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September 9, 1997

Ms. Andrea Barefoot
Division of Waste Management
Solid Waste Section
P.O. Box 27687
Raleigh, NC 27611-7687

Dear Andrea:

Enclosed is the solid waste management plan for Weyerhaeuser's New Bern pulp mill. The facility owns and operates an on-site industrial landfill. This plan is submitted to you at the request of Mr. Bill Morris of the Washington Regional Office. A copy of this plan was submitted to Bill at an earlier date. If you have questions regarding the plan, please call me at (919) 633-7479.

Sincerely,

A handwritten signature in cursive script that reads "Richard Gay".

Richard Gay
Integrated Waste Management

xc: Bill Morris
Dave Gardner



Solid Waste Management Plan

New Bern

1.0 Executive Summary

The solid waste management plan is intended to provide a comprehensive look at waste generated by Weyerhaeuser's New Bern Mill Complex. In accordance with House Bill 859 Sec.16 G.S. 130A-309.09D(c), this plan contains the following components: (1) a waste reduction goal established by the generator; (2) options for the management and reduction of wastes evaluated by the generator; (3) a waste management strategy, including plans for waste reduction and waste disposal for the 10-year period covered by the plan. The plan will be made available to the Department of Environment, Health, and Natural Resources. Updates of the plan will occur every three years.

The pulp mill operations has SIC code 2600 and the sawmill operates under 2400. Both facilities share a landfill owned and operated by Weyerhaeuser Company. The landfill is expected to close in 2003. It is the intention of the mill to maintain a landfill owned and operated by the company to prevent potential liability from third party landfills.

The plan describes waste minimization strategies for the mill over a ten year time line. The year of 1990 is used as the baseline for waste generation rate. The rate in 1990 was 14,059 tons or 79,129 cubic yards per year. Waste disposed of in the landfill in 1995 was 6,974 tons or 56,303 cubic yards.

The NC waste reduction goal of disposal in landfills is 40% by the year 2001. The New Bern Mill has achieved a reduction of 50% through 1995 based on weight which is the criteria specified by the state. The mill has set a target of an additional 20% reduction in waste landfilled by 2001. The mill's truck count system will be utilized to measure the reduction.

1.1 Company Policy

Weyerhaeuser Company supports pollution prevention at all of its operating facilities. This support is expressed in its Minimum Impact Mill philosophy which says that the company may not achieve zero impact to the environment but will work toward having as little impact as possible. Weyerhaeuser was one of the first forest products industries to develop an environmental policy. The policy was written in 1971 and updated in 1996.

The Weyerhaeuser Environmental Policy aligns with the company value:

Citizenship:

“We support the communities where we do business, hold ourselves to the highest standards of ethical conduct and environmental responsibility, and communicate openly with Weyerhaeuser employees and the public.”

Weyerhaeuser employees at all levels will work to ensure that we comply with applicable laws and regulations and to continuously improve environmental performance wherever we do business

- Employees are accountable for ensuring compliance with applicable laws and for managing and operating our business to conform with the company’s goals of:
Practicing sustainable forestry;
Reducing pollution; and
Conserving natural resources through recycling and waste reduction.
- In conducting our business, we are committed to:
Continuously improving our processes for reducing wastes and emissions to the environment.
Conserving energy and natural resources by maximizing recycling and by-product reuse.

2.0 **Current Situation**

2.1 Mill Description

The New Bern Pulp Mill began operating in 1969 producing bleached kraft pulp 24 hours a day, 7 days a week. The mill now has the capacity of producing eight major grades of pulp for uses ranging from diapers to high quality paper to paneling for automobiles.

Loblolly pine is the species of wood used most at the New Bern Mill. Logs and chips are received by the woodyard as raw materials. Logs are debarked, chipped, and screened prior to going to the digestors for cooking. After pulping or cooking process, the brown pulp is washed to remove pulping chemicals which are sent to the chemical recovery area where they are burned in a high pressure recovery boiler. Inorganic chemicals recovered are used in the chemical manufacturing process that continues over and over. Steam produced by the boiler is used to generate electricity from the mill's turbine generator and to dry pulp. Brown pulp is bleached in a six-stage bleaching process that includes oxygen but no elemental chlorine. Bleach pulp is sent to the pulp machine for sheet formation and drying. Following drying the rolls are cut into smaller rolls or into bales and prepared for shipping. Shipments are made by truck and rail to domestic markets. In close proximity to the Atlantic seaboard, a significant percentage of the mill's production is exported to European markets. Production is about 250,000 tons per year.

2.2 Waste Stream Quantities and Current Management Practices

Waste	Quantity (tons/yr.) 1995	Management Practice
Wood yard bark, wood waste, chip screen fines	89,000 BDT	Sold as hog fuel to Craven Wood Energy
	1700 BDT	Sold to Parker Bark Company for beauty bark
Wood yard debris, grit	1300 BDT	Landfilled on-site
Grits	3000	Landfilled on-site
Dregs	2000	Discharged to alkaline sewer to WWTS
Lime mud	unknown	Discharged to acid sewer to WWTS
Primary clarifier sludge	20,000	Landfilled on-site
General mill waste	1500	Landfilled on-site
Asbestos	100 cu. ft.	Landfilled on-site
Scrap metal	500	Recycled via Goldsboro Iron & Metal
Putrescible waste	150	Regional Landfill
Office waste	22	Recycled by ARS
Off-specification production	100	Landfilled on-site

2.2.1 Hazardous Waste

Although the intent of this plan is to address nonhazardous waste generation and reduction, the mill has had great success in reducing the amount of recurring hazardous waste requiring disposal. The following table captures the waste reduction that has been achieved between 1989 and 1995 inclusive.

<u>Year</u>	<u>KG</u>	<u>LB</u>
1989	5,659	12,450
1990	6,025	13,257
1991	4,150	9,130
1992	1,440	3,169
1993	1,668	3,669
1994	928	2,042
1995	1,373	3,026

2.3 Waste Character

Twelve primary waste streams are generated by the New Bern Mill operations. A brief description of each waste follows. With the exception of putrescible waste, all waste is disposed on-site in the mill's landfill. Other smaller waste streams, not delineated, contribute to the overall solid waste generation.

logyard debris	is generated as a result of woodyard cleanup and consists of bark, wood, soil, and rock.
bark/wood waste	consists of scrap wood, chips, bark, wooden shipping crates, and wood construction debris.
lime grits	are unreacted particles of lime that settle to the bottom of the slaker where they are raked out for disposal.
lime mud	is composed of precipitated calcium carbonate referred to as "lime mud" and calcium oxide.

primary clarifier sludge	is composed of highly organic settled solids removed from the primary wastewater treatment system. This sludge is landfilled with a high moisture content.
General trash	consists of maintenance, demolition, and construction debris, packaging material, and similar type materials. Due to the various wastes in this category, opportunities exist for segregation to enhance reuse and recycling of this waste stream.
asbestos	includes friable and nonfriable asbestos materials and articles containing asbestos. Asbestos becomes a waste when removed for repair or prior to demolition. Asbestos is typically managed in place and removed on an as needed basis.
pulp/reject	is the off-specification fibrous raw material used to make paper.
knots	are composed of unpulped compression wood or uncooked chips that are removed prior to pulp washing and returned to the digester or landfilled as waste.
demolition	is material removed during demolition activities and from construction activities.
paper/cardboard	is primarily packaging materials and office waste
rock media	is generated from the electro-static precipitator that uses pea gravel as the scrubbing media. The rock is discarded when its size becomes too small to be effective.
putrescible waste	includes food waste generated by the vending service contractor. Because the landfill was permitted with some variances from requirements of a sanitary landfill, it is imperative that putrescible waste be separated from the general mill waste. Separate containers are provided for disposal of this waste stream to ensure this waste is sent to the regional landfill which is permitted as a Subtitle D facility.

2.4 Treatment, Disposal, & Recycling Facilities and Transporters

2.4.1 Treatment facility:

Wastewater Treatment System - NPDES permit
NC0003191 - mill site

2.4.2 Disposal facilities:

Weyerhaeuser New Bern Landfill - permit # 25-02 - mill site
BFI Medical Waste Systems - medical waste incinerator
Haw River, NC (919) 578-8900
Coastal Regional Solid Waste Management Authority - landfill
permit # 25-04

2.4.3 Recycling facilities:

Noble Oil Services
Raleigh, NC
Goldsboro Iron and Metal
Goldsboro, NC (919) 731-5600
Tire Service
Battery Service
Weyerhaeuser Forest Products
Plymouth, NC (919) 793-8360
CMS Generation Operating Co.
Craven Wood Energy Plant - 201 Executive Pkwy.
New Bern, NC (919) 633-9525

2.4.4 Transporters:

Noble Oil Service
Raleigh, NC
Goldboro Iron and Metal
Goldsboro, NC (919) 731-5600
BFI - medical waste transporter
Rocky Mount, NC (919) 977-1411
Weyerhaeuser Company
Charles Blythe Equipment Co. Inc.
Hwy. 41 E. Trenton, NC (919) 448-9181

2.5 Landfill Status

Weyerhaeuser Company owns and operates a 30 acre landfill on the New Bern Mill site. The landfill receives waste from the pulp mill operations and the sawmill. The landfill has an undetermined capacity but will be limited by state law requiring unlined landfills to cease receiving waste by January 1, 1998. A reclassification of the landfill as an industrial landfill allowed the mill to petition the state for a closure variance. With that variance, the site will continue receiving waste until 2003 or a maximum of five years beyond the 1998 deadline; at that time the landfill will be closed and a lined landfill will be required to be put in service.

A second landfill consisting of two 10-acre lined cells is also on mill property. The lined landfill, permitted by the Division of Environmental Management in 1984, has not received waste to date. This landfill continues to have annual inspections by the NC Water Quality Division.

3.0 **Opportunity Analysis for key Solid Waste Streams**

3.1 Waste Collection

General mill waste is deposited in five cu. yd. lugger buckets throughout the mill. The buckets are routinely picked up and carried by truck to the landfill for disposal. Bulk hauls to the landfill are accomplished by mill trucks with capacities of five, eight, ten, and twelve yards. The majority of the waste is transported by dump trucks. The driver of each truck maintains a record for each load hauled to the landfill. No separation of general waste collected in lugger buckets occurs on-site or at the landfill.

To ensure putrescible waste generated from the canteen areas remains separated from general mill waste, separate containers are provided. This waste is taken by a contractor (ARS) to the regional landfill for disposal.

3.2 Waste Tracking

Waste transported to the New Bern Mill Landfill is tracked by the Environmental Department. Truck counts and volumes are submitted to the department by the truck drivers. This data is entered into an *Excel* data base by the environmental engineer. For mill purposes the data is used as volumetric and not as a weight measurement. The volume transported is converted to a weight basis for state reporting purposes. An assumed weight of 300 lb./cu. yd. is used for the calculation. A project

has been initiated to improve waste tracking developing average bulk densities for each waste stream. The new data will be used in place of the average density of municipal garbage to give a better representation of waste generation.

3.3 Special wastes

Special wastes usually require special handling, disposal, or have particular health or environmental concerns. North Carolina law has identified several such wastes. These items and materials are banned from landfill disposal. To ensure these wastes are handled properly, these special wastes are removed from the general mill waste stream prior to disposal.

Tires for mobile equipment are purchased from suppliers that take back used tires for recycle or proper disposal. Used tires are returned to the suppliers when new tires are purchased. Tow motor tires are not considered tires by the solid waste rules and therefore are landfilled.

Lead acid batteries are purchased from suppliers that accept used batteries equal to or greater than the number of batteries purchased. Because of this waste reduction activity, it is necessary to store only a minimal number of used batteries on-site.

Medical waste generated through the Safety Department is shipped semi-annually to BFI for destruction by incineration. Although considered nonregulated medical waste by the NC Solid Waste Regulations, sharps and other medical wastes are shipped off-site for disposal. No manifests are required for tracking this waste; but, all shipments are tracked by a manifest system and records are maintained by the Medical Department.

White goods requiring disposal/recycling must have their CFC refrigerant removed by certified HVAC technicians prior to transportation to the metal reclaimer or landfill.

Used oil is collected on-site in totes for pick-up by Noble Oil Service for recycling.

Putrescible waste is disposed off-site in the landfill operated by Coastal Regional Solid Waste Management Authority to ensure putrescible waste is not disposed with industrial waste in the mill's landfill..

Aluminum cans are collected in numerous receptacles throughout the mill and removed by interested employees for recycle.

Hazardous wastes are shipped off-site to RCRA permitted treatment, storage, or disposal facilities.

Liquid wastes must be dewatered or solidified to contain no free liquids as defined by the paint filter liquids test Method 9095 prior to transporting to the landfill.

3.4 Disposal and Storage

Groundwater monitoring wells are installed both up gradient and down gradient. Wells LF-01 - LF04 are sampled semiannually with results submitted to the NC Department of Environment, Health and Natural Resources, Division of Solid Waste. Groundwater data is also entered into GIS Key database. Surface water samples are collected both upstream and downstream of the landfill.

Leachate from the landfill is collected in a surface ditch and directed to a pump station located on the southeast end of the landfill. The collected leachate is pumped to the mill's wastewater treatment system.

3.5 Recycling and Marketing of Waste Streams

Several materials disposed of in the landfill are being considered as potential raw materials for other facilities. The technical and economic feasibility as well as potential liability associated with use of these materials must be determined before the materials are offered as reusable materials.

Primary clarifier sludge is generated as a result of wastewater treatment. Mill effluent entering the wastewater treatment system contains varying amounts of residual fiber and other organics and inorganic materials that are settled and removed in the primary clarifier as sludge. This sludge which contains over 75% fiber is landfilled on-site. The mill reduced the fiber loss of 2,000 BDT in 1992 by 50% in 1993. To explore the feasibility of marketing the residual fiber found in the primary clarifier sludge, an exhaustive search of potential users of residual fiber from the mill was conducted. Of the approximately 130 companies contacted, 16 requested samples, the remainder expressed no interest in the material. Only two companies expressed interest following receipt of the samples. Follow up has not produced a prospective user or market.

A potential lime mud user survey was also conducted. Eleven utilities were contacted to see if there was interest in the lime mud. One company, currently in a five year contract with a pebble lime supplier, would like to

explore the potential of using this slurry form of lime. Modification of this potential user's process would be required to handle the material. If costs are favorable, a potential user could be available in three years. An additional project for lime reutilization will involve certifying the lime material through the NCDA as a soil liming material. This project has the potential to remove all the lime from the mill's waste stream.

Scrap metal is collected on-site by the mill. Goldsboro Iron and Metal supplies trailers for the mill to store scrap metal until full. GI&M transports the trailers to their site in Goldsboro, NC for recycle/reclamation.

Used crankcase oil is generated by the garage during routine mobile equipment maintenance. Gearbox oil used to lubricate large stationary equipment, such as the pulp machine, must be disposed of once removed from the machines. Used oils are consolidated into totes for pick up at the mill by Noble Oil Service. The oil is transported to Noble Oil for storage prior to recycling. Crankcase and gearbox oils are recycled at a rate of approximately 4200 gals. per year.

Scrap tires are returned to the supplier at the time of purchase of new tires.

Lead-acid batteries are recycled through local suppliers.

CFC's are reclaimed by on-site portable recycling units by the mill's HVAC technicians.

3.6 Regional Waste Management Opportunities

Although wood waste is not currently utilized by the mill as boiler fuel, any future on-site combustion of wood waste would present an opportunity for utilizing the ash produced as a soil amendment. Land application of ash on company land would be an alternative to landfilling. Land application has been developed for other areas in the region for ash, making any future ash generation a good fit within the existing program.

Reuse of lime dregs as a component in brick manufacturing presents an opportunity for potentially combining New Bern's dregs with those of Plymouth for utilization by Nash Brick Company. Trials began in May 1997 in a joint project between Plymouth and Nash Brick. If the trials prove successful and economically feasible, New Bern will have the opportunity to participate in the same project.

Wood waste generated by the mill that is not acceptable for boiler fuel by Craven Wood Energy is transported to Plymouth's Wood Products to be hogged and transferred to Plymouth's Pulp, Paper and Packaging Sector for use in their power boilers.

4.0 Criteria and Schedule for Prioritizing Wastes for Minimization Projects

Based on information collected from truck counts, minimization priority will be given to the waste streams contributing the largest volume to the landfill. Weight will not be used as the primary a criterion as landfill space is consumed based on volume rather than weight. Projects that can be implemented without capital expenditures and still make a significant contribution to waste reduction will be given a higher priority. Scheduling of capital projects will be based on the mill's available capital budget. Waste minimization activities will compete for capital dollars along with production projects.

Key Waste Management Strategies:

- Landfill closure
- Primary sludge dewatering
- Wood waste burned as Hog Fuel on-site
- Primary sludge burning
- Land application of boiler ash
- Land application of lime mud

Project	Benefits	Estimated completion date
Landfill closure	regulatory compliance	2003
Primary sludge dewatering	volume reduction	2000
Wood waste burned in hog fuel boiler	volume reduction	2001
Primary sludge burned in hog fuel boiler	volume reduction	2001
Land application of boiler ash	beneficial use	2002
Land application of lime mud	beneficial use	1998

5.0 Ten-Year Implementation Plan

5.1 Mill Contact

The mill contact for the solid waste management program is Dave Gardner, Environmental Manager for the New Bern Mill. Brad Chesson, Environmental Engineer, has responsibility for solid waste records including data entry, internal reporting, and Industrial Waste Landfill Annual Reports. The Environmental Manager is responsible for the landfill operations and compliance with the state rules governing landfills.

Appendix A

NC Annual Landfill Report

Appendix B

**Solid Waste Yearly Monitoring Reports
for New Bern Mill**

Waste	Quantity	Density	#	tons
Chips	500	560	280000	140
Demolition	315	800	252000	126
Dirt	605	2600	1573000	786.5
G. Trash	5064	300	1519200	759.6
Grit	8050	1080	8694000	4347
Knots	315	650	204750	102.375
Lime Grits	405	2190	886950	443.475
Lime Mud	69	2500	172500	86.25
Paper	101	300	30300	15.15
Pulp/rejects	546	500	273000	136.5
Sludge	21670	1685	36513950	18256.97
Wood residue	1495	875	1308125	654.0625
			total 1996	25853.88

Waste	Quantity	Density	#	tons
Chips	100	560	56000	28
Demolition	1284	800	1027200	513.6
Dirt	1550	2600	4030000	2015
G. Trash	5706	300	1711800	855.9
Grit	10133	1080	10943640	5471.82
Knots	440	650	286000	143
Lime Grits	1193	2190	2612670	1306.335
Lime Mud	53	2500	132500	66.25
Paper	499	300	149700	74.85
Pulp/rejects	874	500	437000	218.5
Sludge	22920	1685	38620200	19310.1
Wood residue	1635	875	1430625	715.3125
			Total	30718.66
			1995	

Waste	Quantity	Density	#	tons
Chips	40	560	22400	11.2
Demolition	265	800	212000	106
Dirt	730	2600	1898000	949
G. Trash	5797	300	1739100	869.55
Grit	1060	1080	1144800	572.4
Knots	685	650	445250	222.625
Lime Grits	1338	2190	2930220	1465.11
Lime Mud	18611	2500	46527500	23263.75
Paper	363	300	108900	54.45
Pulp/rejects	1415	500	707500	353.75
Sludge	21400	1685	36059000	18029.5
Wood residue	4465	875	3906875	1953.437
			total 1994	47850.77

Waste	Quantity	Density	#	tons
Chips	300	560	168000	84
Demolition	810	800	648000	324
Dirt	170	2600	442000	221
G. Trash	14510	300	4353000	2176.5
Grit	1040	1080	1123200	561.6
Knots	1130	650	734500	367.25
Lime Grits	1170	2190	2562300	1281.15
Lime Mud	13870	2500	34675000	17337.5
Paper	540	300	162000	81
Pulp/rejects	6690	500	3345000	1672.5
Sludge	23850	1685	40187250	20093.62
Wood residue	5760	875	5040000	2520
			total 1993	46720.12

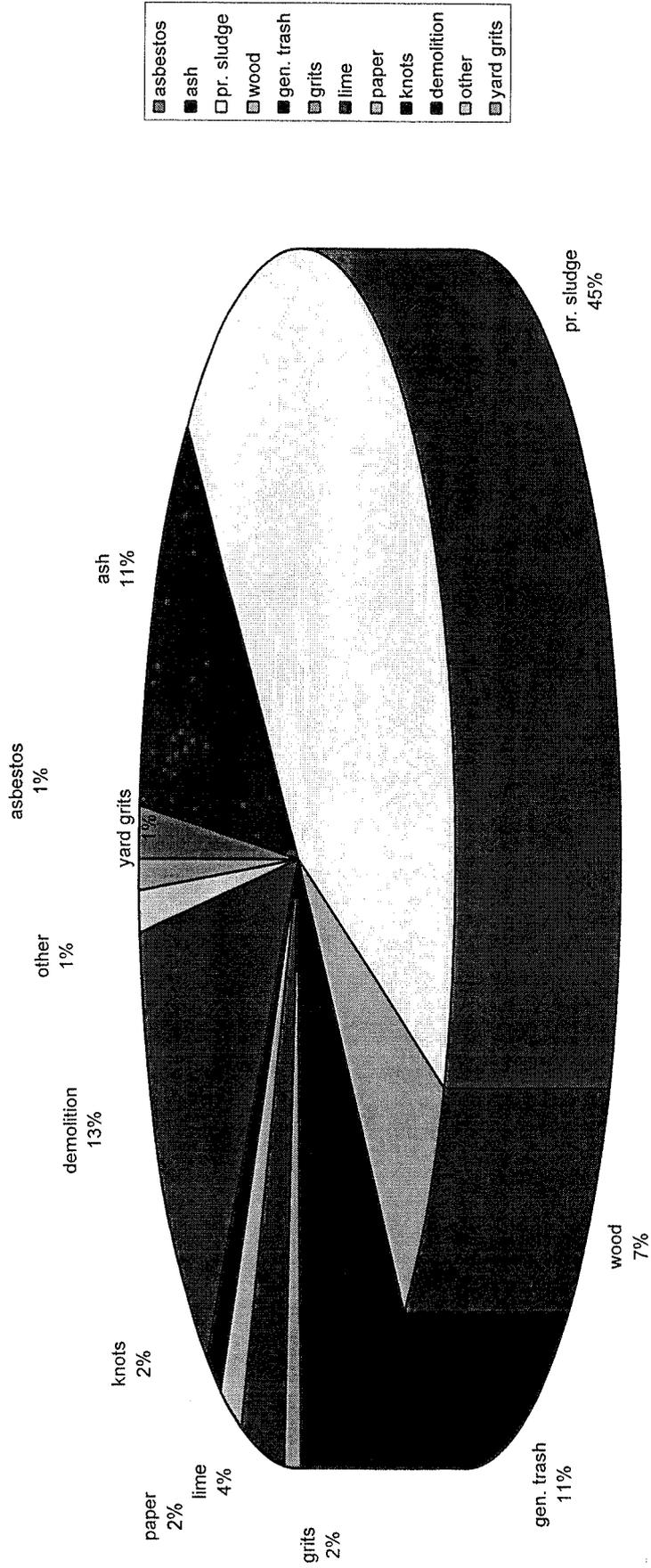
Waste	Quantity	Density	#	tons
Chips	1350	560	756000	378
Demolition	240	800	192000	96
Dirt	4820	2600	12532000	6266
G. Trash	7820	300	2346000	1173
Grit	1940	1080	2095200	1047.6
Knots	1950	650	1267500	633.75
Lime Grits	2310	2190	5058900	2529.45
Lime Mud	5810	2500	14525000	7262.5
Paper	1060	300	318000	159
Pulp/rejects	1440	500	720000	360
Sludge	24210	1685	40793850	20396.92
Wood residue	4000	875	3500000	1750
			total 1992	42052.22

Waste	Quantity	Density	#	tons
Flyash	8864	750	6648000	3324
Demolition	10440	800	8352000	4176
Dirt	4820	2600	12532000	6266
G. Trash	9784	300	2935200	1467.6
Grit	736	1080	794880	397.44
Knots	1360	650	884000	442
Lime Grits	1280	2190	2803200	1401.6
Lime Mud	3488	2500	8720000	4360
Paper	1825	300	547500	273.75
Pulp/rejects	1440	500	720000	360
Sludge	43040	1685	72522400	36261.2
Wood residue	5920	875	5180000	2590
			total 1990	61319.59

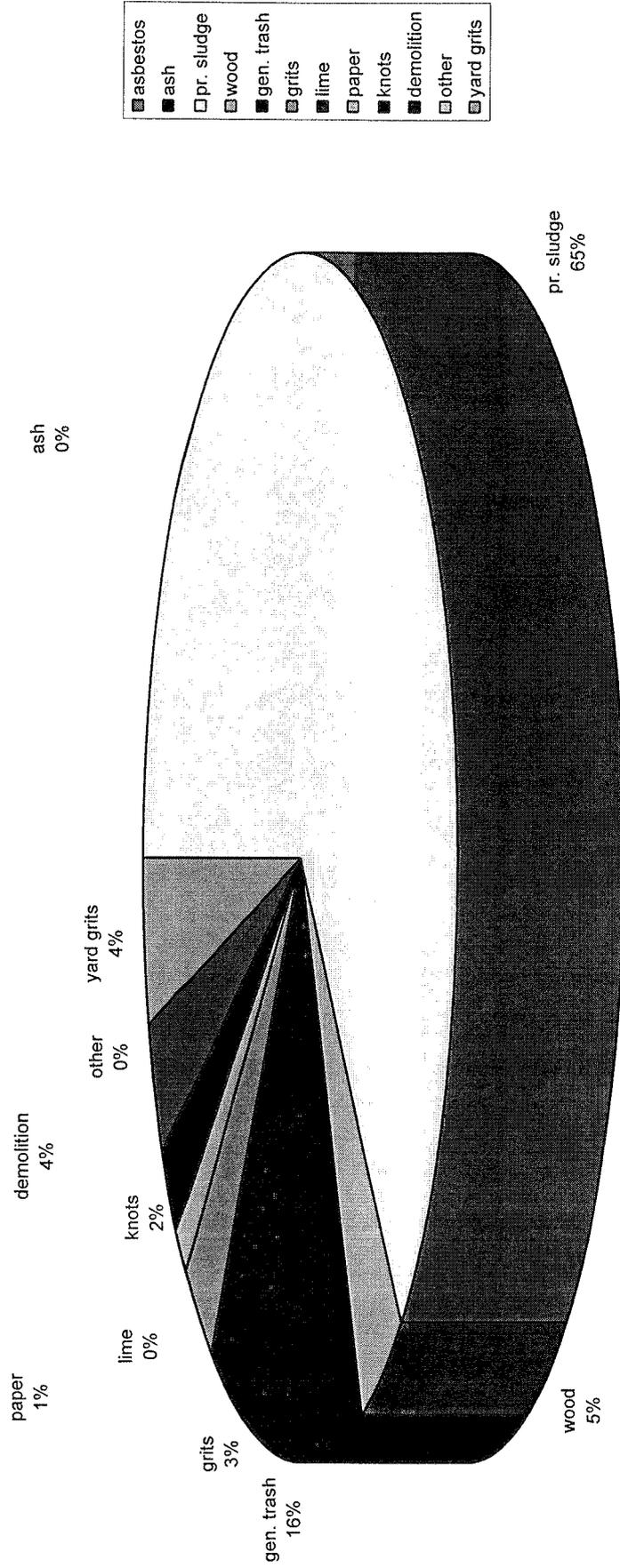
Appendix C

Solid Waste Streams Comparisons to Base Year 1990

New Bern Solid Waste Streams 1990



New Bern Waste Streams 1995



Solid Waste Streams - 1990 versus 1995



Appendix D
Paint filter Liquids Test
Method 9095

METHOD 9095

PAINT FILTER LIQUIDS TEST

1.0 SCOPE AND APPLICATION

1.1 This method is used to determine the presence of free liquids in a representative sample of waste.

1.2 The method is used to determine compliance with 40 CFR 264.314 and 265.314.

2.0 SUMMARY OF METHOD

2.1 A predetermined amount of material is placed in a paint filter. If any portion of the material passes through and drops from the filter within the 5-min. test period, the material is deemed to contain free liquids.

3.0 INTERFERENCES

3.1 Filter media were observed to separate from the filter cone on exposure to alkaline materials. This development causes no problem if the sample is not disturbed.

4.0 APPARATUS AND MATERIALS

4.1 Conical paint filter: Mesh number 60 (fine meshed size). Available at local paint stores such as Sherwin-Williams and Glidden for an approximate cost of \$0.07 each.

4.2 Glass funnel: If the paint filter, with the waste, cannot sustain its weight on the ring stand, then a fluted glass funnel or glass funnel with a mouth large enough to allow at least 1 in. of the filter mesh to protrude should be used to support the filter. The funnel is to be fluted or have a large open mouth in order to support the paint filter yet not interfere with the movement, to the graduated cylinder, of the liquid that passes through the filter mesh.

4.3 Ring stand and ring, or tripod.

4.4 Graduated cylinder or beaker: 100-ml.

5.0 REAGENTS

5.1 None.

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Date September 1986

6.0 SAMPLE COLLECTION, PRESERVATION, AND HANDLING

6.1 All samples must be collected according to the directions in Chapter Nine of this manual.

6.2 A 100-ml or 100-g representative sample is required for the test. If it is not possible to obtain a sample of 100-ml or 100-g that is sufficiently representative of the waste, the analyst may use larger samples in multiples of 100 ml or 100 g, i.e. 200, 300, 400 ml or g. However, when larger samples are used, analysts shall divide the sample into 100-ml or 100-g portions and test each portion separately. If any portion contains free liquids, the entire sample is considered to have free liquids.

7.0 PROCEDURE

7.1 Assemble test apparatus as shown in Figure 1.

7.2 place sample in the filter. A funnel may be used to provide support for the paint filter.

7.3 Allow sample to drain for 5 min. into the graduated cylinder.

7.4 If any portion of the test material collects in the graduated cylinder in the 5-min. period, then the material is deemed to contain free liquids for purposes of 40 CFR 264.314 and 265.314.

8.0 QUALITY CONTROL

8.1 Duplicate samples should be analyzed on a routine basis.

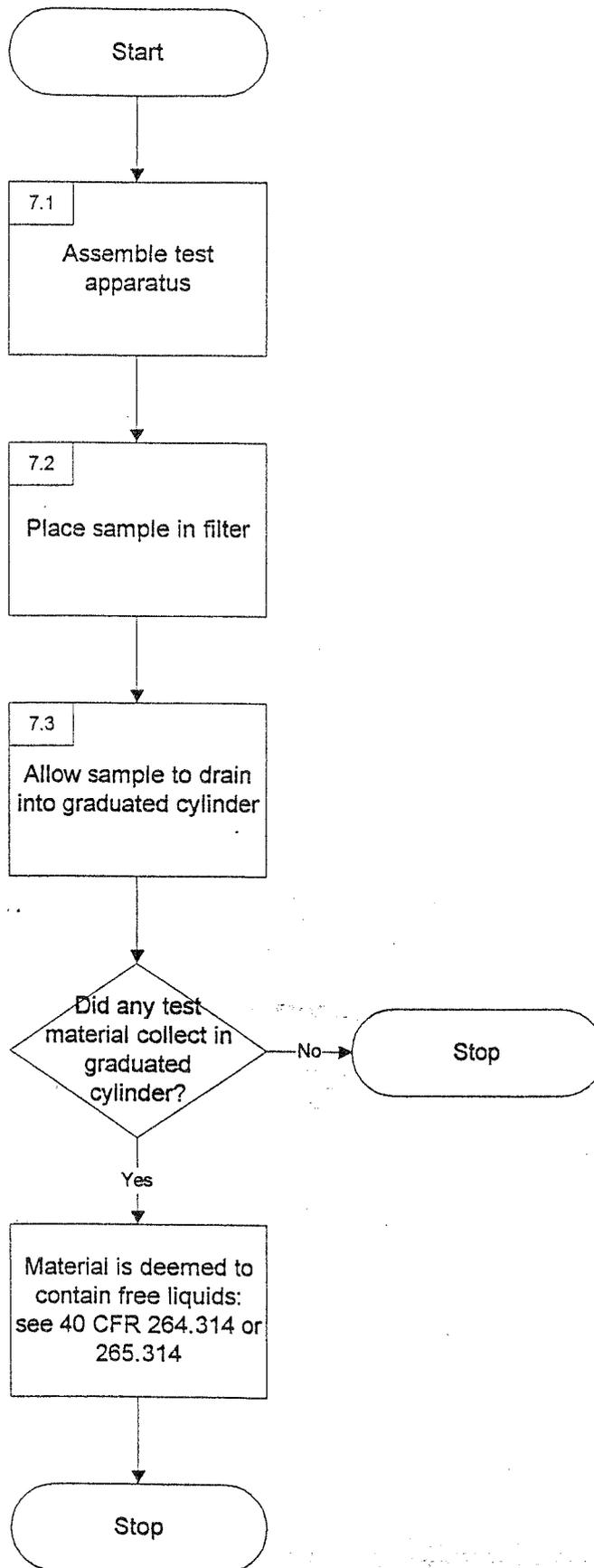
9.0 METHOD PERFORMANCE

9.1 No data provided.

10.0 REFERENCES

10.1 None required.

Method 9095
Paint Filter Liquids Test



Revision 0
Date September 1986