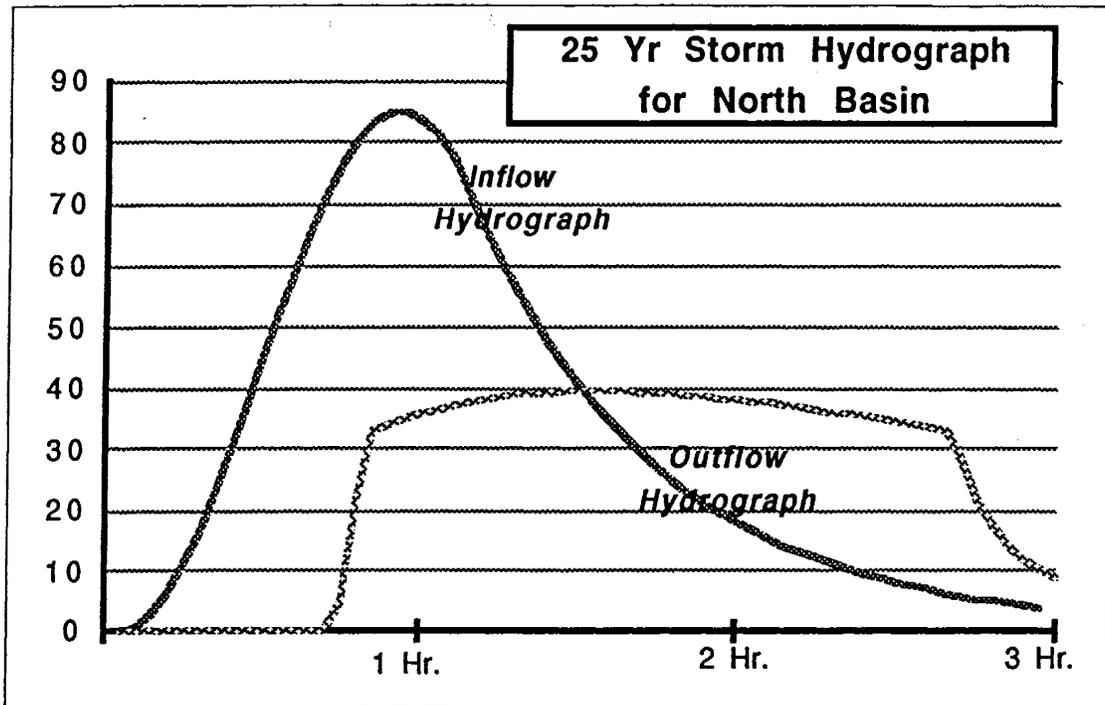
**Notes:** Top of dam is at El. 312.0

STAGE/STORAGE FUNCTION				Linear Regression	
STAGE	STORAGE	STAGE	STORAGE	Function	
0	0	<b>NATURAL LOGARITHMS</b>			
5	60,750	1.60943791	11.01452236	<b>b</b>	ln Ks
10	177,500	2.30258509	12.08672589	<b>1.6291</b>	8.3772
15	367,750	2.7080502	12.81515864	<b>1/b</b>	<b>Ks</b>
				<b>0.6138</b>	<b>4347.0098</b>

## 25 and 100 Year Hydrographs for the North Basin

CutNo: B0606 North Basin	Top of Dam Primary Outlet El: 312.00	30.00 Rise El: 300.00	Spillway Width=20.00 Ft
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Time (minutes)	FLOW	TOTAL INFLOW	Accumulate Storage Cu	Stage Feet	Elevation	TOTAL	Outflow: Riser/Barrel	CMP-Barrel	Spillway Inv. El.	
<b>MAXIMUM VALUES&gt;&gt;</b>	160.0	85	13,001	184,725	8.98	308.98	39.31	39.31	39.31	0.00
2.0 Ft. Below the Top of Dam.										



25 YEAR STORM ROUTING		Curtin Brothers		Top of Dam		Primary Outlet		30 in. Riser		EL. 306.00		Spillway	
Storm volume by SCS:		North Basin		EL. 312.00		1 Riser/Barrel		24 in. Barrel		EL. 300.00		Width=20 Ft.	
Time (minutes)	OVERLAND FLOW	TOTAL INFLOW	INCREMENTAL Storage-CuFt	Accumulated Storage CuFt	Stage Feet	Elevation	TOTAL OUTFLOW	OUTFLOW Riser/Barrel	Max. Outflow: CMP-Barrel	Spillway Inv. EL. 310.50			
0.0	0	0	0	12,420	1.90	301.90	0.00	0.00	0.00	0.00			
3.0	1	1	122	12,420	1.90	301.90	0.00	0.00	0.00	0.00			
6.0	3	3	486	12,542	1.92	301.92	0.00	0.00	0.00	0.00			
9.0	6	6	1,079	13,028	1.96	301.96	0.00	0.00	0.00	0.00			
12.0	10	10	1,882	14,107	2.06	302.06	0.00	0.00	0.00	0.00			
15.0	16	16	2,870	15,990	2.22	302.22	0.00	0.00	0.00	0.00			
18.0	22	22	4,011	18,860	2.46	302.46	0.00	0.00	0.00	0.00			
21.0	29	29	5,269	22,871	2.77	302.77	0.00	0.00	0.00	0.00			
24.0	37	37	6,603	28,140	3.15	303.15	0.00	0.00	0.00	0.00			
27.0	44	44	7,970	34,743	3.68	303.68	0.00	0.00	0.00	0.00			
30.0	52	52	9,327	42,714	4.07	304.07	0.00	0.00	0.00	0.00			
33.0	59	59	10,631	52,041	4.59	304.59	0.00	0.00	0.00	0.00			
36.0	66	66	11,839	62,672	5.14	305.14	0.00	0.00	0.00	0.00			
39.0	72	72	12,913	74,511	5.72	305.72	0.00	0.00	0.00	0.00			
42.0	77	77	13,001	87,423	6.31	306.31	4.54	4.54	30.21	0.00			
45.0	81	81	10,694	100,424	6.87	306.87	21.28	21.28	31.77	0.00			
48.0	83	83	9,085	111,119	7.31	307.31	32.94	32.94	32.94	0.00			
51.0	85	85	9,169	120,203	7.67	307.67	33.87	33.87	33.87	0.00			
54.0	85	85	9,018	129,373	8.03	308.03	34.75	34.75	34.75	0.00			
57.0	84	84	8,632	138,390	8.37	308.37	35.58	35.58	35.58	0.00			
60.0	81	81	8,023	147,023	8.68	308.68	36.34	36.34	36.34	0.00			
63.0	77	77	7,208	155,046	8.97	308.97	37.01	37.01	37.01	0.00			
66.0	71	71	5,987	162,254	9.22	309.22	37.60	37.60	37.60	0.00			
69.0	65	65	4,910	166,241	9.43	309.43	38.07	38.07	38.07	0.00			
72.0	60	60	3,927	173,150	9.60	309.60	38.45	38.45	38.45	0.00			
75.0	56	56	3,029	177,077	9.73	309.73	38.74	38.74	38.74	0.00			
78.0	51	51	2,211	180,106	9.84	309.84	38.97	38.97	38.97	0.00			
81.0	47	47	1,464	182,317	9.91	309.91	39.13	39.13	39.13	0.00			
84.0	44	44	783	183,780	9.96	309.96	39.24	39.24	39.24	0.00			
87.0	40	40	162	184,563	9.98	309.98	39.29	39.29	39.29	0.00			
90.0	37	37	-403	184,725	9.99	309.99	39.31	39.31	39.31	0.00			
93.0	34	34	-917	184,322	9.98	309.98	39.28	39.28	39.28	0.00			
96.0	32	32	-1,384	183,405	9.95	309.95	39.21	39.21	39.21	0.00			
99.0	29	29	-1,807	182,022	9.90	309.90	39.11	39.11	39.11	0.00			
102.0	27	27	-2,180	180,215	9.84	309.84	38.98	38.98	38.98	0.00			
105.0	25	25	-2,536	178,025	9.77	309.77	38.81	38.81	38.81	0.00			
108.0	23	23	-2,848	175,489	9.68	309.68	38.62	38.62	38.62	0.00			
111.0	21	21	-3,129	172,641	9.58	309.58	38.41	38.41	38.41	0.00			
114.0	19	19	-3,380	169,512	9.48	309.48	38.17	38.17	38.17	0.00			
117.0	18	18	-3,604	166,132	9.36	309.36	37.90	37.90	37.90	0.00			
120.0	16	16	-3,803	162,528	9.23	309.23	37.62	37.62	37.62	0.00			
123.0	15	15	-3,979	158,725	9.10	309.10	37.31	37.31	37.31	0.00			
126.0	14	14	-4,133	154,746	8.96	308.96	36.99	36.99	36.99	0.00			
129.0	13	13	-4,268	150,613	8.81	308.81	36.64	36.64	36.64	0.00			
132.0	12	12	-4,384	146,345	8.66	308.66	36.28	36.28	36.28	0.00			
135.0	11	11	-4,482	141,961	8.50	308.50	35.90	35.90	35.90	0.00			
138.0	10	10	-4,564	137,479	8.33	308.33	35.50	35.50	35.50	0.00			
141.0	9	9	-4,631	132,915	8.16	308.16	35.08	35.08	35.08	0.00			
144.0	9	9	-4,684	128,284	7.99	307.99	34.65	34.65	34.65	0.00			
147.0	8	8	-4,724	123,600	7.81	307.81	34.20	34.20	34.20	0.00			
150.0	7	7	-4,752	118,875	7.62	307.62	33.73	33.73	33.73	0.00			
153.0	7	7	-4,767	114,124	7.43	307.43	33.25	33.25	33.25	0.00			
156.0	6	6	-4,772	109,357	7.24	307.24	32.75	32.75	32.75	0.00			
159.0	6	6	-3,994	104,585	7.05	307.05	27.94	27.94	32.23	0.00			
162.0	5	5	-2,922	100,591	6.88	306.88	21.54	21.54	31.79	0.00			
165.0	5	5	-2,209	97,669	6.76	306.76	17.17	17.17	31.45	0.00			
168.0	5	5	-1,718	95,459	6.66	306.66	14.06	14.06	31.19	0.00			
171.0	4	4	-1,369	93,741	6.59	306.59	11.77	11.77	30.99	0.00			
174.0	4	4	-1,115	92,372	6.53	306.53	10.03	10.03	30.82	0.00			
177.0	4	4	-826	91,256	6.48	306.48	8.68	8.68	30.69	0.00			
180.0	85	85	13,001	184,725	9.99	309.99	39.31	39.31	39.31	0.00			
MAXIMUM VALUES>>													
2.0 Ft. Below the Top of Dam.													

100 YEAR STORM ROUTING 8/1/94		Currin Brothers North Basin			Top of Dam = El. 312.00		Primary Outlets: 1 Riser/Barrel		30 in. Riser/ 24 in. Barrel		El. 306.00 El. 300.00		Spillway Width=20 Ft.	
Storm volume by SCS: $Q^2 = (P-0.2S)^2 / (P+0.8S)$ in Cu.Ft. $V = (Q^2/12) \cdot (Ac \cdot 43560)$ in Cu.Ft. Watershed Area = 31.70 Acres 100 Year Runoff = 4.63 in. 100 Year Storm Volume = 533,132 Cu. Ft. 100 Year Op by Sea in CFS = 124.0 CFS $Tp = Vol / (1.39 \cdot Q^{0.60})$ in min 51.55 Minutes TIME INCR IN SECONDS and MINUTES 160 Seconds 3.0 Minutes														
Time (minutes)	OVERLAND FLOW	TOTAL INFLOW	INCREMENTAL Storage-CuFt	Accumulated Storage CuFt	Stage Feet	Elevation	TOTAL OUTFLOW	Outflow Riser/Barrel	Max. Outflow: CMP-Barrel	Spillway Inv. El.				
0.0	0	0	0	12,420	1.90	301.90	0.00	0.00	0.00	310.50				
3.0	1	1	186	12,420	1.90	301.90	0.00	0.00	0.00	0.00				
6.0	4	4	738	12,606	1.92	301.92	0.00	0.00	0.00	0.00				
9.0	9	9	1,637	13,344	1.99	301.99	0.00	0.00	0.00	0.00				
12.0	16	16	2,853	14,981	2.14	302.14	0.00	0.00	0.00	0.00				
15.0	24	24	4,347	17,834	2.38	302.38	0.00	0.00	0.00	0.00				
18.0	34	34	6,067	22,181	2.72	302.72	0.00	0.00	0.00	0.00				
21.0	44	44	7,957	28,248	3.15	303.15	0.00	0.00	0.00	0.00				
24.0	55	55	9,954	36,205	3.67	303.67	0.00	0.00	0.00	0.00				
27.0	67	67	11,992	46,160	4.26	304.26	0.00	0.00	0.00	0.00				
30.0	78	78	14,001	58,162	4.91	304.91	0.00	0.00	0.00	0.00				
33.0	88	88	15,916	72,153	5.61	305.61	0.00	0.00	0.00	0.00				
36.0	98	98	16,740	88,068	6.34	306.34	5.18	5.18	30.29	0.00				
39.0	107	107	14,115	104,809	7.05	307.05	28.31	28.31	32.28	0.00				
42.0	114	114	14,409	118,923	7.62	307.62	33.74	33.74	33.74	0.00				
45.0	119	119	15,120	133,332	8.18	308.18	35.12	35.12	35.12	0.00				
48.0	123	123	15,497	148,452	8.73	308.73	36.46	36.46	36.46	0.00				
51.0	124	124	15,622	163,949	9.28	309.28	37.73	37.73	37.73	0.00				
54.0	123	123	15,190	179,471	9.81	309.81	38.92	38.92	38.92	0.00				
57.0	121	121	14,511	194,661	10.32	310.32	40.00	40.00	40.00	0.00				
60.0	116	116	12,082	209,172	10.78	310.78	48.95	48.95	40.00	8.95				
63.0	110	110	6,737	221,234	11.16	311.16	72.08	72.08	40.00	32.08				
66.0	100	100	2,010	227,971	11.37	311.37	88.37	88.37	40.00	48.37				
69.0	92	92	-353	229,981	11.43	311.43	93.80	93.80	40.00	53.80				
72.0	84	84	-1,494	229,628	11.42	311.42	92.67	92.67	40.00	52.67				
75.0	78	78	-1,989	228,134	11.37	311.37	88.79	88.79	40.00	48.79				
78.0	72	72	-2,198	226,135	11.31	311.31	83.73	83.73	40.00	43.73				
81.0	66	66	-2,254	223,936	11.24	311.24	78.37	78.37	40.00	38.37				
84.0	61	61	-2,248	221,682	11.17	311.17	73.10	73.10	40.00	33.10				
87.0	56	56	-2,058	219,436	11.10	311.10	68.10	68.10	40.00	28.10				
90.0	51	51	-2,167	217,225	11.03	311.03	63.43	63.43	40.00	23.43				
93.0	47	47	-2,125	215,068	10.97	310.97	59.12	59.12	40.00	19.12				
96.0	44	44	-2,090	212,933	10.90	310.90	55.17	55.17	40.00	15.17				
99.0	40	40	-2,068	210,842	10.83	310.83	51.58	51.58	40.00	11.59				
102.0	37	37	-2,058	208,776	10.77	310.77	48.38	48.38	40.00	8.38				
105.0	34	34	-2,072	206,718	10.70	310.70	45.51	45.51	40.00	5.51				
108.0	31	31	-2,117	204,646	10.64	310.64	43.06	43.06	40.00	3.06				
111.0	29	29	-2,212	202,529	10.57	310.57	41.11	41.11	40.00	1.11				
114.0	27	27	-2,424	200,317	10.50	310.50	40.00	40.00	40.00	0.00				
117.0	24	24	-2,803	197,893	10.42	310.42	40.00	40.00	40.00	0.00				
120.0	22	22	-3,152	195,090	10.33	310.33	40.00	40.00	40.00	0.00				
123.0	21	21	-3,441	191,938	10.23	310.23	39.82	39.82	39.82	0.00				
126.0	19	19	-3,692	188,497	10.11	310.11	39.58	39.58	39.58	0.00				
129.0	18	18	-3,917	184,805	9.99	309.99	39.31	39.31	39.31	0.00				
132.0	16	16	-4,116	180,888	9.86	309.86	39.03	39.03	39.03	0.00				
135.0	15	15	-4,291	176,772	9.72	309.72	38.72	38.72	38.72	0.00				
138.0	14	14	-4,445	172,481	9.58	309.58	38.40	38.40	38.40	0.00				
141.0	13	13	-4,579	168,035	9.43	309.43	38.05	38.05	38.05	0.00				
144.0	12	12	-4,695	163,456	9.27	309.27	37.69	37.69	37.69	0.00				
147.0	11	11	-4,793	158,761	9.10	309.10	37.32	37.32	37.32	0.00				
150.0	10	10	-4,875	153,968	8.93	308.93	36.92	36.92	36.92	0.00				
153.0	9	9	-4,942	149,094	8.76	308.76	36.52	36.52	36.52	0.00				
156.0	8	8	-4,995	144,152	8.58	308.58	36.09	36.09	36.09	0.00				
159.0	8	8	-5,034	139,158	8.40	308.40	35.65	35.65	35.65	0.00				
162.0	7	7	-5,062	134,123	8.21	308.21	35.20	35.20	35.20	0.00				
165.0	7	7	-5,078	129,061	8.02	308.02	34.72	34.72	34.72	0.00				
168.0	6	6	-5,084	123,983	7.82	307.82	34.24	34.24	34.24	0.00				
171.0	6	6	-5,079	118,899	7.62	307.62	33.74	33.74	33.74	0.00				
174.0	5	5	-5,065	113,820	7.42	307.42	33.22	33.22	33.22	0.00				
177.0	5	5	-5,041	108,755	7.22	307.22	32.69	32.69	32.69	0.00				
180.0	124	124	16,740	229,981	11.43	311.43	83.60	83.60	40.00	53.60				
MAXIMUM VALUES-->														

0.6 Ft. Below the Top of Dam.

Clifford & Little PC Rev 1408 R-14-04 NCR 97600

**Currin Landfill, Durham County, NC**

	Primary Outlet		B	W	Calculation	Req. Vol. of Concrete	Sq. dimensions for 3' thickness	Imbed Riser 8' into Base	Actual Vol. of Concrete
	E Riser Ht.	K Riser Dia.							
North BASIN	6.0 Ft	30 In	306.3	30.9	58.4 (306.3-30.9) x 6	28.29 Cu.Ft.	3.071075846	3'-3" x 3'-3" x 3'-0"	31.69 Cu.Ft.
South BASIN	8.2 Ft	30 In	306.3	30.9	58.4 (306.3-30.9) x 8.2	38.67 Cu.Ft.	3.590226459	3'-8" x 3'-8" x 3'-0"	40.33 Cu.Ft.

