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**WATAUGA COUNTY DEPARTMENT OF SANITATION**

336 Landfill Road  
Boone, North Carolina 28607  
(T) 828-264-5305  
(F) 828-264-1702

March 4, 2010

Allen Gaither  
Solid Waste Section  
2090 US Hwy 70  
Swannanoa, NC 28778

Re: Permit Renewal

Dear Mr. Gaither,

As our MSW Transfer Facility permit No. 95-03T expires July 20, 2010, I am requesting a renewal of the permit to operate. I have attached a revised copy of the Facilities Operation Plan which includes any changes in the past five years.

If you have any questions, please let me know.

Sincerely,

Donna Watson  
Administrative Assistant

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## **SECTION 1 INTRODUCTION**

The Watauga County Solid Waste Program consists of numerous activities housed on property owned by the County and originally permitted for sanitary and demolition landfill operations. Figure 1 indicates the location of the property. The property consists of approximately 159 acres of which approximately 35 acres are used or have been used for solid waste management. In 1990, a municipal solid waste (MSW) baling facility was constructed for use in conjunction with the sanitary landfill operations. The original sanitary and demolition landfills were closed in 1994 and 1998 respectively, per the North Carolina Department of Environment and Natural Resources (DENR) regulations, and the baling facility modified to a transfer station/recycling facility in 1994. A new transfer station was constructed on site and became operational in 2005.

At this time the following programs are in operation at the site:

- Transfer station
- Empty transfer trailer storage
- Full transfer trailer storage
- Recycling at the original baling facility (including paper, cardboard, scrap metal, white goods, cans, tires, batteries, and electronics).
- Land clearing and inert debris (LCID) landfill
- Yard / Wood waste collection, and grinding / mulching / screening operations (Processing and Treatment facility permit received).
- Convenience center (waste disposal and recycling).
- Weigh station
- Swap shop
- Equipment maintenance shop (including waste oil and oil filters recycling). New facility operational in January 2005. Old facility being used for storage and will ultimately be demolished.
- Animal Shelter

The purpose of the following operations manual is to provide an overview of each solid waste activity and to describe the operational criteria for each program.

The manual will serve as a tool for the operations manager to assure that compliance with DENR regulations is maintained and that the operations are safe and consistent. The goal of the County is to continue to operate a comprehensive and effective solid waste program which will serve the County into the future.

## **SECTION 2 ORGANIZATION**

The solid waste program for Watauga County is operated as an enterprise fund. This means that the program must be or work towards being self-sufficient without need for money from the general fund of the County. The program has not yet achieved total financial independence from the County's budget but is moving rapidly in that direction. Because of the financial requirements for independence, the operations are conducted as a business and all activities continuously assessed for efficiency and cost effectiveness. The program is organized as follows:

1. The Board of Commissioners has ultimate control of all activities and makes the final decisions on all appropriated funding. They approve the program budget, approve all major expenditures including equipment and disposal contracts and all bid awards. In addition, they can evaluate personnel and make changes as necessary although they leave this role primarily up to the County Manager and Operations Manager. The Board is not involved in day-to-day decisions.

The Board is contacted through the County Manager.

2. The County Manager works for the Board of Commissioners and provides them with the necessary information for their decisions. The County Manager oversees the Operations Manager and evaluates all operational requests prior to taking the request to the Board. The County Manager may be involved in day-to-day decisions of the operations but defers to the Operations Manager.

The County Manager can be reached at 1-828-265-8000

3. The Operations Manager works for the Board of Commissioners and answers directly to the County Manager. The Operations Manager oversees daily operations of the solid waste management program, oversees collection of the waste from the County's convenience sites, makes recommendations on annual budget, bid packages, tipping fees, hires and evaluates the operating personnel, evaluates and recommends equipment purchases, works with engineering consultants, maintains compliance with State regulations and develops new programs as directed by the Board. In addition, the Operations Manager may be trained to operate equipment and/or to repair equipment. This individual is involved in all day-to-day decisions.

The Operations Manager can be reached at 1-828-264-5305

## **SECTION 3 RESOURCES**

Currently the Solid Waste Program includes 15 people in the following categories:

- Operations Manager (1)

- Scale house clerks (3)
- Equipment operators (9)
- Recycling Coordinator (1)
- Laborers (1)

Appendix 1 contains a list of the current equipment resources owned by the County.

#### **SECTION 4 EXISTING OPERATIONS**

The County’s solid waste program currently consists of the following operations located at the landfill site. The locations of these operations are identified on the drawing entitled “Overall Site Layout”, included in Appendix 2. In addition, Appendix 3 contains operational summary forms for each of the activities briefly described below. These forms can be readily updated as activities change.

Overall the following wastes are handled at the facilities indicated:

**TABLE 1**  
Summary of Facilities for  
Primary Waste Disposal Activities

<b>FACILITY</b>	<b>PRIMARY WASTE MATERIALS</b>	<b>REPORT SECTION NO.</b>
Transfer Station (New Operations)	<ul style="list-style-type: none"> <li>• Municipal Solid Waste</li> <li>• Commercial Waste</li> <li>• Institutional Waste</li> <li>• Construction Debris</li> <li>• Other materials as approved by County and DENR</li> </ul>	Section 4.4
Recycling Center (at Baling Facility)	<ul style="list-style-type: none"> <li>• Cardboard/pasteboard</li> <li>• Newspaper</li> <li>• Aluminum/steel cans</li> <li>• Electronics</li> <li>• Plastics</li> <li>• Tires</li> <li>• Car Batteries</li> <li>• Used Oil</li> <li>• Scrap Metal / White Goods</li> <li>• Compact fluorescent bulbs</li> </ul>	Section 4.3.2 Section 4.3.3 Section 4.3.4 Section 4.3.5
Land Clearing and Inert Debris Landfill	Land Clearing Waste <ul style="list-style-type: none"> <li>• Stumps/ Brush</li> <li>• Trees</li> <li>• Limbs</li> <li>• Pallets</li> <li>• Grass</li> <li>• Other naturally occurring vegetative material</li> </ul> Inert Debris <ul style="list-style-type: none"> <li>• Concrete</li> <li>• Brick</li> </ul>	Section 4.5

<b>FACILITY</b>	<b>PRIMARY WASTE MATERIALS</b>	<b>REPORT SECTION NO.</b>
	<ul style="list-style-type: none"> <li>• Gravel and Rock</li> </ul>	
Mulch Operations	<ul style="list-style-type: none"> <li>• Yard Waste/ pallets</li> <li>• Untreated / Unpainted Wood</li> </ul>	Section 4.6
Swap Shop	Reusable Items	Section 4.7

#### **4.1 Public Convenience Center (Waste collection facility):**

A waste collection facility is located on the property near the scales and scale house for use by the general public. In 2005 the location of this facility was moved from the south side of the entrance road to the north side of the road to provide more space and a better traffic pattern. Only bagged residential waste and appropriately segregated recyclables are accepted. The following recyclable materials are collected: cardboard/pasteboard, mixed paper, newspaper, glass, plastics, aluminum and steel cans, household batteries, compact fluorescent bulbs. The facility has been operational for 19 years. The access to the convenience center is shared with other solid waste traffic including garbage trucks and transfer trailers en route to the transfer station or other disposal facilities. The facility consists of the following collection containers:

- 1 – 28 yd recycling roll-off
- 1- 40 yard cardboard roll-off
- 1 – 30 yd plastic collection container
- 21 – 8 yd dumpsters (for solid waste)
- 1- pasteboard container

The hours of operation are:

<b>Day of Week</b>	<b>Winter Hours</b>	<b>Summer Hours</b>
Monday – Friday	6:30 AM – 6:00 PM	6:30 AM – 7:00 PM
Saturday	8:00 AM – 6:00 PM	8:00 AM – 7:00 PM
Sunday	1:00 PM- 5:00PM	1:00PM – 5:00PM

The site has a full time attendant who visually inspects the waste as it is dropped off by the County residents. Any unauthorized waste is segregated and handled by the County. The dumpsters are emptied daily. The recycling bins are emptied two times a week.

The site is secured by a fenced enclosure and locked gate at night.

The most important aspects of this operation include:

- Visual inspection of the waste material as it is dumped by citizens to assure that unacceptable waste is not placed in containers.
- Visual inspection of the recyclables to reduce contamination of the loads.

- Enforcement of allowable users (i.e. commercial haulers are not permitted to use the site.)
- Implementation of good housekeeping practices to eliminate the potential for blowing waste, spills, unsafe or unsightly conditions, overfilled containers, contamination of recycle collection containers.
- Enforcement of the no scavenging rules.

#### 4.2 Scales and Scale house:

The scale house currently houses four people: the operations manager, the administrative assistant and two office clerks. The scales were manufactured by Cardinal and installed in 2008. They are 70' in length. The transfer station has its own scales, the transfer trailers should not need to cross the office scales on a routine basis. Traffic across the scales is routed in a single direction. Trucks, which must weigh on the way out, must loop back into line to cross the scales.

The hours of operation are:

<b>Day of Week</b>	<b>Winter Hours</b>	<b>Summer Hours</b>
Monday – Friday	8:00 AM – 4:00 PM	Same
Saturday	8:00 AM – 12:00 PM	Same
Sunday	Closed	Closed

The scale house attendant directs traffic to the appropriate facility. The scale house attendant also visually checks for unauthorized waste and redirects the generator/hauler as appropriate. Hazardous waste and liquids are not accepted. The operations manager is contacted if there are any questions relative to the acceptability of a waste material. In addition to weighing the vehicles, screening the waste and answering the public's questions, the personnel in the scale house are responsible for the monthly billing, and for record keeping for the various operations at the site.

The site is secured at night by the entrance gate and locks on the doors.

Important aspects of this operation include:

- Accurate weighing of incoming and outgoing vehicles through proper maintenance of scales and computers.
- Provision of clear directions on where waste materials must be taken.
- Accurate record keeping
- Enforcement of rules
- Policing the scales to collect litter
- Answering the public's questions

### **4.3 Baling / Former Transfer Station / Recycling Facility:**

#### **4.3.1 Former Transfer Operations:**

The County currently receives an average of 250 tons per day of municipal solid waste (MSW) with peaks that have exceeded 300 tons per day. In 1990, the County constructed a baling facility to bale their MSW prior to placement in the operating landfill. When the Subtitle D regulations became effective, the County reevaluated the continued use of their landfill and decided that closure of the landfill before the April 1994 deadline would be the most cost effective long range solution when coupled with transfer of the waste to a private landfill outside of the County. If the landfill had remained opened, the County would have automatically been obligated to a 30 year post closure period which they wanted to avoid if possible. In addition, because of the presence of groundwater contamination, capping the landfill as soon as possible was determined to be a major component of the corrective action program as part of the presumptive remedy.

In 1994, the baling facility was retrofitted into a transfer station. The operations in this facility were adequate but cramped and inefficient. In 2005, these operations were shutdown and transfer operations were moved to a new facility located approximately 300 feet east of the existing facility.

Materials that were accepted at the transfer station facility included the following:

- Household waste and garbage
- Demolition and debris waste (exclusive of friable asbestos)
- Commercial waste
- Approved industrial waste
- Approved special waste
- Small animal carcasses
- Off-spec recyclables

Materials that were not accepted at the transfer station facility included:

- Hazardous waste
- Liquid waste
- Medical (Red bag) waste
- Large animal carcasses
- Propane tanks
- Gas tanks
- 55 gallon drums-which should go to ferrous metal
- Yard waste - which should go to the mulch operations
- Inert debris - which should go to the LCID landfill
- Untreated wood - which should go to the LCID landfill or mulch operations

- Water or wastewater treatment plant sludges
- Industrial waste not approved as special waste
- Fly ash or bottom ash unless prior approval is received
- Friable asbestos materials
- Radioactive waste
- Lead-acid batteries which are handled at the recycling operations in the baling facility
- White goods or tires which should go to the appropriate recycling operation

All employees were instructed in the identification of acceptable and non-acceptable wastes.

To retrofit the original baling facility into a transfer station, a long loading area had to be constructed to accommodate the length of the trailer. A transfer trailer is 16' high and the loading area was depressed as much as possible to accommodate this height, although it was not enough to make the top of the trailer flush with the tipping floor. Six feet of trailer extends above the floor slab and the trailer is protected during loading by a concrete push wall. The trailers were backed into this loading area, filled, removed and weighed, and returned for adjustment if insufficient or too much waste was loaded on the trailer. If the weight was within the acceptable range, the trailer was tarped and stored until the haul driver arrived. This operation no longer exists at this building. However the County will retain the wall and loading areas should its use be necessary under emergency circumstances in the future.

Waste was delivered to the facility by a variety of collection vehicles ranging from the top loading County collection trucks, to roll-offs to private citizens in pickup trucks. Waste was tipped onto the small tipping floor (approximately 5,700 sf) and then scooped up and lifted over the 6' wall into the receiving trailer by a loader. The goal of the County was to remove all waste from the tipping floor at the end of the day.

As waste was delivered and dumped on the tipping floor, the operator had the opportunity to screen the waste for unacceptable materials. Unacceptable materials were either removed for later handling or isolated until a preliminary identification of the waste and its source could be made. Screening was critical at this stage because the receiving facility could reject a full trailer for disposal if they had reason to suspect the presence of hazardous or unacceptable wastes. This would have created an expensive handling situation for the County as the entire contents of the trailer could require redirection to a hazardous waste disposal facility. The tipping floor is the best place for screening as fluids can be contained and blowing debris minimized. In evaluating the potential hazards of a waste the following criteria are used and are listed from first priority to last priority. The operator should check as follows for:

- Visible labels
- Strong or irritating odors
- Noisy reactions or visible fumes
- Fine metal particles, grindings, shavings
- Presence of moist or unusual looking soil
- Liquid saturated waste or liquid in containers
- Bulk liquids, slimes or sludges

Any of these items could indicate a hazardous material and the operator should isolate the material, then contact the operations manager who will determine the next step. At no time should the operator handle the material without protective clothing, eye protection, gloves and other protective gear. Only personnel trained in hazmat response should handle suspicious materials.

Fluids from the delivery vehicles and from wash down were collected in the building floor drain system and discharged into a holding tank which discharges into the sanitary sewer system. The floor was steam cleaned as often as possible at the end of the day. At a minimum the floor was cleaned once per week.

These transfer operations have been relocated to the new transfer facility. However, the loading area and concrete retaining wall will be kept in place should an emergency backup facility be necessary.

The facility is secured at night via the locked gate and locked doors of the station.

The facility was inspected monthly.

Record keeping included:

- Log of daily events
- Accident, damage or incident reports
- Unacceptable waste reports and waste screening log
- Weigh records
- Maintenance logs
- Recyclable records (delivered/shipped)
- Personnel records
- Inspection logs

Important aspects of this operation included:

- Waste screening
- Good housekeeping practices which include removal of waste from floor at night, washdown of floor, cleanup of trailer loading area,
- Safety
- Enforcement of rules

- Maximizing waste tonnage on trailers without exceeding allowable road weight

#### 4.3.2 Recycling Operations:

The baling/transfer station facility is also used and will continue to be used for recycling. These recycling operations process materials collected from the convenience centers or as delivered by citizens or businesses. The baler is used for baling cardboard, newspaper, plastic and aluminum and steel cans. The loose material is stored on the west side of the building or in trailers, then loaded into the baler when time allows.

Recycling material is delivered by commercial, private and public vehicles which are directed to the proper areas. Cardboard is delivered directly to the facility, dumped on the floor and baled. The bales are then moved off the floor and into a storage trailer. Cans, newspaper and plastic are hauled in roll-offs. Newspaper and plastic are baled directly. Cans are sorted mechanically then baled. Glass is dumped into an open top roll-off and shipped out to the processing facility. New glass bunkers are under construction and once completed, glass will be stored in the bunkers and hauled off site to be processed as needed.

A recycling technician separates waste from the recycling. The rejected material is dumped onto the tipping floor for placement into the haul trailer.

The expansion of the current recycling facility has increased efficiency and effectiveness of the operations.

For recycling, the County has a forklift, skid steer loader, mini loader, track hoe, tractor, trailers and baler.

The hours of operation are:

<b>Day of Week</b>	<b>Winter Hours</b>	<b>Summer Hours</b>
Monday – Friday	8:00 AM – 4:00 PM	Same
Saturday	8:00 AM – 12:00 PM	Same
Sunday	Closed	Closed

The facility is secured each night by closing and locking the gate at the scale house and by closing and locking the doors of the facility.

Important aspects of this operation include:

- Pre-screening of recyclables to assure that contamination is minimized.
- Proper handling and storage of materials to assure that the requirements of the receiving company are met.
- Proper handling and storage of materials to minimize fire hazards.
- Safe operation of baler.

- Good housekeeping practices including clean-up at end of processing period both at tipping floor, baler, and loading area; maintenance of baler; maintenance of storage trailers.
- Marketing of materials.
- Educating the public regarding materials accepted
- Timely removal of materials to processor

#### **4.3.3 Battery Recycling:**

This facility also receives auto batteries for recycling but only those brought in by citizens. The County does not accept batteries from the commercial sector. The batteries are stored in the baling facility out of the way of the other operations. When there are 50± batteries stored the collection company is called and the batteries taken away to a processing facility.

#### **4.3.4 White good and scrap metal recycling:**

White goods and scrap metals are collected at the baling facility for recycling. The white goods are stockpiled in the location indicated on the attached drawing until the CFCs can be removed. The County has a private contractor who comes in to remove the CFCs. Once the CFCs are removed, the white goods are placed in open top trailers for transportation to the processing facility. Scrap metal is loaded directly into the trailers upon delivery to the facility or stockpiled near the trailers for later loading. The County observes the scrap metal upon delivery to assure that there are no gas tanks, propane tanks, etc. in the load which could create a dangerous or unsafe condition. These materials are not accepted and if delivered must be removed by the hauler.

Important aspects of this operation include:

- Pre-screening of materials to eliminate potential contaminants or unacceptable materials
- Removal of CFCs from refrigerators
- Proper storage until CFCs can be removed
- Safe storage e.g. doors removed from refrigerators etc.
- Good housekeeping practices to make sure that materials do not pile up and become a safety hazard or unsightly problem
- Timely transport of materials to processor

#### **4.3.5 Tire Collection:**

Tires are collected at the baling facility and placed in trailers for transport. Tires are not allowed to be piled outside of the trailers except under emergency conditions. Once a trailer is full, it is shipped to the processor.

Important aspects of this operation include:

- Pre-screening of materials to eliminate potential contaminants or unacceptable materials
- Safe storage
- Good housekeeping practices to make sure that materials do not pile up and become a safety hazard or unsightly problem
- Timely transport of materials to processor

#### **4.3.6 Used Oil:**

Used oil in 1-2 gallon increments is collected at the Recycling Center in a collection tank. Waste oil is only accepted from citizens. The County does not collect waste oil from the commercial sector. Periodically the tank is pumped by a qualified vendor.

#### **4.4 New Transfer Station:**

Watauga County constructed a new 14,000 sf transfer station which went on line in 2005. The layout of the facility is provided in Appendix 5. The new transfer station is configured to allow the waste to be pushed directly into a loading hopper and into the haul trailer. This will eliminate the problems and inefficiencies with the previous system where the waste was lifted over a 6' high wall. In addition, the new facility will segregate the residential traffic from the larger commercial and public haulers. This should improve the safety of the delivery system. With the new configuration, the facility will be able to handle peak periods more effectively and should be able to meet the needs of the County for the future. The floor will be washed at the end of each day and other housekeeping chores completed.

The additional size of the facility will improve the handling and waste screening activities. The facility has been positioned such that the open doors are on the opposite side from the prevailing wind. Blowing waste in the transfer station should be minimal. The transfer truck loading bay will be equipped with doors to minimize blowing litter as it is dropped into the hopper. The facility will be policed diligently to contain the litter.

The office provided at the transfer station is located and designed to give the operators full visibility of the operations at all times. This will enhance the waste screening process.

The tipping floor will have a trench drain system for collecting fluids that may discharge from the delivery vehicles and for collecting the washdown water. Trench drains will also be placed in the trailer loading bay to collect washdown water. Washdown waters and fluids from the delivery vehicles will be passed through an oil water separator and grit chamber prior to discharge into the sanitary sewer system.

Materials that are accepted at the facility include the following:

- Commercial waste

- Construction waste
- Debris
- Demolition waste
- Discarded material
- Garbage
- Household waste
- Industrial waste as approved by the County and disposal facility
- Institutional waste except anatomical waste from health care facilities or infectious waste as specified in Regulated Medical Waste Regulations.
- Municipal solid waste
- Putrescible waste including occasional animal carcasses.
- Refuse
- Residential waste
- Rubbish
- Scrap metal
- Trash
- White goods
- Specific wastes as approved by the DENR and disposal facility.

Materials that are not accepted at the facility include:

- Bulk or non-containerized liquid (household liquids are exempt);
- Regulated hazardous wastes;
- Solid wastes, residues, or soils containing Dioxins;
- Solid wastes, residues, or soils containing PCB's;
- Sludges unless special approval is received;
- Pesticide containers that have not been triple rinsed and crushed;
- Drums that are not empty, properly cleaned, and opened;
- Waste oil;
- Contaminated soil;
- Regulated medical waste;
- Friable and non-friable asbestos;
- Radioactive wastes;
- Lead acid batteries;
- Large animal carcasses;
- Propane tanks;
- Gas tanks;
- 55 gallon drums.

Waste that is acceptable but which is not to be disposed of in the transfer station but directed to one of the other facilities on site includes:

- Yard waste - which should go to the mulch operations or LCID landfill
- Inert debris - which should go to the LCID landfill

- Untreated wood - which should go to the LCID landfill or mulch operations
- Lead-acid batteries which should go to the recycling center at the baling facility
- Waste oil which should go to the recycling center at the baling facility
- White goods or tires which should go to the recycling center at the baling facility

All employees are instructed in the identification of acceptable and non-acceptable wastes.

Waste is delivered to the facility by a variety of collection vehicles ranging from the top loading County collection trucks, to roll-offs to private citizens in pickup trucks. Waste is tipped onto the tipping floor, visually inspected and then pushed into the receiving trailers. The goal of the County is to remove all waste from the tipping floor at the end of the day.

As waste is delivered and dumped on the tipping floor, the operator has the opportunity to screen the waste for unacceptable materials. Appendix 8 the information included in the waste screening plan.

Unacceptable materials are either removed for later handling or isolated until a preliminary identification of the waste and its source can be made. Screening is critical at this stage because the receiving facility can reject a full trailer for disposal if they have reason to suspect the presence of hazardous or unacceptable wastes. This would create an expensive handling situation for the County as the entire contents of the trailer could require redirection to a hazardous waste disposal facility. The tipping floor is the best place for screening as fluids can be contained and blowing debris minimized. In evaluating the potential hazards of a waste the following criteria are used and are listed from first priority to last priority. The operator should check as follows for:

- Visible labels
- Strong or irritating odors
- Noisy reactions or visible fumes
- Fine metal particles, grindings, shavings
- Presence of moist or unusual looking soil
- Liquid saturated waste or liquid in containers
- Bulk liquids, slimes or sludges

Any of these items could indicate a hazardous material and the operator should isolate the material, then contact the operations manager who will determine the next step. At no time should the operator handle the material without protective clothing, eye protection, gloves and other protective gear. Only personnel trained in hazardous materials response should handle suspicious materials.

Fluids from the delivery vehicles and from wash down are collected in the building floor drain system and discharged into a oil water separator which discharges into the sanitary sewer system. The floor is cleaned at the end of the day.

The hours of operation are:

<b>Day of Week</b>	<b>Winter Hours</b>	<b>Summer Hours</b>
Monday – Friday	8:00 AM – 4:00 PM	Same
Saturday	8:00 AM – 12:00 PM	Same
Sunday	Closed	Closed

The facility is secured at night via the locked gate and locked doors of the station.

Monthly the facility is inspected.

Record keeping includes:

- Log of daily events
- Accident, damage or incident reports
- Unacceptable waste reports and waste screening log
- Weigh records
- Maintenance logs
- Personnel records
- Inspection logs

Important aspects of this operation include:

- Waste screening
- Good housekeeping practices which include removal of waste from floor at night, washdown of floor, cleanup of trailer loading area,
- Safety
- Enforcement of rules
- Maximizing waste tonnage on trailers without exceeding allowable road weight
- Maintenance of scales

#### **4.5 Land Clearing and Inert Debris (LCID) landfill:**

In 1998 Watauga County closed their demolition landfill which was permitted to handle a wide variety of materials and constructed an LCID landfill to handle a portion of the demolition waste. Because the disposal area was less than 2 acres, the facility did not need a formal permit from DENR.

Land clearing waste is defined as waste which is generated solely from land clearing activities such as stumps, trees, limbs, brush, grass and other naturally occurring vegetative material. Inert debris is defined as material consisting of concrete, brick,

concrete block, uncontaminated soil, gravel and rock. Both can be handled in an LCID landfill. In addition, untreated, unpainted wood such as pallets can be accepted. Other demolition materials once accepted by the County must now be handled through the transfer station or transported directly by the generator to a permitted disposal facility.

Although the LCID facility cannot accept the same waste materials as the demolition landfill once did, it is still an important service for the residents of the County. Without this facility, more waste materials would need to be delivered to the transfer facility and hauled off site, at great expense.

The facility receives mostly inert debris as the woody vegetative material is handled by the mulching operation. Material is delivered by commercial and private haulers who must pass over the facility scales. If the material is found to be acceptable through discussion of its origination and a surficial visual inspection, it is delivered to the landfill and dumped at the location indicated by the operator. The County then pushes the material into position in the landfill and periodically covers the waste with 4 – 6 inches of dirt. As the material is being pushed into place an additional inspection of the waste is made to assure that unacceptable waste is not included in the materials. If unacceptable material is found, it is segregated from the acceptable waste and later removed from the area to the transfer station or other acceptable handling facility.

The facility is policed daily. A full time operator is not stationed at the site, as materials are delivered sporadically. A dozer is assigned to the facility.

The operator checks the site frequently for signs of erosion and repairs/modifies the operations accordingly. Erosion control measures which may be implemented include:

- Placement of additional cover soil and stabilization with temporary seeding
- Installation of silt fence around working face
- Improvement or addition of stormwater channels or temporary diversion ditches
- Temporary seeding

The operator must also work diligently to maintain access into the site. The access road is graded and graveled as necessary to minimize safety concerns, minimize dust and to minimize mud tracked onto the main landfill road.

The hours of operation are:

<b>Day of Week</b>	<b>Winter Hours</b>	<b>Summer Hours</b>
Monday – Friday	8:00 AM – 4:00 PM	Same
Saturday	8:00 AM – 12:00 PM	Same
Sunday	Closed	Closed

Important aspects of the operations of this facility include:

- Pre-screening of waste to eliminate unacceptable materials
- Maintenance of appropriate erosion and sediment control measures including temporary seeding, silt fence as needed, and diversion channels.
- Policing materials to assure that unacceptable waste is segregated and properly handled.
- Periodic covering of the waste materials to assure that insects and rodents to not become a nuisance, and to assure that erosion or dust are not problems.

#### **4.6 Mulching operations:**

On January 1, 1993, DENR banned yard waste from sanitary landfills. Because of the ban, the County cannot transfer their yard waste to a disposal facility and instead, the County segregates most of the land clearing debris and untreated wood for mulching. The mulching operation is considered a “Treatment and Processing Facility” under Rules .0301-.0320 of the Title 15A Subchapter 13B of the NC Administrative Code. In October 2001 a permit amendment application was filed for this operation, and on December 18, 2001 DENR approved the permit modification. The permit contained the following conditions:

1. Operation and maintenance of this facility shall be in accordance with the Solid Waste Management Rules (15A NCAC 13B, Section .0302), the permit application and Operation Plan submitted with the permit application. Failure to comply may result in compliance actions or permit revocation.
2. Any leachate generated in the treatment and processing area shall be managed in such a manner that there will be no degradation of ground or surface waters.
3. This facility shall be operated in such a manner that soil erosion and runoff from the site shall be controlled. Storm water structures shall be maintained as approved for the landfill.
4. All waste and processed materials shall be maintained at least 50 feet from permit boundary lines.
5. Only materials specifically listed in the permit application may be managed at this facility without adequate testing and prior approval of the Division of Waste Management. Should materials begin to compost, generate heat in excess of 110 degrees Fahrenheit, resulting in a change in physical appearance of the ground material it will be necessary to obtain a compost permit for this application.
6. Non-conforming waste received at the facility shall be removed and recycled or managed at the adjacent transfer station.
7. Engineered (glued) wood products shall not be managed in this area.
8. This facility shall be operated and maintained with sufficient dust control measures to minimize airborne emissions and to prevent dust from becoming a nuisance or safety hazard.
9. The amount of waste received and the amount and type of products sold or otherwise distributed shall be reported to the Department of Waste Management by August 1<sup>st</sup> of each year for the previous July 1 to June 30.

10. 75% of materials received shall be treated or processed and distributed within 12 months of receipt.
11. **This permit shall expire on April 20,2011.** Changes in ownership, increase in facility capacity, process changes or receiving additional wastes shall require a permit modification. Any modifications to the Treatment and Processing Rules will have to be addressed within 90 days of the effective date of those rules.

Approximately 3,000 tons per year are received and stored in an area on site as indicated on the drawing in Appendix 2. Twice a year, the County contracts the grinding to process the materials into mulch, which is stored in the same area. The contractor also disposes of the mulch by hauling it to their facility. The County has rented a trommel screen in the past to screen the mulch to produce two components, a fine component consisting of the residual dirt and finer organic particles and a coarser component for landscaping mulch. By screening the material, the landfill staff believes that a larger market will be developed.

The mulching operations require significant space for the various stockpiles and operations. It also requires stormwater management, adequate access for the public and fire suppression measures. To enhance control, these operations must be visible from the scale house or transfer station as the operation is not staffed and quality control is important. The operation must also be readily accessible by the fire department for fire control. The current operations area meets all these criteria. It is estimated that approximately 2+ acres are involved in the operation.

A dozer, trackhoe, and rubber tire loader are used in the operation as well as the leased tub grinder. One equipment operator is needed to operate the facility; however, this individual is assigned additional duties as this operation requires only minimal operator time except during the grinding operations or during periods of heavy use by the public, either in dropping off materials or picking up mulch. The County loads the mulch for the public.

Fire suppression and control is important in the operation of this facility. To reduce the potential for fire, the piles are visually monitored for hot spots. The mulch product is turned periodically to help reduce these hot zones.

The hours of operation are:

<b>Day of Week</b>	<b>Winter Hours</b>	<b>Summer Hours</b>
Monday – Friday	8:00 AM – 4:00 PM	Same
Saturday	8:00 AM – 12:00 PM	Same
Sunday	Closed	Closed

Important aspects of the operation of this facility include:

- Meeting permit conditions
- Pre-screening of waste to eliminate unacceptable materials

- Maintenance of appropriate erosion and sediment control measures including silt fence and diversion channels.
- Policing materials to assure that unacceptable waste is segregated and properly handled.
- Periodic turning of the mulch to assure that insects and rodents to not become a nuisance, and to reduce the potential for spontaneous combustion.
- Maintenance of access for public and fire department to reduce potential for bogging down in the mud and to reduce mud tracked out on the road.
- Good housekeeping to confine the materials to the area generally indicated on the drawing
- Promotion of the use of mulch to assure turn over of the materials.

#### 4.7 Swap shop:

As with any waste operation, items are received which may still have a useful life. A facility has been developed at the new convenience center in which useful items can be taken from the tipping floor or brought directly in by citizens and made available to the public. Examples of items include bicycles, lawn mowers, old doors, windows, etc.

All items delivered must be re-usable. If an item is not re-usable or of marginal quality, it will be directed to the transfer station.

Hours of operation are:

<b>Day of Week</b>	<b>Winter Hours</b>	<b>Summer Hours</b>
Wednesday and Friday	8:00 AM – 4:00 PM	Same
Saturday	8:00 AM – 12:00 PM	Same
Sunday	Closed	Closed

The facility is attended during its hours of operation. The attendant keeps a record of items which are brought to or removed from the facility. Any item which does not move out of the facility after being dropped off within a reasonable time is taken to the transfer station for disposal.

Important aspects of this operation include the following:

- Communication with the public on what is and is not acceptable for drop off.
- Record keeping
- Good housekeeping to keep the items arranged for ease of drop-off and removal, to minimize safety concerns, and to reduce other hazards.
- Removal of items which are not usable or which do not appear to be acceptable to the public.
- Marketing the operation.

#### 4.8 Maintenance facility:

A new maintenance facility was completed in 2005. The County has moved all operations to this new facility, using the older facility only for storage. Eventually, the old building will be demolished. Appendix 4 contains a building plan for the new facility. The County Solid Waste Department services trucks, collection vehicles, heavy equipment, and trailers at this facility. The new maintenance facility has a maintenance pit, tool and parts storage, an indoor wash bay and several work bays. With the additional space, the County will also provide service to the general County fleet for tire changes and balancing.

The County has one mechanic and one mechanic helper for this operation.

The hours of operation are:

<b>Day of Week</b>	<b>Winter Hours</b>	<b>Summer Hours</b>
Monday – Friday	8:00 AM – 4:00 PM	Same
Saturday	8:00 AM – 12:00 PM	Same
Sunday	Closed	Closed

The new facility has specific areas designated for storage of the fluids as needed for maintenance (e.g. oil, hydraulic and transmission fluids). An indoor washdown bay with the appropriate wastewater handling system has been provided to wash down the vehicles before maintenance and to wash off the garbage trucks daily. Wash down water passes through an oil water separator before it discharges into the sanitary sewer system. A maintenance pit has been provided to allow better and safer maintenance of the under carriage of the various vehicles.

Important aspects of this operation include:

- Safe and efficient maintenance of equipment
- Proper storage and handling of oils, fuel and other vehicle fluids
- Recycling of used motor oil
- Proper pretreatment of washdown water prior to release into the sanitary sewer system.
- Completion of maintenance records
- Maintenance of parts and tool inventory.

#### 4.9 Erosion control:

Erosion control is a primary activity for the LCID landfill and mulching operations. The County addresses erosion control in several ways as follows:

- Sediment ponds which capture the runoff from the facility.
- Seeding
- Proper road and culvert maintenance

- Silt fence
- Stormwater conveyance channels and diversions

The following maintenance schedule is suggested for erosion and sedimentation control, but it represents a minimum. Inspection and repair should be increased as necessary:

- **Sediment Ponds**

The sediment ponds will be inspected after each major rainfall to determine if any repairs are needed. If repairs are needed they will be completed as soon as possible. In addition, the County will monitor the depth of sediment in the ponds and schedule cleanout as necessary. Typically, when a pond is 50% full, it should be cleaned out. Sediments from the pond can be placed on land to drain provided that there is not waste beneath the drying area and provided that the runoff from the drying area will be directed back into the sediment pond. The sediment once sufficiently dry can be used as cover in the LCID landfill or can be seeded in place. As a precautionary measure, the County may consider installing silt fence around the drying area.

The condition of the outlet structures should also be evaluated periodically to assure that the structures have not become clogged with debris or structurally compromised. If problems are noted, the County will schedule repairs as appropriate.

- **Silt Fences**

Silt fences will be installed as necessary at the LCID landfill, mulching operations or during cleanout of the sediment basins. Silt fences shall be inspected after each rainfall and daily during a prolonged rainfall event. Repairs will be made as soon as practical. Should the fabric on a silt fence decompose or become ineffective prior to the end of the expected usable life, the fabric shall be replaced promptly. Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one-half the height of the barrier. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform with the existing grade, prepared and seeded.

- **Storm water conveyance channels/Diversion ditches/Roadside ditches**

During the initial establishment, grass-lined channels should be inspected weekly and after every major storm event, repaired immediately and grass reestablished as necessary. After grass has become established, the channel should be checked periodically to determine if the grass is remaining viable. The channels should be mowed periodically, being sure that the grass cover is protected from damage. It is particularly important to check the channel outlet and all road crossings for bank stability and evidence of piping or scour

holes. All significant sediment accumulation should be removed to maintain the designed carrying capacity.

Riprap channels shall be inspected weekly and after every major storm event and repaired or cleaned as soon as possible.

- **Seeding**

All disturbed areas will be stabilized at the facility in accordance with the NC Erosion and Sedimentation Control Manual. Prior to seeding, the soil shall be tested for nutrient and pH levels. Fertilizer and lime shall be added according to test results. Seeding shall be accomplished per the NC Erosion and Sediment Control Manual.

If timing for permanent seeding is inappropriate, temporary seeding per the manual shall be used with mulch or matting. Annually all seeded areas will be inspected and a maintenance plan prepared as necessary.

- **Matting**

Matting may be used in areas susceptible to erosion in conjunction with seeding. Areas which have been matted will be inspected after each rainfall for the first year to assure that erosion rills do not develop under the matting. If they do, the matting will be stripped back, the area regraded and reseeded. A check will also be made to determine where water is entering and repairs made accordingly.

All erosion control shall be completed in accordance with the North Carolina Erosion and Sediment Control Handbook, latest edition.

#### **4.10 Post closure activities**

Post closure activities at the County's closed landfills consist of three components: groundwater monitoring, gas monitoring and routine maintenance. A brief description of each activity is provided below:

##### **4.10.1 Groundwater monitoring:**

Assessment groundwater and surface water monitoring is conducted semiannually at the Watauga County Landfill in accordance with the Watauga County Landfill Assessment Plan (DAA, Sept. 3, 1993) and subsequent monitoring program revisions as approved by the NCDENR.

In June 1998, the NCDENR approved the following monitoring program revisions:

- 1) The initiation of monitoring a smaller subset of six core monitoring wells (2,3,8,9,12&17) for semiannual monitoring and a larger set (1,10,11,15&19) for annual monitoring,
- 2) Annual rather than semiannual analysis for target metals, and
- 3) Withdrawal of select non-impacted monitoring wells (4,5,13,14&18) from routine groundwater monitoring.

Six surface water sampling locations and select off-site wells continue to be sampled semiannually. Select MNA indicator parameters are also collected semiannually.

#### **4.10.2 Gas monitoring:**

Gas is monitored quarterly at the closed Watauga County Landfill. There are two probes and several facilities that are monitored for methane. The facilities monitored include the scale house, baling/recycling facility, maintenance shop (old and new), new transfer station, and animal shelter. In addition several adjacent homes to the south of the MSW landfill are monitored on a schedule set by DENR.

Gas is vented from the MSW landfill through 22 passive vents installed through the synthetic cap. The gas that is collected is flared off to one main blower system. On a daily basis, the blower system is inspected to assure proper operation.

Currently the County is working with DENR relative to implementing a gas remediation plan. All 22 passive vents have been connected to a blower system. The County is in the process of developing a Gas to Energy project and anticipates a finalization of this project in the near future.

#### **4.10.3 Routine maintenance:**

Under post closure care, the County must maintain the closure caps on the demolition landfill and the MSW landfill as necessary. It is important that the vegetative cover be retained in a good condition and this is done through reseeded, liming and mowing. The demolition has a soil cap; the MSW landfill has a composite cap consisting of a soil infiltration layer topped with a 40mil LLDPE membrane, geocomposite drainage layer and cushion soil. The vegetative cover is currently in excellent condition. The grass on the MSW landfill is mowed once a year and collected for hay. In addition, the access roads into and on the facility caps, the stormwater conveyance system and gas vent/flare system must be maintained in good condition. These facilities are inspected periodically and repaired as necessary. The blower system requires limited maintenance except to review the operation of the ignition system which is solar powered. Periodically the solar batteries must be replaced. Appendix 7 contains a sample inspection form for use by the County.

#### **4.11 Animal shelter**

The operation of the animal shelter is not a function of the solid waste program. However, the shelter does periodically euthanize animals and the carcasses are buried on site in a designated area or frozen and placed in the transfer trailers in small numbers.

#### **4.12 Convenience Center**

The County collects waste from 10 convenience centers. These centers are staffed and the dumping limited to residential waste. Recycling is also available for residents at this site. Cardboard, mixed paper (including newsprint and magazines), glass bottles and jars, aluminum cans, metal cans, and plastics (#1 and #2) are collected. Tires, car batteries, white goods, scrap metal and used oil must be delivered to the recycling center at the baling facility.

The frequency of collection is set by the County as experience and need dictates.

**APPENDIX 1**  
**EQUIPMENT LIST**

**APPENDIX 2**  
**OVERALL SITE LAYOUT MAP**

**APPENDIX 3**  
**OPERATIONS SUMMARY FORMS**

**APPENDIX 4**

**CONCEPTUAL LAYOUT OF MAINTENANCE FACILITY**

**APPENDIX 5**

**CONCEPTUAL LAYOUT OF NEW TRANSFER STATION**

**APPENDIX 6**

**INSPECTION FORM FOR TRANSFER STATION  
(Suggested format)**

**APPENDIX 7**

**INSPECTION FORM FOR POST CLOSURE MAINTENANCE**

**APPENDIX 8**  
**WASTE SCREENING PLAN**