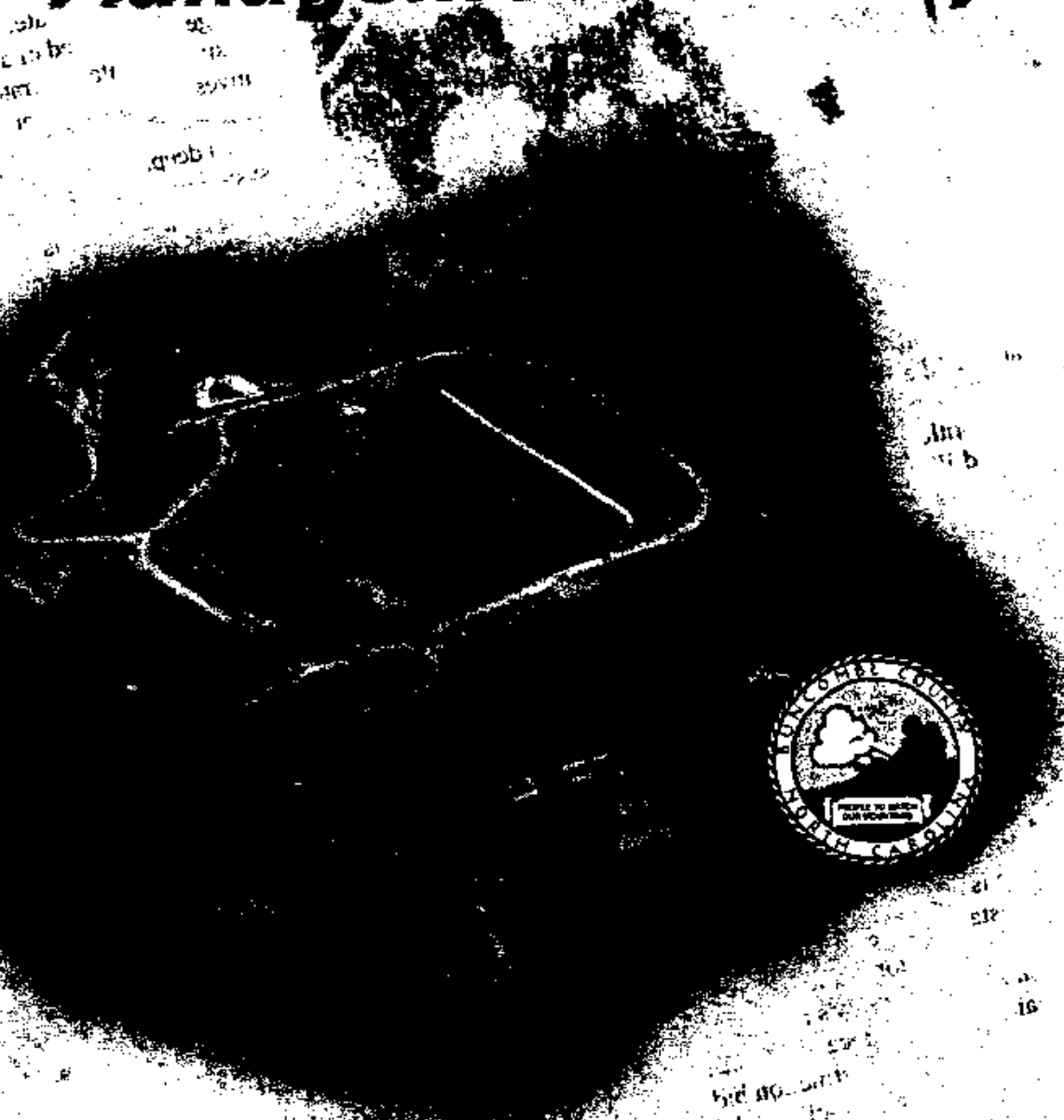


US EPA ARCHIVE DOCUMENT



Buncombe County Solid Waste Management Facility



1999 Excellence in Solid Waste Management Awards

Landfill Category

SWANA Excellence Awards Program Application Form

Please submit this form as the first item in your binder. Please type or print clearly answering each applicable question completely. *A separate application is needed for Christmas Tree Recycling.*

1 Applicant Name (must be facility, system or program owner or operator):

Member Name and ID#: Bob Hunter ID/12820
Organization: Buncombe County Dept. of Solid Waste

2

Preparer of Application:	Bob Hunter
Organization:	Buncombe County Solid Waste Department
Address:	30 Valley Street
City, State/Province, Postal Code:	Asheville, NC 28801
Phone #:	828/250-5460
Fax #:	828/232-4407
email address:	Hunterb@co.buncombe.nc.us
Facility, system or program operator:	Buncombe County Solid Waste Management Facility
Facility, system or program owner:	Buncombe County

3 Category Applying For:

- Landfill Collection Transfer Station Waste-to-Energy Recycling
 Special Waste Management Public Education School Curricula Integrated System
 Landfill Gas Control Landfill Gas Utilization Planning and Financial Management

4 Application Fee: \$125 for all categories

5 Deadline: Completed applications must be received at SWANA International Association Offices by April 19, 1999.

6 Entry Requirements: All entries must include -

- ✓ completed application form, including release signature
- ✓ \$125 check for application fee (made payable to SWANA)
- ✓ one original and three copies of application form and submittal
- ✓ four 3-ring binders including the above information

7 Release Statement:

I certify that the information provided in this application is correct to the best of my knowledge. SWANA reserves the right to publish the enclosed information. Your signature gives us the right to reprint any portion of your application.


Signature

4/14/99
Date



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Buncombe County Solid Waste Management Facility

Facility Description





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Introduction and Executive Summary

The Buncombe County Solid Waste Management Facility (BCSWMF) is owned and operated by the Buncombe County General Services Department. During FY 97-98, the BCSWMF received approximately 150,000 tons of waste of which only 98,000 tons was disposed of in the Subtitle D landfill portion of the facility. The remaining wastes were handled as follows: C&D waste was disposed of in the on-site C&D landfill; all wood waste was ground and sold as mulch; all ferrous and non-ferrous metals (including white goods) were processed and recycled; and all household recyclables collected at the citizen convenience center were recycled. The BCSWMF is among the ten largest publicly owned MSW landfills in the State of North Carolina. Buncombe County's population is just under 200,000.

Buncombe County is located in the western part of North Carolina in the Blue Ridge Mountains. Situated along the eastern banks of the French Broad River, the BCSWMF is located in the north-central part of the County as seen in Figure 1 and covers approximately 550 acres. The BCSWMF serves only Buncombe County and its six municipalities: Asheville, Biltmore Forest, Black Mountain, Montreat, Woodfin, and Weaverville. In addition to the landfill, the County operates a transfer station in the city of Asheville, provides for residential waste and recyclables collection in the unincorporated areas of the County through a franchise hauler system, and provides a comprehensive recycling, waste reduction, and hazardous waste awareness public education and training program to its citizens and businesses.

Because of the natural beauty of the Asheville-Buncombe County area, the County's citizens have a keen and unique passion for environmental issues. Therefore, in addition to its primary mission of disposing of the County's solid waste in an environmentally responsible manner, the County General Services Department has worked very hard to make the BCSWMF blend in with the surrounding area; minimize any visual impacts of the facility; and provide additional recreational opportunities for its citizens in the buffer areas surrounding the facility. The County's efforts thus far in this regard have and continue to include:

- The re-forestation and re-establishment of wildlife food plots in all disturbed areas in cooperation with the North Carolina Division of Forest Resources.
- The establishment of a two-mile-long regional park along the banks of the French Broad River to include a walking/biking trail, boat access, a handicapped-accessible fishing platform, and access to approximately 12 miles of beginner, intermediate, and advanced mountain bike trails in the first phase of the park's development. The plans for these recreational facilities have been developed in cooperation with the North Carolina





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Division of Parks and Recreation, the Western North Carolina Bicycle Dealers Association, and the International Mountain Bike Association.

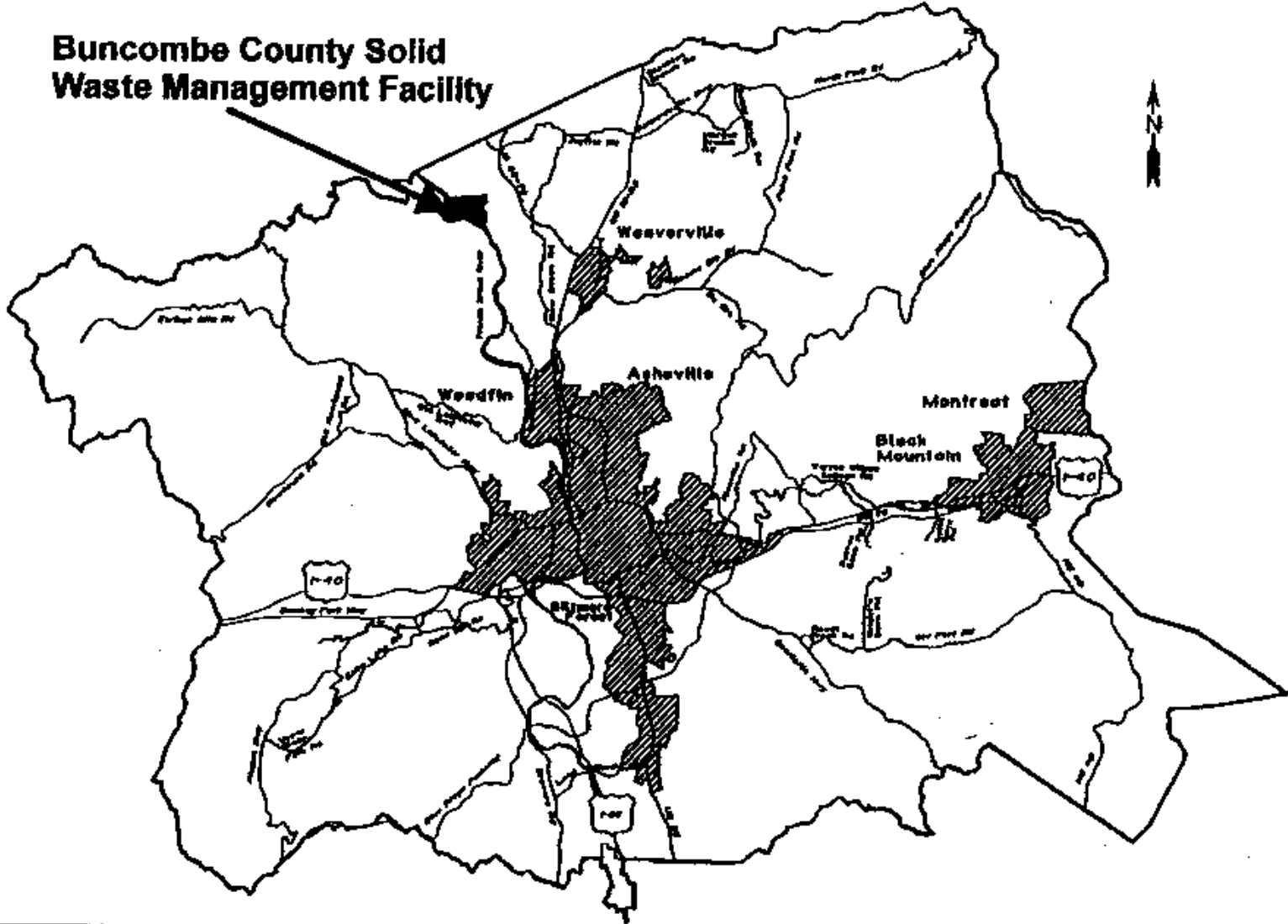
- The fabrication and installation of more than 100 bird houses to promote the establishment of a diverse wildlife population and reduce the number of insects that are attracted by the solid waste and sedimentation basins.
- The promotion of suitable habitat for fowl such as ducks and Canadian geese in and around on-site sedimentation ponds.
- The construction of an attractive and well landscaped entrance gate to the landfill.

The mountainous terrain of the BCSWMF site presented many challenges and complex issues during the permitting, design, and construction phases. Some of these challenges and the methods used to address them are described below:

- The site has many steep areas and was difficult to access. Construction of the entrance road involved a 50-foot cut through a solid rock hill. The resulting blast rock was used in a major rock fill slope which carried the entrance road through a switchback up to the disposal areas.
- The surficial aquifer beneath the site lies in a severely fractured bedrock zone which made the development of an effective monitoring plan difficult. A series of multi-day, aquifer pump tests were needed to choose the most suitable monitoring well locations. A secondary monitoring/witness zone (the first such application in North Carolina and not required by the State Rules) was constructed beneath the sump areas in the first three cells to provide an added level of security to the monitoring of the site. The County also samples the drinking water wells of any residence so desiring within one-half mile of the facility.
- Due to the complex aquifer system beneath the site, the County decided to install individual leachate sump pumps in each cell to eliminate any penetrations and potential sources of leaks in the synthetic liner system.
- The lack of on-site clay led to the Department being the first in the State to design and permit an alternative liner system incorporating a geosynthetic clay liner under new State rules passed in 1998. The County's engineering consultant, Camp Dresser & McKee (CDM), utilized an in-house groundwater model, designed to simulate groundwater flow conditions in a fractured bedrock environment better than USEPA prescribed models, to demonstrate the equivalency of the proposed liner system. The alternative liner system saved the County approximately \$400,000 on the construction of Cell 3 as compared to the cost of a bentonite augmented clay liner which had to be used on Cells 1 and 2.



Buncombe County Solid Waste Management Facility



Buncombe County Solid Waste Management Facility Site Location Map
Figure 1



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- The BCSWMF lies within the highest seismic activity zone in the southeast. Thus, the design of the disposal units underwent rigorous stability analysis to ensure safe disposal of the County's waste.
- With a design capacity of more than 3,000,000 tons of waste, the BCSWMF is required to have a Title V permit and comply with the NSPS. In order to comply with these regulations and make maximum use of its available airspace, the County is in the preliminary design stages for a combined leachate recirculation and landfill gas recovery system, i.e., considering the implementation of the bioreactor technology. County staff visited the Delaware Solid Waste Authority's Central SWMC where construction was underway on the full-scale implementation of such a design.

Camp Dresser & McKee was presented with a 1998 Honors Award by the Consulting Engineers Council of North Carolina for Engineering Excellence in the design of the BCSWMF. A copy of the award is presented in Figure 2.

Buncombe County has made a strong commitment to protecting the environment surrounding the landfill by implementing a rigorous program of random waste load inspections. The County has a full-time inspector dedicated to randomly inspecting loads entering both the Subtitle D and C&D landfill areas. The proper handling of household hazardous waste is a focus of the County's public education program which targets the schools, community groups, and small quantity generators.

Like many publicly operated solid waste programs in the country, Buncombe County's program has been affected by a lack of flow control. Approximately 60,000 tons of waste are exported by a private hauler to a landfill 70 miles away in South Carolina. This loss of waste and revenue has forced the County to look for more cost-effective ways of doing business in order not to lose more of its waste stream. The County is currently evaluating its legal flow control options including a county-wide residential and commercial franchised collection system.

Employee health and safety is also important to the County. Buncombe County is a strong supporter of SWANA's training programs and has had several employees trained by the various courses offered. The County hosted a Chapter waste screening course in 1998 and a MOLO course in 1999, as well as a Chapter operations seminar in 1997 which focused on proper landfill compaction techniques and handling of leachate from the wastewater treatment plant operator's perspective. Landfill supervisors conduct in-house training sessions every two weeks focusing on health and safety, and proper equipment operation and maintenance.





ACEC

Consulting Engineers Council
of North Carolina

presents a

1998 HONORS AWARD

to

Camp Dresser & McKee
Raleigh, North Carolina

for

ENGINEERING EXCELLENCE
In Environmental

for the

Buncombe County Solid Waste Management Facility
Alexander, North Carolina

March 4, 1998

Aerial photograph of the facility during the first week of operation.



Installation of alternate groundwater monitoring system in Cell 1.



BUNCOMBE COUNTY SOLID WASTE MANAGEMENT FACILITY

Camp Dresser & McKee (CDM) was selected in 1991 to design and assist the county with permitting of the Buncombe County Solid Waste Management Facility. The new 570-acre site, which is located in the Blue Ridge Mountains, presented complex site characterization and design challenges. In addition to the design of the 98-acre Subtitle D landfill, CDM also designed and permitted a new C&D landfill, a 0.5-mile entrance road, new scales, a new scalehouse, and a citizen convenience center. CDM provided full construction management and COA testing services.

Synthetic liner installation in Cell 2.



Figure 2



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Facility Description

All of the facilities located at the BCSWMF are described in this section with the exception of the Subtitle D disposal units which are described in the next section.

Landfill Entrance

The entrance to the BCSWMF is located about one-quarter mile off of NC 251 on Panther Branch Road as seen in Figure 3. In addition to the landfill entrance, there are several homes located near this point and further up Panther Branch Road. For this reason, as well as to put its customers in a good frame of mind as they enter the facility, the County constructed a very attractive entrance to the landfill. The entrance sign was carved out of wood native to the area and mounted on two stone columns as can be seen in Photograph #1. The area is nicely landscaped with mulch from the County's wood waste recovery program and planted with azaleas and other flowering plants. The landscaped areas were constructed with an underground irrigation system. The County installed a swinging black wrought-iron gate which ties into a stone wall as shown in Photograph #2. The stone wall in turn ties into the sides of a hill which had to be cut through to gain access to the site. Wooden carved bollards protect the landscaped areas on either side of the entrance.

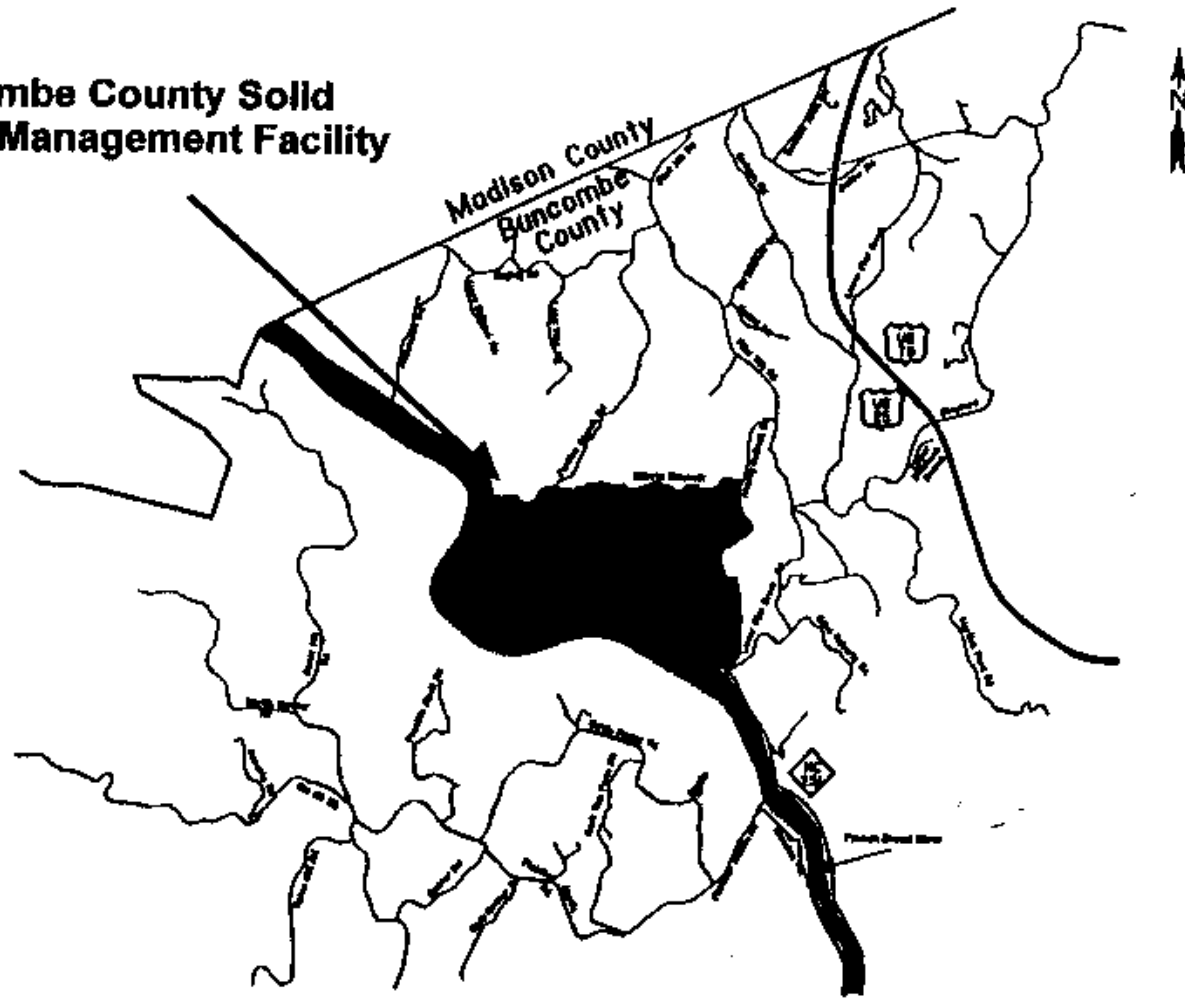
At the point where the entrance road intersects with Panther Branch Road, a very wide apron was constructed with wide turning radii for the incoming and exiting waste hauling vehicles. Panther Branch Road is narrow and winding at this point and the wide apron allows the exiting trucks to obtain the best view of oncoming traffic. Asphalt pavement was installed from Panther Branch Road through the scalehouse and up to the perimeter access road around the disposal cells. The hard surface pavement extends nearly 3/4 mile and on the exit side several speed bumps not only slow traffic down but knock any mud off the trucks before they exit back on to Panther Branch Road.

Along the half-mile distance to the scalehouse, the County planted alternating red and sugar maple trees staggered on 75-foot centers on both sides of the road as can be seen in Photograph #3. During the warmer months, these trees make for a very visually appealing trip to the scalehouse. In the fall, the red maples turn red and the sugar maples turn yellow, and they add to the stunning fall colors that are one of the hallmarks of the North Carolina mountains. All of these trees are also connected to the underground irrigation system. Several signs are posted along the entrance road encouraging customers to recycle on the way in and to have a nice day and buckle their seat belt on the way out.

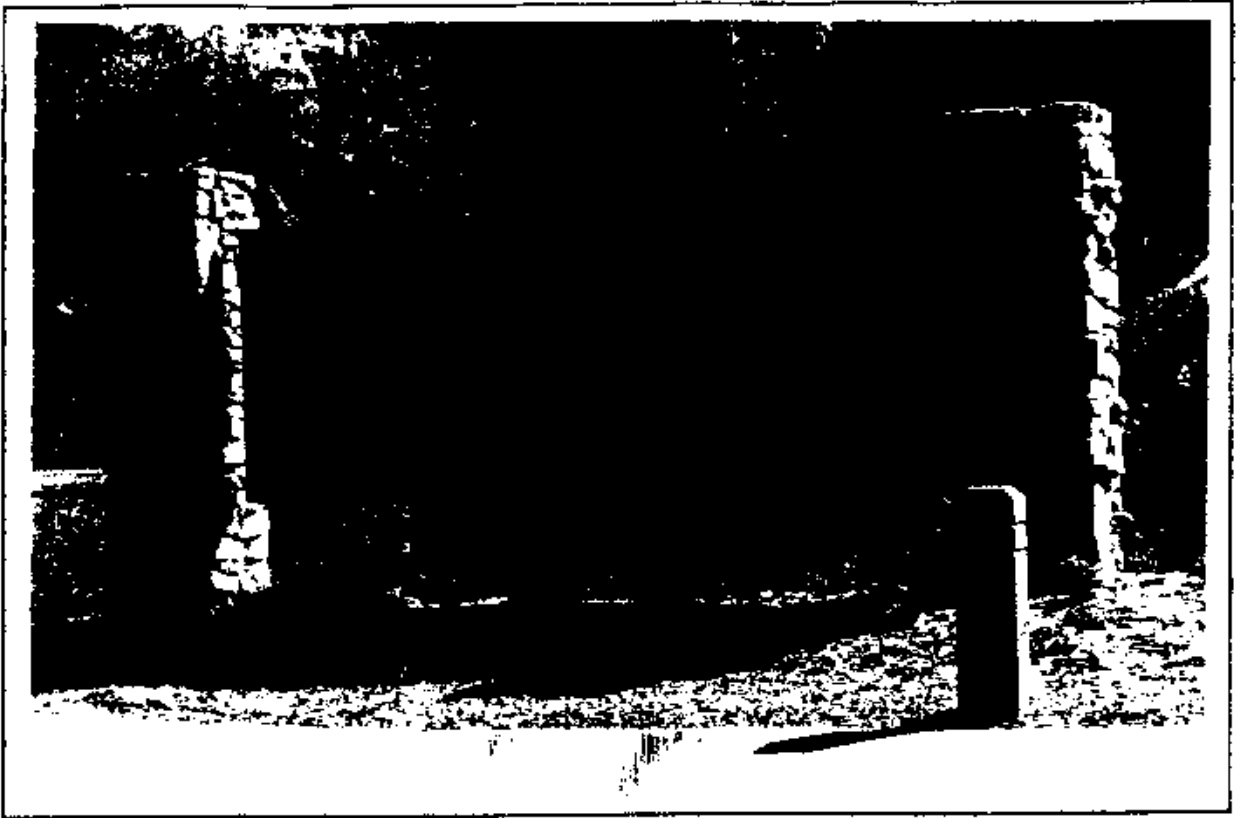
Construction of the main access road into the facility was a challenge. More than a dozen alternative road alignments were analyzed. The final alignment selected required two creek crossings and approximately 200,000 cubic yards of rock excavation (excavated by pre-splitting and controlled blasting). The deepest rock



Buncombe County Solid Waste Management Facility



Buncombe County Solid Waste Management Facility Site Vicinity Map
Figure 3



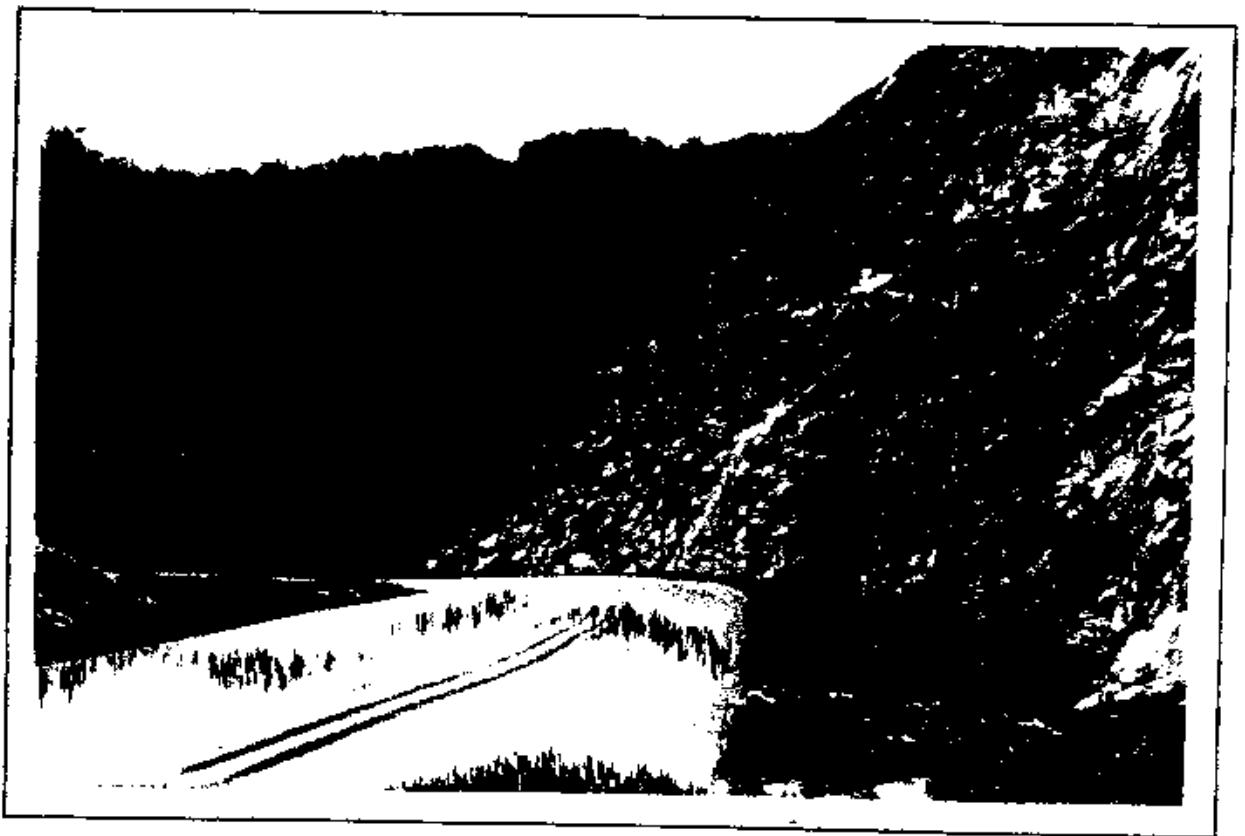
Photograph 1. Panther Branch Road Entrance Sign



Photograph 2. Panther Branch Road Entrance Gate



Photograph 3. View exiting the BCSWMF showing tree-lined entrance and safety sign



Photograph 4. View exiting the BCSWMF showing tree-lined entrance and rock cut slope



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cut was almost 80 feet. The pre-splitting/controlled blasting operation was slightly more expensive than mass blasting, however, the resulting rock face on the northern side of the entrance road adds to the aesthetic views heading to and from the scalehouse. The final rock slope can be seen from a ground shot in Photograph #4 and near the top of the aerial photograph provided in Photograph #5. The aerial was taken in mid-1997 during initial construction of the facility.

Scalehouse and Citizen Convenience Area

Complicating the entrance road design process was finding an area flat enough to allow construction of the scalehouse, scales, and citizen convenience area. Photograph #6 is the view from the disposal area down towards the scalehouse and the citizen convenience area. Photograph #7 is a front view of the scalehouse as it is approached from Panther Branch Road. The County installed three flag poles flying the flags of our country, state, and the County. The areas in front and in back of the scalehouse were sodded and connected to the underground irrigation system as well. Potable water is provided by a nearby well and sanitary waste is collected in a below ground tank at the back of the scalehouse.

The scalehouse was modeled after an old southern mountain train station so as to fit in with the surrounding architecture. Two large windows were provided at the front of the scalehouse so that the scale attendants could clearly see the awaiting and departing customers. Two of the four overhead cameras around the scalehouse can be seen in Photograph #7. These cameras record all inbound and outbound transactions and provide a view into the top of the vehicle on the inbound scale and of the convenience center. Landfill Manager can see live video from each camera from his office. The live feeds are recorded 24 hours per day, 7 days per week. The daily tapes are archived for a two-month period. The cameras also provide live video to the scale attendants, as seen in Photograph #8, who can then see into the top of the trucks on the scales. The scale attendant can then direct the customer to the proper area of the facility. Each scale operator has been trained in waste screening and will question suspect loads and notify the waste screeners in the disposal areas of suspicious loads via two-way radio. The cameras also record each inbound and outbound transaction in case there are any complaints raised.

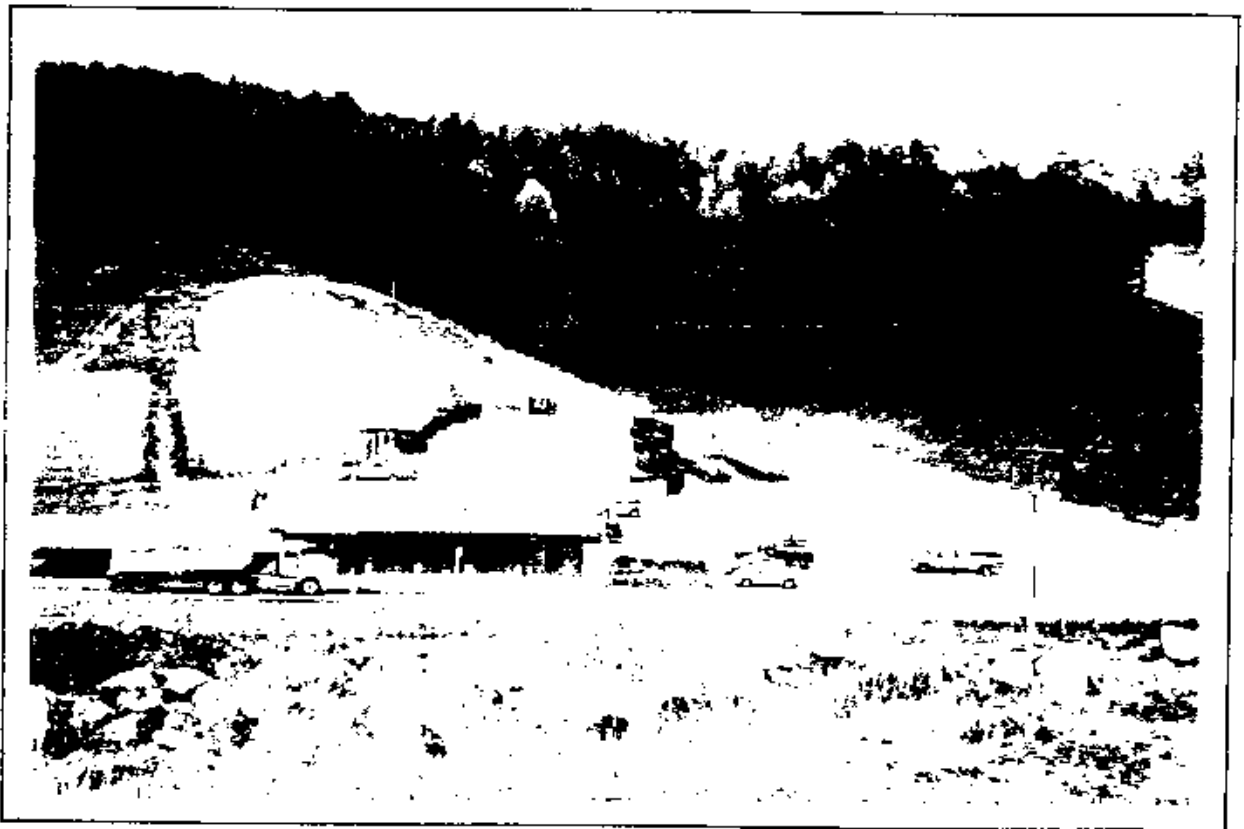
Bank teller windows were provided at both the inbound and outbound scales. Customers are protected from the elements by an overhanging roof and the scale attendants are afforded a climate controlled working environment. The attendants are also protected from potentially irate customers. As mentioned, the Landfill Manager's office is located within the scalehouse as well as all of the facility records. A small weather station has been set up to record daily weather conditions, temperature, wind direction and speed, and precipitation.

Citizens in the unincorporated areas of Buncombe County have the option of subscribing to collection services provided by their franchise hauler or hauling their waste to the BCSWMF. Citizens with household waste and/or recyclables

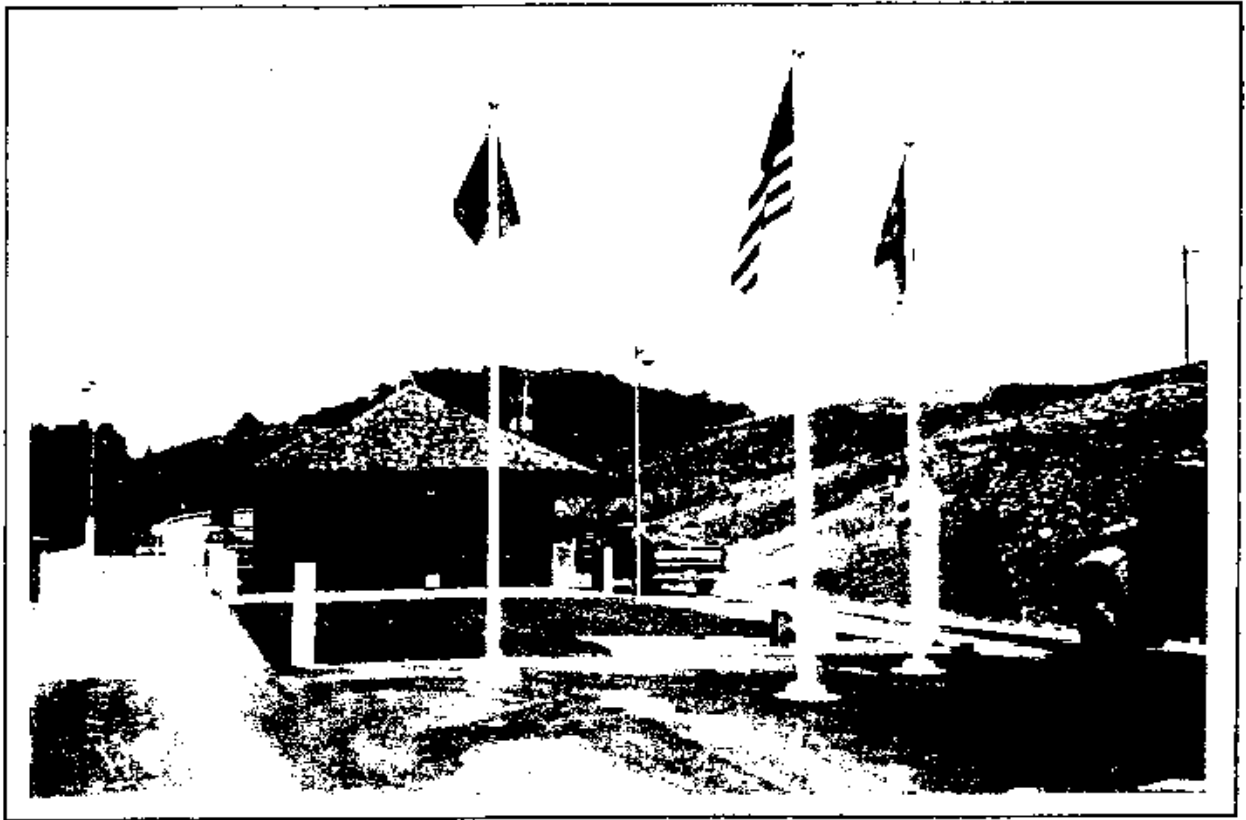




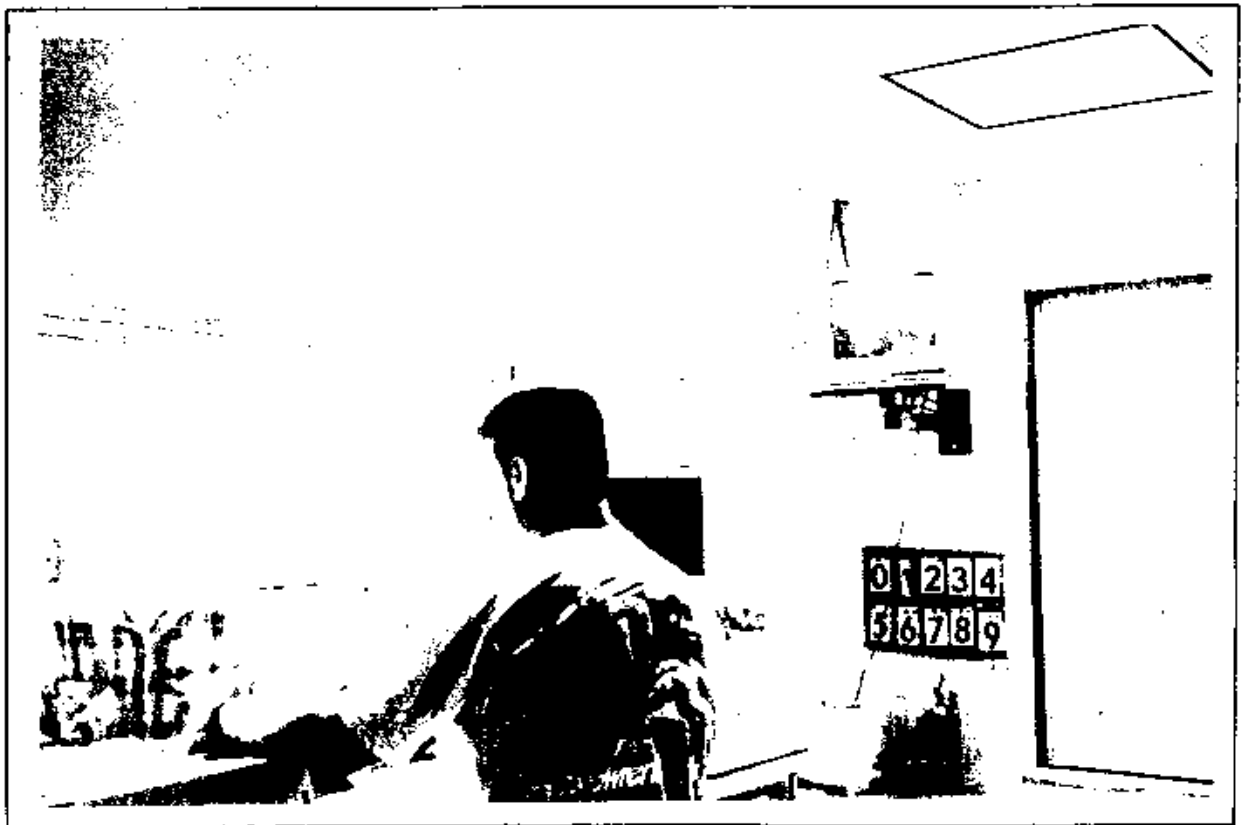
Photograph 5. Aerial view of the construction of Cells 1-3 and the landfill entrance



Photograph 6. Scalehouse and citizen convenience center



Photograph 7. Front view of scalehouse. Suspended video cameras record activity 7 days per week, 24 hours per day



Photograph 8. The scale attendant works in a climate controlled atmosphere and can screen waste in the hauling vehicle from the adjacent video monitor



are directed by the scale attendant over to the citizen convenience center seen previously in Photograph #6. Three open top, 40-cy containers are provided for household waste, while the fourth is designated for white goods. Several 8-cy boxes are provided for common household recyclables such as newspaper, cardboard, glass (three colors), aluminum and steel cans, and plastics as seen in Photograph #9. A separate covered area is provided for used oil and lead-acid battery collection as seen in Photograph #10. Commercial and residential customers can place tires in the trailer shown adjacent to the open top containers as seen previously in Photograph #6.

The hill to the left of the convenience center is sown with a variety of colorful wildflowers which bloom in the warmer months and make this area very attractive. A climate controlled shed is provided for the site attendant who assists the customers using the convenience center.

Wood Waste and White Goods Recycling Areas

Buncombe County has operated a very successful wood waste grinding/mulching program for many years. There is no charge to any customer, residential or commercial, who brings clean wood or yard waste to the BCSWMF. The wood waste is stockpiled in the wood waste handling area and then ground up by the County's tub grinder. This operation can be seen in Photograph #11. The resulting mulch is then sold to customers for \$8/cy and loaded into their vehicles as seen in Photograph #12. The diversion of yard waste and wood waste from the C&D landfill has greatly extended the life of this asset.

White goods and all metals are banned from landfill disposal at the BCSWMF. Customers can dispose of their white goods and ferrous and non-ferrous metals free of charge at either the citizen convenience center or in the metals processing area. In the processing area, the motors are extracted and Freon safely removed from the white goods. Photograph #13 shows a recent stockpile of metals awaiting removal. The County receives \$22/ton for its recovered metals.

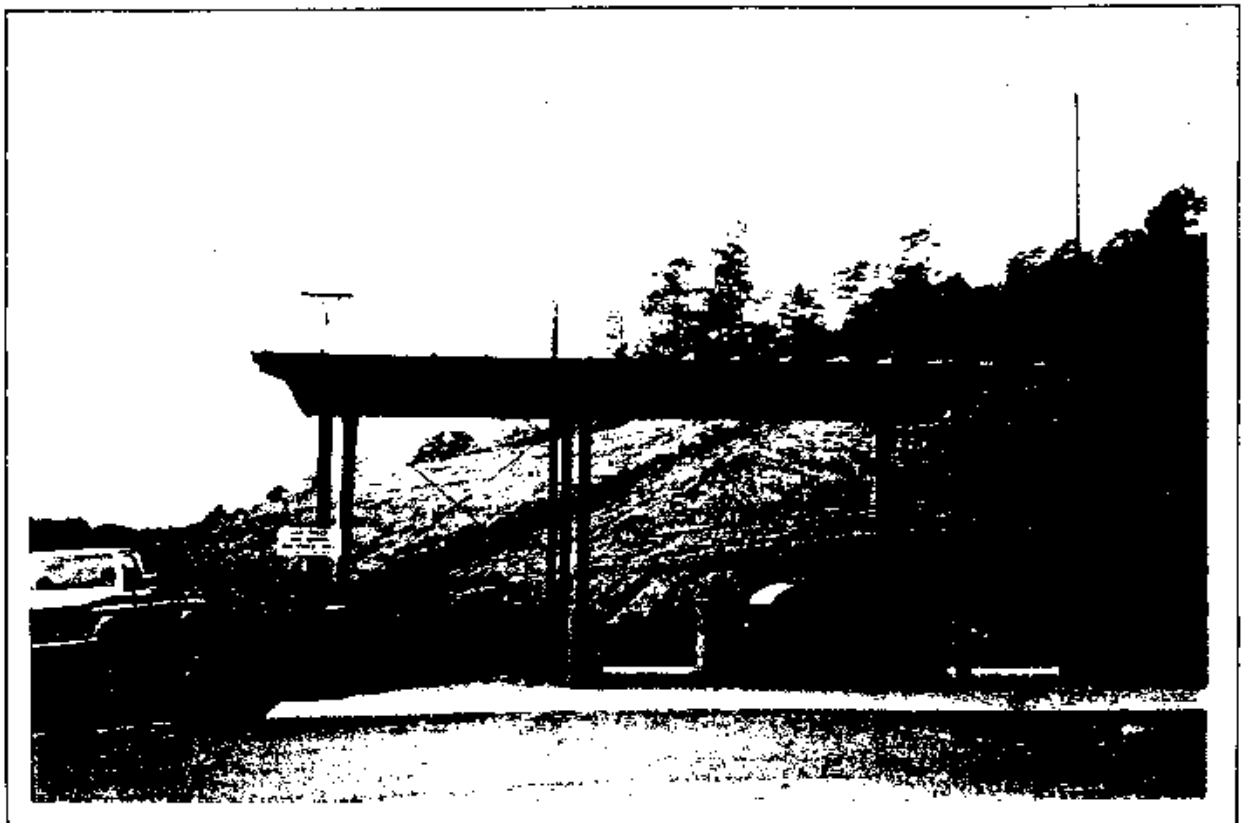
Construction and Demolition Waste Landfill

There are several areas of the 550-acre facility where the terrain is too steep to construct lined disposal cells. One of these areas was designed and permitted to accept construction and demolition (C&D) waste. C&D landfills are not required to be lined in North Carolina at this time. However, because the C&D landfill is underlain by the same complex hydrogeology as the Subtitle D landfill, extensive hydrogeological investigations were needed to prepare the groundwater monitoring plan. Photograph #14 shows the current C&D operation. The County's older compactor is used to spread and compact the C&D waste on an ongoing basis. The C&D landfill is covered weekly in accordance with the State Rules. The BCSWMF is the only permitted C&D landfill in the County and thus receives a significant amount of this material. Operation of the C&D landfill will extend the useful life of the Subtitle D landfill portion of the facility by 7 years.





Photograph 9. Containers for common household recyclables are provided at the citizen convenience center. An attendant is always on duty to monitor and assist.



Photograph 10. A covered collection area for used oil and lead-acid batteries is also provided at the citizen convenience center



Photograph 11. Wood waste stockpile and grinding area.



Photograph 12. Mulch is loaded into customers' vehicles at a cost of \$8/cy.



Photograph 13. The freon and motors are removed from the white goods and then stockpiled for removal by a local metals market at no charge.



Photograph 14. C&D waste is compacted continuously and covered once per week. C&D diversion saves valuable space in the Subtitle D Landfill.



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Employee and Maintenance Facilities

Several dwellings remained on the BCSWMF site after purchase by the County. One of these dwellings was refurbished during initial construction and converted into an employee building to save money and make effective use of available on-site resources. Photograph #15 shows the employee building along with two trailers associated with the ongoing construction of Cell 3. The Landfill Manager conducts employee training on a bi-weekly basis in the employee break room which is shown in Photograph #16.

A new equipment maintenance building is currently under construction at the BCSWMF. The pre-engineered metal building will be almost 1,500 square feet. The service bay is designed to accommodate the County's largest piece of equipment, the Rex 390 compactor. Waste fluids and floor drainage will pass through an oil/water separator and into a storage tank for later removal. The facility was designed with a small locker and wash room for the maintenance crew. Overhead space will be used to store spare parts and supplies. All OSHA requirements have been met including the provision of an emergency eyewash and shower. The building will be heated to allow for a comfortable work environment during the winter months.

MSW Composting Facility

An integral part of Buncombe County's solid waste reduction program is the MSW compost facility. When construction is completed, this facility will handle food waste from the local Farmers Market along with yard waste and non-white paper. The compost facility design provides storage for 60 days of active composting followed by a 30-day curing period and 90 days of finished product storage. The design incorporates includes a 1.4-acre concrete lined compost pad surrounded by a four foot high concrete wall. The pad includes a 45,500 square foot windrow, curing, and storage pile area; an 8,200 square foot pre-processing and staging area; and, a 7,200 square foot screening area. The wall provides a surface for pushing compost material into front end loaders and also serves to contain the surface water generated from moisture conditioning of the compost and stormwater runoff. The floor of the compost pad is graded such that all water flows into a central drainage trench which then conveys the water via a 10-inch diameter HDPE gravity drain to the leachate detention pond. Leachate can be recirculated from the leachate pond to through four hose connections to moisture condition the compost. A well provides fresh water for wash down of the pad. Should the composting operation prove successful (i.e., if the compost meets all regulatory quality standards and there is sufficient demand), the County has plans to expand the facility.





Photograph 15. An on-site dwelling, which remained after purchase of the site, was refurbished and serves as a facility for the site employees.



Photograph 16. The employee break room doubles as a training room every other week.



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Subtitle D Landfill Design and Permitting

Site Geology

The BCSWMF site is underlain to a large degree by granite gneiss and biotite gneiss. Marble and calc-silicate units are mapped in a small area near the French Broad River along the southern boundary of the site. A small east-west trending diorite dike runs along the bottom of Blevin Branch just north of the Cell 1-3 area. Subsurface investigations at the site indicate three geologic distinctions—saprolite, partially weathered rock (PWR), and bedrock. The bedrock is highly fractured and was a major concern in the development of the monitoring plan.

Site Hydrogeology

Water level measurements, slug tests, and two pumping tests were conducted to determine the hydrogeology of the site. Water levels at the site, for the most part, are below the top of the bedrock. The groundwater beneath the site is a complex three-dimensional system. Groundwater flow radially away from topographically high areas generally to the north toward Blevin Branch, or to the south toward the French Broad River.

Subtitle D Landfill Cell Design and Development

Two important factors influenced the design of the Subtitle D landfill portion of the BCSWMF: the mountainous terrain and cost. The steep terrain provided obvious design challenges while the cost of the facility had to be as low as possible since the County was already losing 30% of its waste stream to an out-of-state landfill. The Subtitle D Landfill will provide capacity for approximately 6.8 million cubic yards of waste and an estimated 34 years of operational life. Because of the complexity of the site, initial phases of the design process focused on developing digital terrain models (DTMs) of the bedrock and groundwater surfaces. The design of the landfill bottom grades for the Phase I area (approximately 21 acres) was complicated due to the following:

- natural topography within the Phase I area had average slopes of greater than 3 horizontal to 1 vertical with many areas as steep as 1:1.
- the depth from ground surface to bedrock varied from 5 to 50 feet; depth from ground surface to groundwater varied from 0 to 80 feet
- in some areas the groundwater table was above bedrock and in some areas the groundwater table was below bedrock.

Therefore, a composite DTM which represented the higher elevation when comparing the groundwater and bedrock surfaces was developed and utilized to set the lowest landfill bottom grade possible and hence maximize landfill





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capacity. The result was a landfill design which "mirror-images" the composite DTM surface while maintaining a minimum of 4-foot separation from groundwater. The final landfill grades were then adjusted in consideration of slope stability in this seismic impact zone and the potential for encountering non-rippable rock outcrops. To reduce the potential for groundwater contamination, the landfill was designed with no liner penetrations. Leachate is collected in each cell and pumped by sump pumps which are installed in 18-inch HDPE side slope riser pipes.

Another important design feature of this project is the more than 3,000 feet of spring drain that was permitted and constructed. There were several small springs that were piped, however, the most significant one was 2,500 feet long through the middle of the site. The piping of this spring was the one item that made this site economically feasible. If this feature could not have been piped, it would have cut the life of the site in half from 30 years to 15 years.

In May 1994, the Department submitted its cost to construct the new landfill and five year tipping fee projections along with several private companies who advocated out-of-county disposal. Based on projections showing the County landfill tipping fee to be about \$31/ton for the five year period, the Commissioners decided to move forward with the project. A cost-effective design resulted in construction costs well below budget and the County was able to keep the tipping fee at the same rate as was being charged at its unlined landfill (\$28/ton). This will result in annual savings of approximately \$500,000. The landfill will continue to be developed in economical phases in order to maintain a tipping fee that is competitive with alternative disposal options.

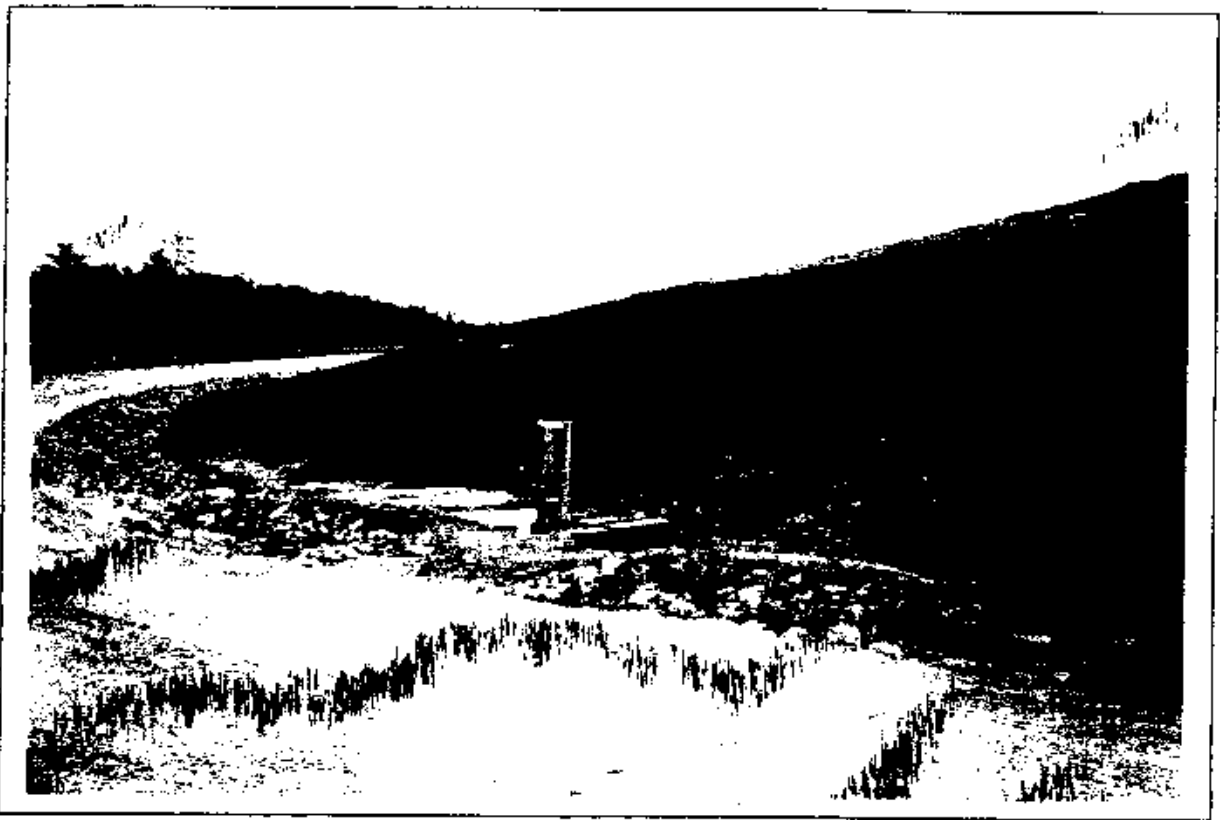
Leachate Collection and Treatment Systems

In lieu of typical drainage sand, the leachate collection system was designed with two feet of crushed stone which was readily available in this mountain region. The internal slopes of the landfill were sufficiently steep and the stone of such high permeability that leachate collection pipes were not necessary. This saved the County approximately \$100,000 on Phase I alone. The synthetic liner is protected from the stone layer by a 24-oz. fabric cushion.

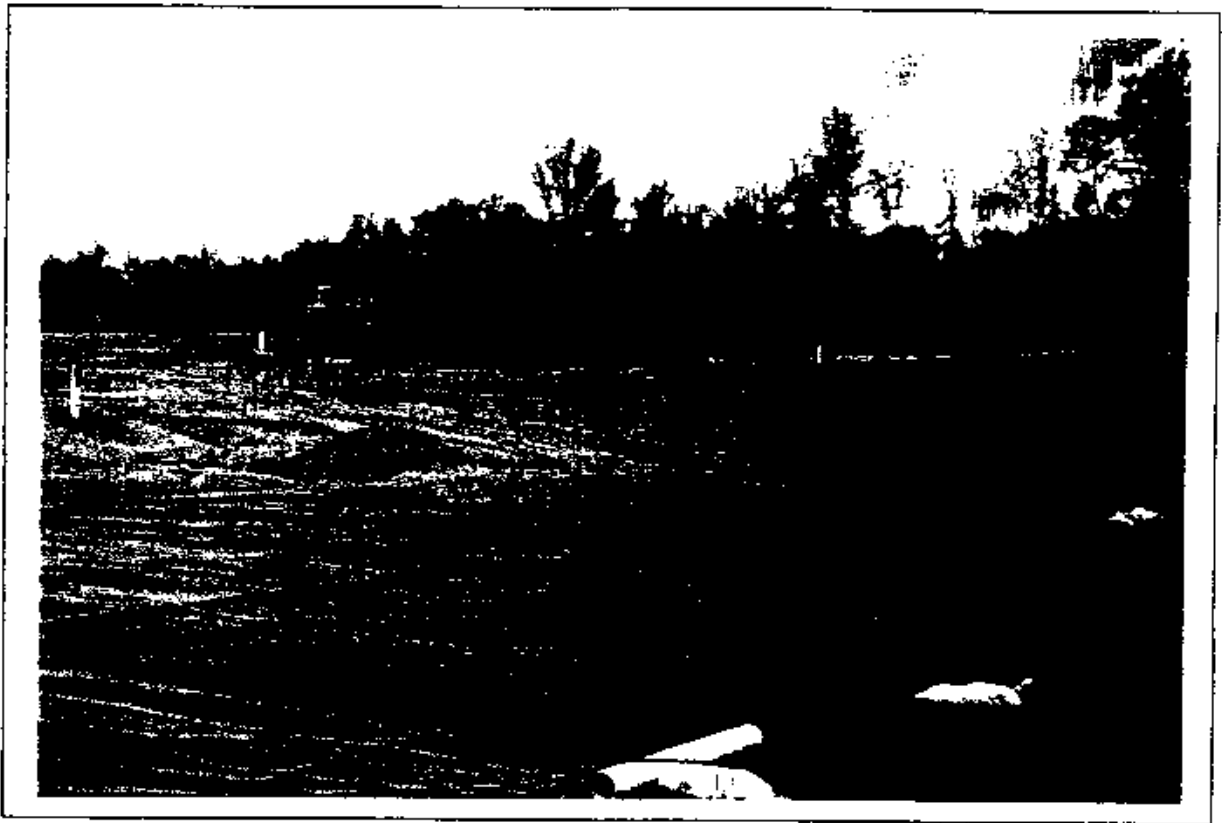
A seven mile leachate force main was designed to convey the leachate to the County's regional WWTP, however, due to the rocky terrain along the force main route, construction bids were higher than expected and pump-and-haul was determined to be the least cost, long-term alternative. The leachate is sampled periodically with a composite sampler in accordance with the County's leachate pre-treatment permit. Leachate is hauled to the County's regional WWTP.

After initial fill placement, temporary diversion berms are being used within the landfill area during filling activities to segregate the clean stormwater from the deposited waste. Stormwater falling upstream of the berm will be considered clean water and will be diverted to the perimeter drainage ditches.





Photograph 17. The dedicated sump pump in each cell discharges leachate into the force main which rings the landfill.



Photograph 18. Native crushed stone was used in the leachate collection system. The synthetic liner is protected with a 28 oz. fabric cushion.



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Operations, Training, and Public Education

Daily Operations

As seen in the previous sections, there are several solid waste disposal and processing/recycling areas located at the BCSWMF. To facilitate the customers' access around the BCSWMF, the County devised an easy-to-follow direction system. Each area of the site was assigned a number and all of the on-site directional signs use this system. The scale attendant can then tell the customer, "proceed to Area 1 with that yard waste" and all the customers have to do is follow the signs to Area 1. The County has found this approach to be successful in eliminating customers from wandering around the site lost. An example of one of these signs can be seen in Photograph #13. Individuals hauling their own waste are encouraged to use the convenience center to reduce site traffic.

Full-time spotters are located in the C&D and MSW disposal areas to ensure safe ingress and egress, as well as to ensure that the proper materials are going to the proper facility. The waste materials in both the C&D landfill and the MSW landfill are being constructed daily in lifts of approximately 8 to 10 feet in height. The County has invested in a new Rex Model 390 compactor (one of the heaviest units on the market) to maximize airspace usage in the Subtitle D landfill. Photograph #19 shows the compactor in action. Bi-annual compaction studies are showing a dramatic increase in compaction rates. The County's existing Rex 390 compactor is now used at the C&D landfill. A significant amount of MSW is transferred to the facility via the County's transfer station. This minimizes traffic as well as allows for a smaller working face which helps increase compaction rates. Solid waste is covered daily with soil which was stockpiled during construction of the C&D landfill. C&D waste is covered weekly.

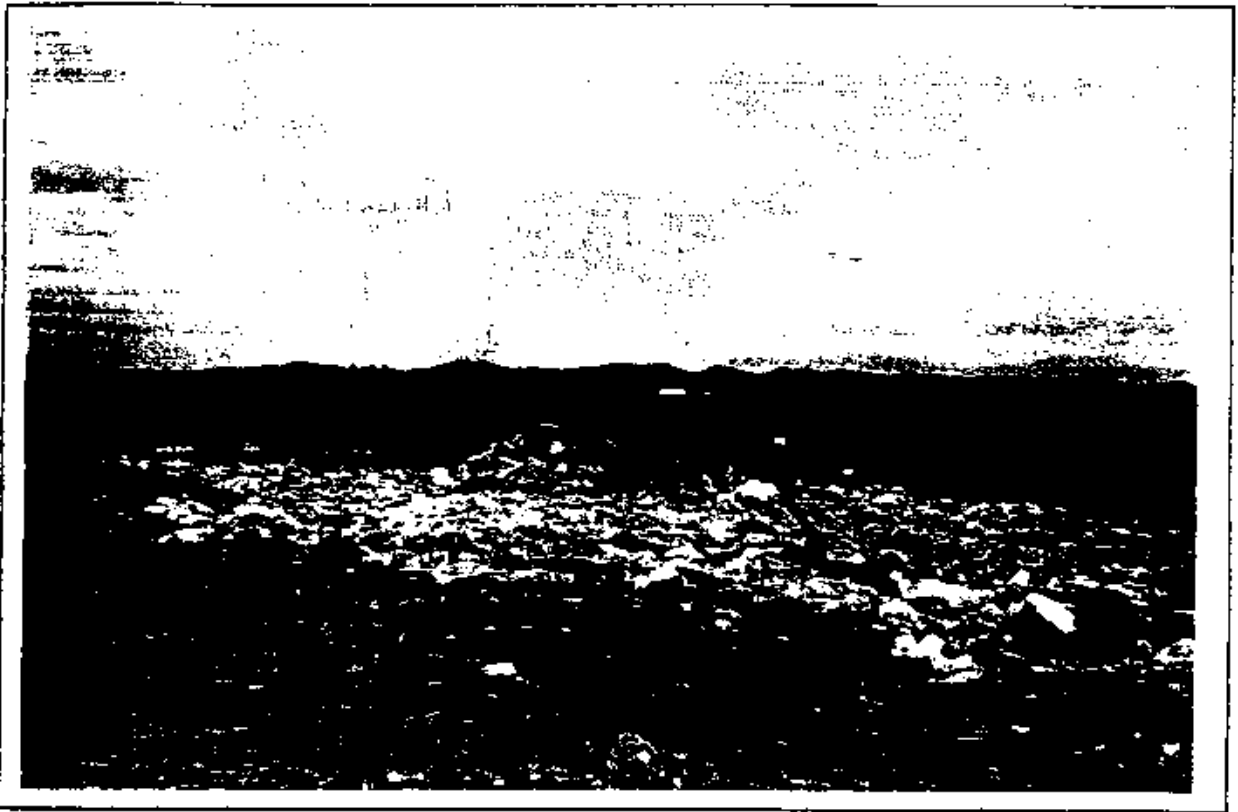
Buncombe County has one full-time trained hazardous waste inspector on duty during operating hours. The inspector performs random waste screens each day at both the MSW landfill and the C&D landfill. All of the site supervisors, inspectors, spotters, scale attendants, and equipment operators are provided with two-way radios so that everyone at the facility is in constant communication.

Employee Training

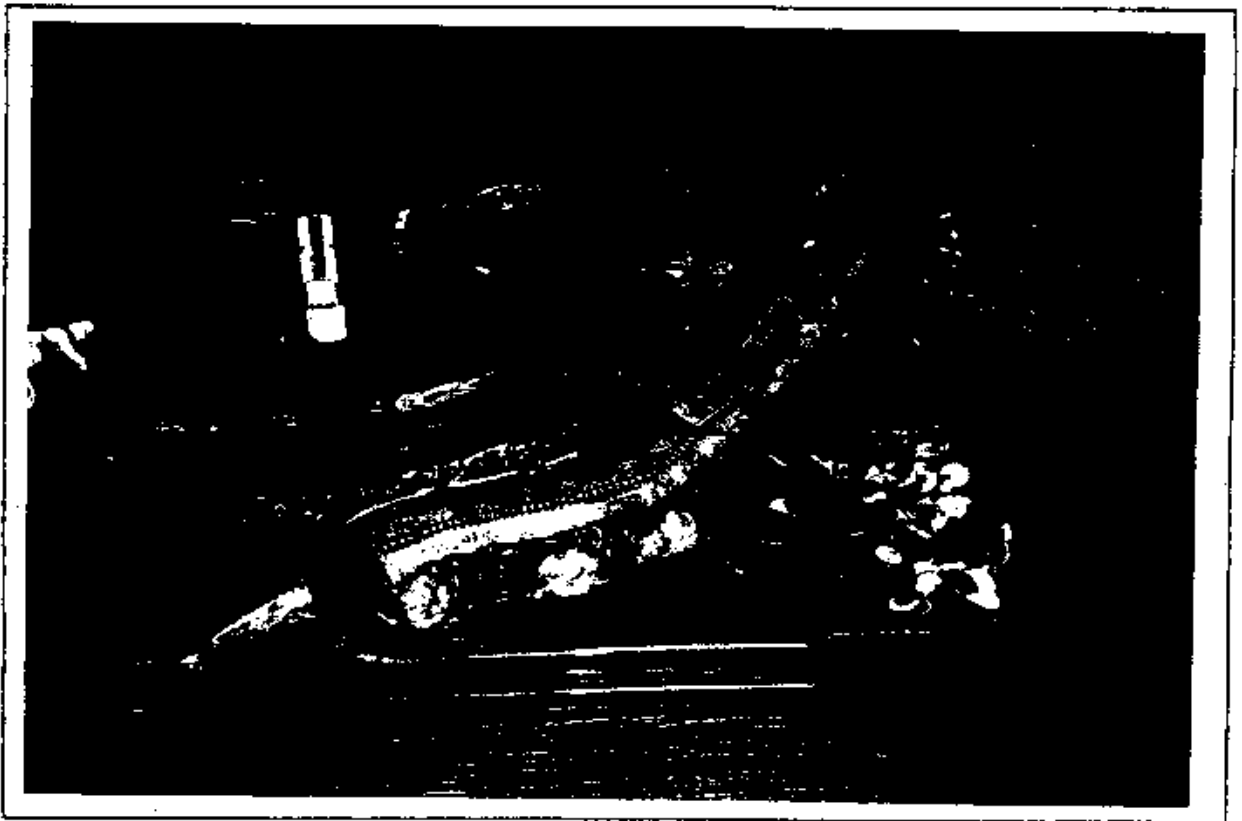
Training is an integral part of daily operations at the BCSWMF. Every two weeks, on pay day, workers are shown instructional videos on topics such as health and safety, waste screening, equipment safety checks, and maintenance. The County provides uniforms, steel-toe shoes, rainsuits, earplugs, and hardhats to all employees.

Buncombe County is a major supporter of the North Carolina SWANA Chapter and its training courses. During 1998, the County hosted the Chapter's Waste Screening course and had six of its employees formally trained. Buncombe





Photograph 19. The County's new Rex 390 Compactor has significantly increased compaction rates.



Photograph 20. Hands-on model used by the County's Recycling Coordinator to show the impact of contaminated runoff on the County's surface waters.



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County will be hosting a Chapter partnering MOLO course on April 27-30, 1999. The County already has three MOLO certified operators and will be training two additional staff. In addition, the County has two certified transfer station operators, one certified recycling manager, two certified leachate and groundwater monitoring specialists, and one overall certified landfill specialist.

Site Security

Due to the enormous size of the site, fencing the entire facility was determined to be cost prohibitive. The County is able to rely on natural barriers such as thick wooded areas and steep, rocky slopes on almost 75% of the site perimeter to restrict access in these areas. In other areas, barriers, such as piles of rock and/or trees have been erected along paths into the site. Alarm systems have been installed in all on-site buildings and the camera system records any overnight activities.

Several of the properties purchased as part of acquisition of the site contained active residences. The County remodeled three of these homes and offered them to Buncombe County Sheriff's deputies at below market rents. In exchange, the deputies provide on-site security during non-operating hours. The County provided the deputies with "four wheeler" ATVs to move around the site. Many of the surrounding residents have expressed gratitude at the presence of the deputies in their neighborhood.

Public Education

Buncombe County has one full-time Hazardous Waste Officer/Recycling Coordinator. Three slides from a presentation designed to instruct local businesses in the proper handling of hazardous wastes are provided in the Supplemental Material. The County provides a certification program in hazardous waste handling. Photograph #20 shows one of several hands-on models that are used in the schools. This particular model shows the impact of runoff from various land uses, including the landfill, on nearby water resources.

The County distributes several educational brochures, some of which are provided in the Supplemental Material. Roadside litter was a major focus during the past year and the County distributed free tarps to all landfill customers in April. The County also assists local farmers in the proper handling of used pesticide containers and offers a free collection program in cooperation with the local agricultural extension office.





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Environmental Monitoring

Ground and Surface Water Monitoring Programs

As mentioned previously in the Subtitle D Landfill Design section, the groundwater system beneath the BCSWMF is largely composed of a complex fractured bedrock system. Using the data generated in the hydrogeological investigation of the site, the groundwater monitoring plan for the site focused on the three identified flow regimes: the deep fractured bedrock system (the predominant system); the shallow bedrock system; and the saprolitic system. It was determined that each of these systems needed to be monitored separately. Ensuring that the wells were constructed in the proper water bearing units proved to be the most significant challenge of implementing the plan. Drilling observations and air lift yield tests were utilized to identify the water bearing fracture zones within the bedrock system.

The two background wells for the site ranged in depth from 35 to 50 feet for the shallow zone to 80 to 90 feet for the deeper bedrock zone. The downgradient wells ranged in depth from 30 to 40 feet for the shallow wells to as deep as 80 feet for the bedrock wells. State mandated well construction and development protocols were used on all wells.

Because predicting groundwater flow in the deep, fractured bedrock system cannot be done precisely, an alternative monitoring system was added to the groundwater monitoring plan for the facility. Since the site grades are relatively steep, the most likely area for a potential leak of significant consequence would be in the sump area within each cell. Therefore, the site grading plan was modified beneath each cell to allow the construction of a "witness zone". The alternative monitoring system consists of 60-mil HDPE liner placed on prepared subgrade. Any leakage through the primary composite liner system in the sump area would be collected on this liner and feed to a sump. A 4-inch pipe drains the sump out beyond the footprint of the disposal cells. The outlet end of the pipe is capped and sampled semi-annually (if there is any water in it) along with the on-site monitoring wells. Photograph #21 shows the alternative monitoring system in Cell 3. A total of 13 upgradient and downgradient wells were installed to monitor Phase I. The groundwater monitoring system is monitored by an outside contractor semi-annually for the Appendix I parameters as required by the North Carolina Solid Waste Management Rules. The BCSWMF is in compliance with all North Carolina groundwater monitoring regulations.

Surface water quality is monitored at three stations around the facility. All of the surface water runoff from the site flows to the north through erosion control structures and into Blevin Branch. Blevin Branch is monitored at the eastern end of the site where it originates and at the western end where it exits the BCSWMF. The outlet from the major spring drain in the middle of the site is also monitored





Photograph 21. Construction of the alternative monitoring system in Cell 3.



Photograph 22. BCSWMF Environmental Manager monitoring an on-site landfill gas monitoring well.



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semi-annually at the same time as the groundwater. No violations of the North Carolina surface water quality standards have been recorded at the facility.

Buncombe County has a full-time on-site Environmental Manager who oversees all of the monitoring programs at the facility. The Environmental Manager schedules the semi-annual monitoring events, reviews the results, compiles and submits reports, and maintains the results in the facility's operating record.

Landfill Gas Migration/Emissions Monitoring Programs

At buildout, landfill gas migration monitoring wells will be installed around the perimeter of the BCSWMF. The system will be installed in phases as the landfill footprint expands. There are currently two monitoring wells installed at critical places around Phase I of the facility. The Environmental Manager monitors these wells quarterly in accordance with State rules as shown in Photograph #22. The readings are recorded and filed in the operating record. A detailed landfill gas monitoring plan has been developed as part of the Operating Plan for the BCSWMF and it outlines what steps are to be taken if an exceedance of the regulatory limits is detected. The Department's Hazardous Waste Officer is trained in handling any emergency situations which might arise out from a landfill gas release.

With a design capacity of more than 3,000,000 tons, the BCSWMF must comply with the NSPS and obtain a Title V permit. The County has submitted annual NMOC reports to the Western North Carolina Regional Air Pollution Control Agency (WNCRAPCA) as well as a Title V permit application. The Title V permit application is currently under review. NMOCs are below 50 Mg.

NPDES Stormwater Permit Monitoring

Municipal solid waste landfills in North Carolina are all covered under a General NPDES stormwater permit. The County is only required to visually monitor each sediment pond weekly for clarity and odor since the ponds were designed to handle the 25-year storm.

Data Management

With the extensive amount of monitoring that is required at solid waste management facilities today, data management has become a critical function. The BCSWMF's Environmental Manager is currently using USEPA's Basins 2.0 software to compile the facility's monitoring data. In addition to compiling and storing data, this software is capable of projecting the fate and transport of contaminants and will allow the Department to project and plan for any potential problems before they arise.





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Site Environmental Enhancements

In addition to the extensive landscaping improvements that Buncombe County has made along the entranceway to the BCSWMF, the County has embarked on several other projects that will enhance the environment on and around the site as well as provide for additional recreational opportunities for its citizens.

Alexander Regional Park

In cooperation with the Western North Carolina Bicycle Dealers Association, the North Carolina Division of Parks and Recreation (NCDPR) Trails Program, and the International Mountain Bicycle Association (IMBA), a master park plan has been developed for those portions of the BCSWMF site that are not intended for use in the disposal operations. The major focus area of the park will be along the site's scenic frontage to the French Broad River. The terrain from the French Broad River to the interior of the site is very steep and thus the riverside areas are shielded from the disposal operations.

The park will be developed with facilities which will include a 1.5 to 2.0 mile walking/biking trail along the river, a boat access, a handicap-accessible fishing platform, and the development of approximately 12 miles of beginner, intermediate, and advanced mountain bike trails. A future phase will include an additional 18 miles of mountain bike trails to include a professional mountain bike race course. One of the on-site trails that will be used in the mountain bike course are shown in Photograph #23. The IMBA has designed the mountain bike trail system while the NCDPR has designed the riverside facilities and is working on grant applications to finance the park. The river-side trail will eventually link into a regional greenway system along the French Broad River being planned by the RiverLink organization. The goal is to have the Phase I facilities operational during the year 2000. The area designated for mountain biking is shown in the Supplemental Information which is taken from the master plan.

Buncombe County considers it very important to mesh beneficial uses/re-uses with its disposal facilities. The County is currently in final negotiations with a private contractor and operator to construct an 18-hole championship golf course on its old landfill. The landfill stopped receiving waste in late 1997 and closure was completed in 1999. A color rendering of the golf course design is provided in the Supplemental Information.

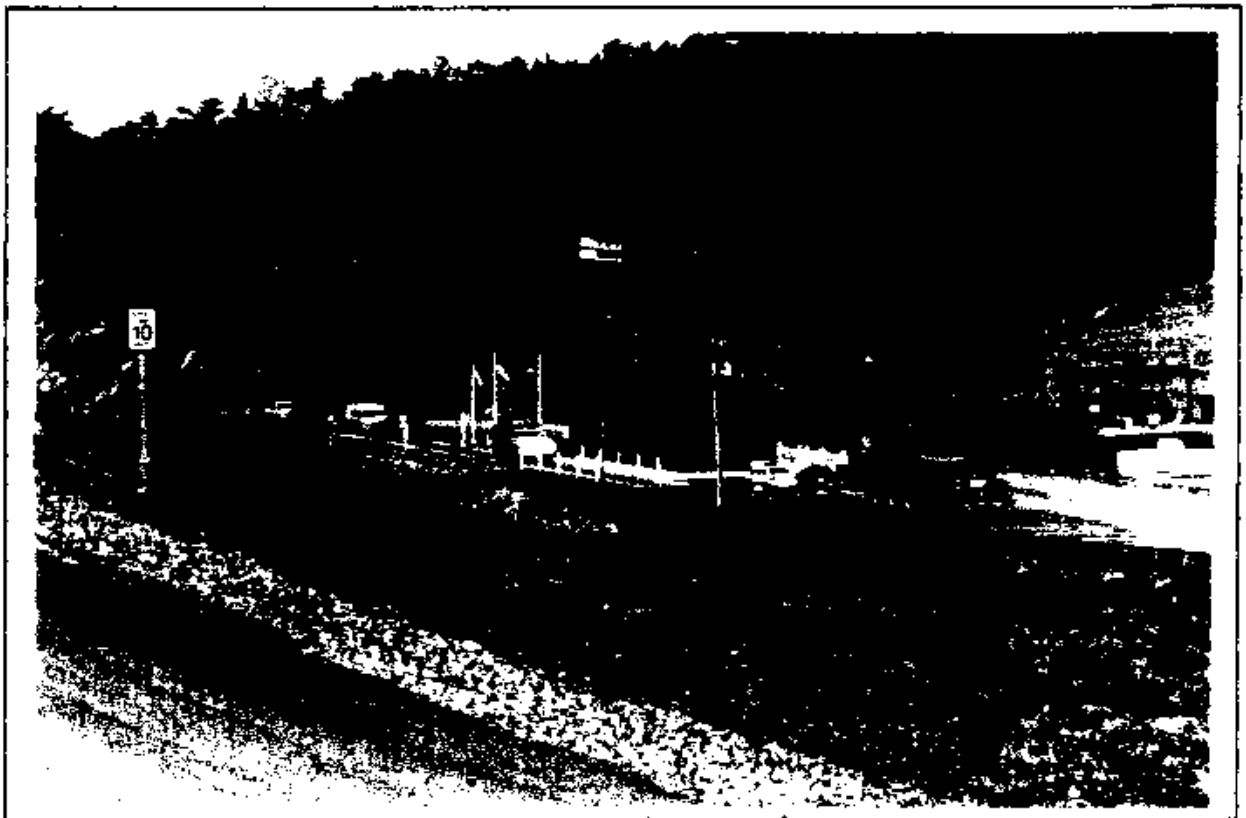
Reforestation Program

Because of its location at a relatively high elevation, the BCSWMF can be seen at great distances from other mountain vistas. In order to minimize the visual impacts of the facility, the County has made a commitment to maintain forested cover across the site to the greatest extent possible. Shortly after opening the facility, the County began working with the North Carolina Division of Forest





Photograph 23. An on-site trail which will be used as part of the mountain bike course.



Photograph 24. A purple martin birdhouse located near the scalehouse.



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Resources to reforest the perimeter of the landfill site to enhance the site buffer. Several of the properties that were obtained along the perimeter had been used recently for agricultural uses and thus were devoid of trees.

In 1993, three years before the facility opened, the County planted several staggered rows of white pine in the buffers. White pines were chosen because of their evergreen nature as well as for the fact that they provide good visual screening, and are most suited for the on-site soils. Reforestation activities occurred in both 1997 and 1998, and are planned again for 1999. An excerpt from the County's preliminary reforestation plan is provided in the Supplemental Material. The long-range plan for the facility is to annually reforest areas that have been disturbed for the removal of cover material and other site uses. In other areas of the site, wildlife food plots are being established as part of the reforestation plan to improve water quality and for wildlife enhancement.

Birdhouse Program

Insects can be a problem at municipal solid waste landfills. To minimize the insect population as well as enhance the wildlife diversity around the site, Buncombe County constructed and erected more than 100 birdhouses around the site. The birdhouses were specially designed and positioned to attract the purple martin. It is documented that one purple martin will consume 3,000 mosquitos every day. As additional disposal cells are constructed, the County will construct additional birdhouses around these areas. Photograph #24 shows one of the birdhouses on the access road up to the waste disposal and processing areas.

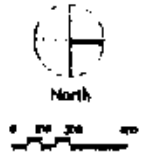
Adopt-A-Highway Program

The North Carolina Department of Transportation (NCDOT) sponsors a state-wide roadside cleanup program called "Adopt-A-Highway". Primarily businesses and civic organizations register to clean up stretches of highway on a regular basis. Adopt-A-Highway signs are erected at both ends of the designated area and the sponsoring group is recognized on the sign. The Buncombe County landfill staff formally participate in this program by regularly cleaning not only the portion of NC 251 than runs through the landfill property but also the area within one mile of the site to the north and the south. Official Adopt-A-Highway signs have been posted recognizing that the BCSWWMF staff are part of the program. In addition to the formal NCDOT program, the County cleans all of the roads within a one-mile radius of the site, including Panther Branch Road, Lower Flat Creek Road, and Flint Hill Road every Monday, Wednesday, and Friday.



Golf Course Scorecard

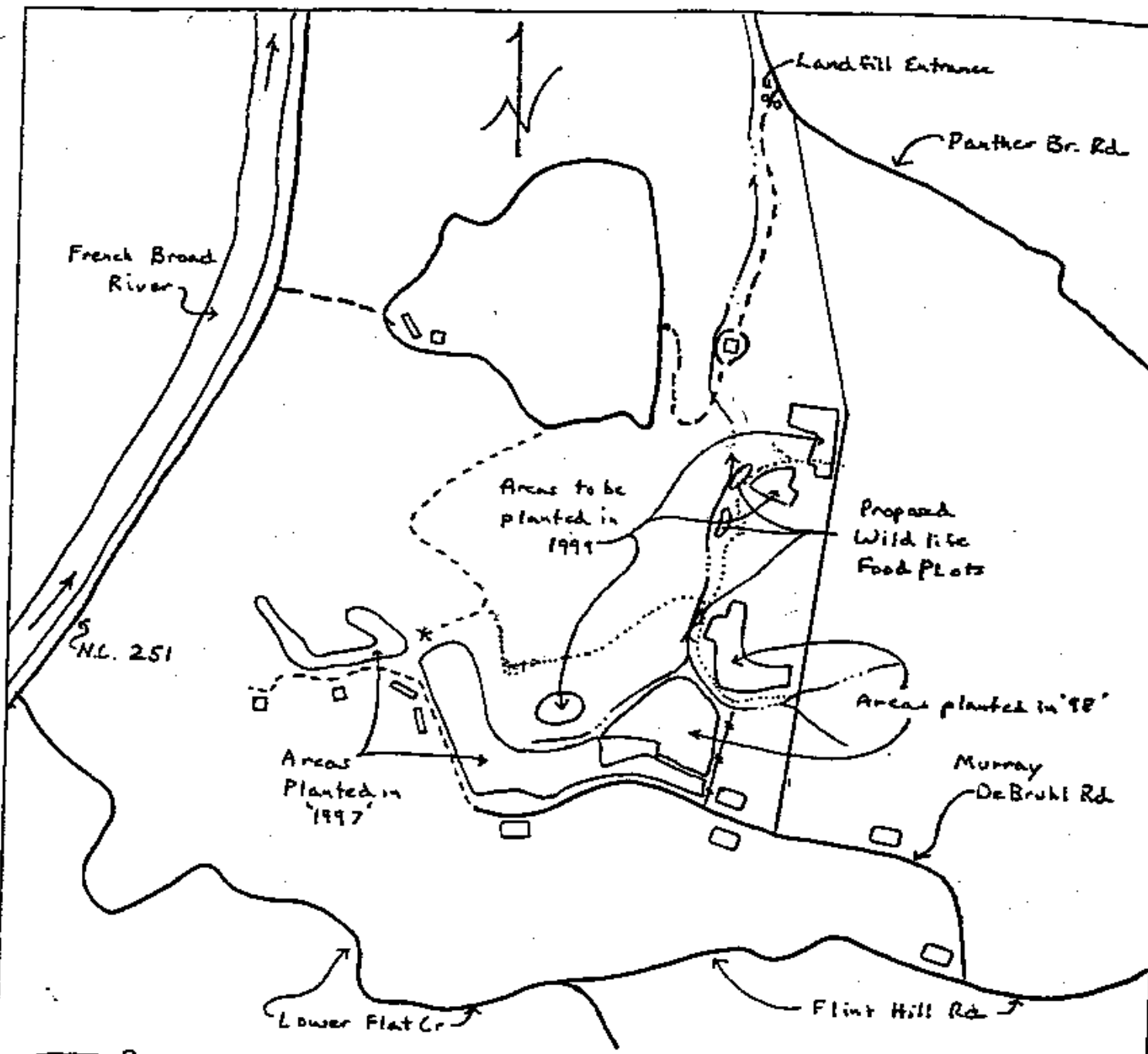
Hole	Par	Yardage
1	4	450
2	4	375
3	4	400
4	3	210
5	4	375
6	4	375
7	4	400
8	4	400
9	4	400
10	4	400
11	4	400
12	4	400
13	4	400
14	4	400
15	4	400
16	4	400
17	4	400
18	4	400
Total	72	6525



Buncombe County
Board of County Commissioners

*Buncombe County Golf Course
Master Plan*

September 1997
PBS&J



--- Road Stabilization Project
Total length 2177'

□ Planting Project - White Pines
Total Acres 3ac

MAPPING METHOD

REDDI-MAPPER	COMPASS & CHAIN
AERIAL PHOTO <input checked="" type="checkbox"/>	FREEHAND SKETCH
ACREAGE DATA & BOUNDARIES ARE APPROXIMATE	

OWNER	Buncombe Co. Landfill
COUNTY	Buncombe
DRAWN BY:	D. Walker
DATE	February 1999
AERIAL PHOTO NO.	
SCALE	NTS
GRID COORD.	B 41 S 8 P 11



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Supplemental Material



**NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES**

DIVISION OF WASTE MANAGEMENT



**JAMES B. HUNT JR.
GOVERNOR**

**WAYNE MCDEVITT
SECRETARY**

**WILLIAM L. MEYER
DIRECTOR**

April 19, 1999

SWANA

Attn: Excellence Awards Program
Post Office Box 7219
Silver Springs, MD 20907-7219

Re: Buncombe County Municipal Solid Waste Landfill

The Buncombe County MSW Landfill is an excellent example of design and operation of a Solid Waste Management Facility in North Carolina.

The site for this facility presented many complex challenges in existing topography, geologic and hydrogeologic evaluation, and construction. The design for this facility overcame these challenges and meet and exceeded the requirements of the State of North Carolina.

North Carolina can proudly point to this facility as an excellent example of a well designed, constructed, and operated landfill.

Should you have any questions or if we can provide any further information, please feel free to contact me at (919) 733-0892.

Thank you,



William D. Sessoms

copy: James C. Coffey - DWM
Cheryl Marks - DWM
Al Hetzell - DWM
Bob Hunter - Buncombe County

C:\SESSOMS\PROJECTS\BUNCOMBE\LETTER.20

NC DEPARTMENT OF ENVIRONMENT, HEALTH AND NATURAL RESOURCES
 Division of Solid Waste Management
 Solid Waste Section
 SOLID WASTE MANAGEMENT FACILITY EVALUATION REPORT

Type of Facility MSW Landfill Permit # 11-07 County Burke

Name of Facility Burke Co SWM Facility Location 85 Panther Branch

Date of Last Evaluation July 22 1998

Component
 C+O Landfill /
 yardwaste /
 white goods /

I. Permit Conditions Followed Yes No NA

A. Specific Condition(s) Violated

II. Operational Requirements Followed Yes No

ISA N.C. Admin. Code Title Section 1626

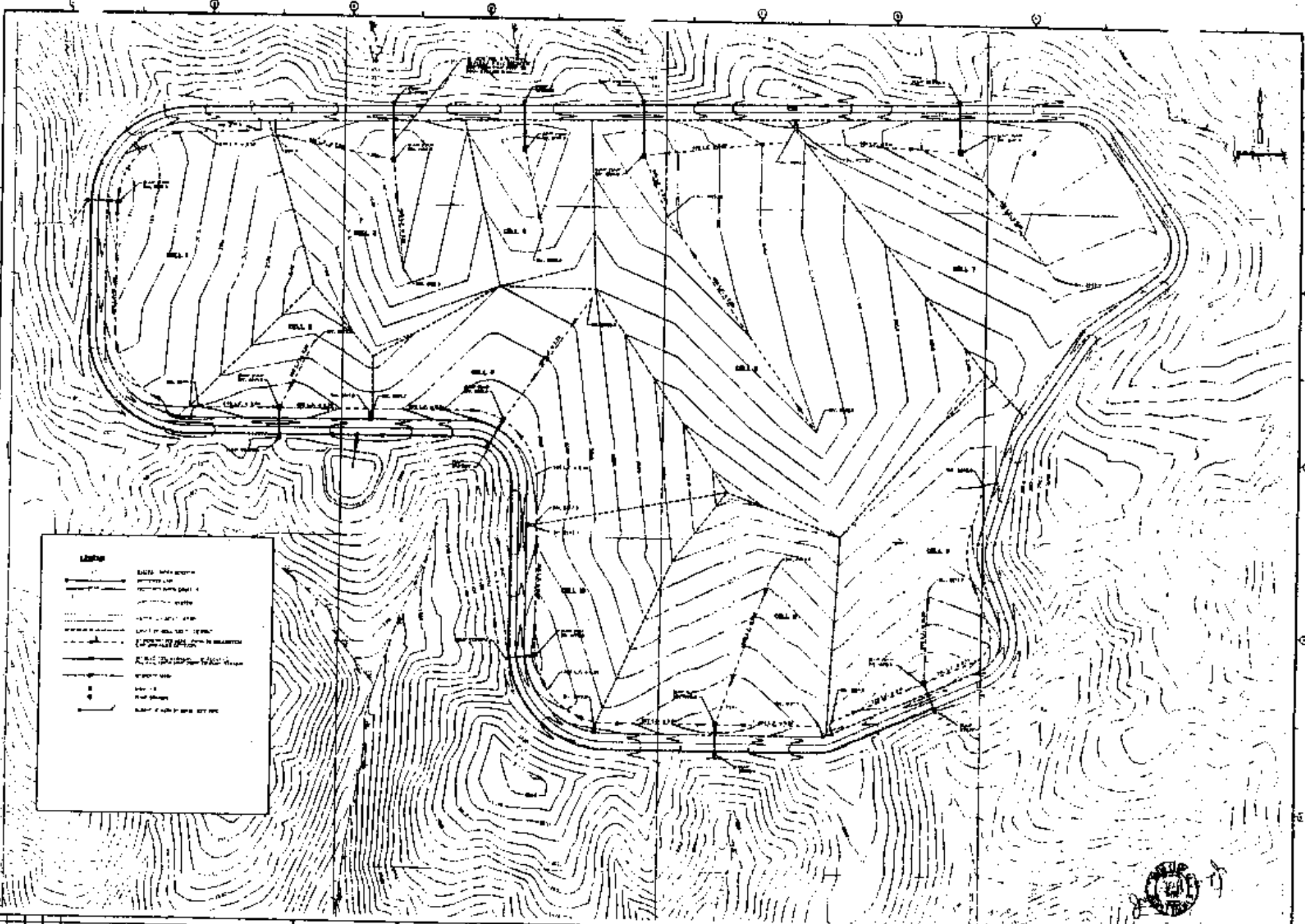
A. Specific Violation(s) by number and letter.

III. Other Violations of Rule or Law

IV. Evaluator's Comments

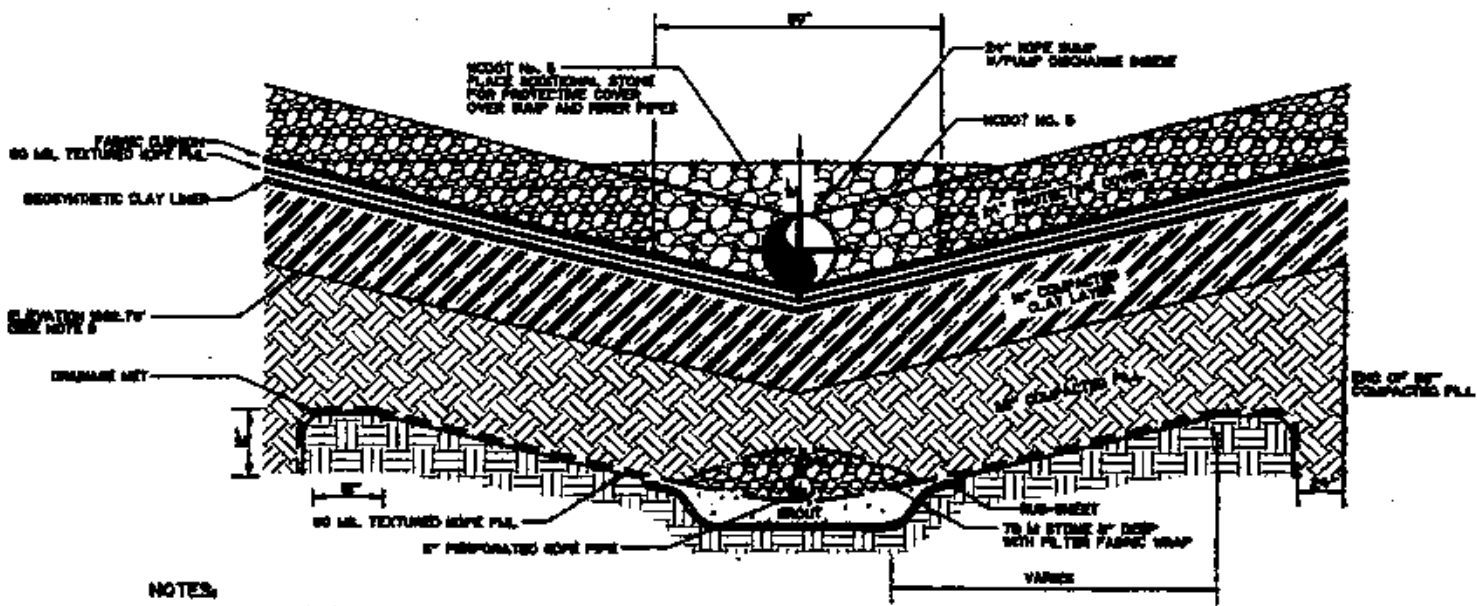
V. Certification Page Required? Yes No Receiving Signature Jerry D. Means

Evaluation Date Oct 2, 1998 Solid Waste Section [Signature]



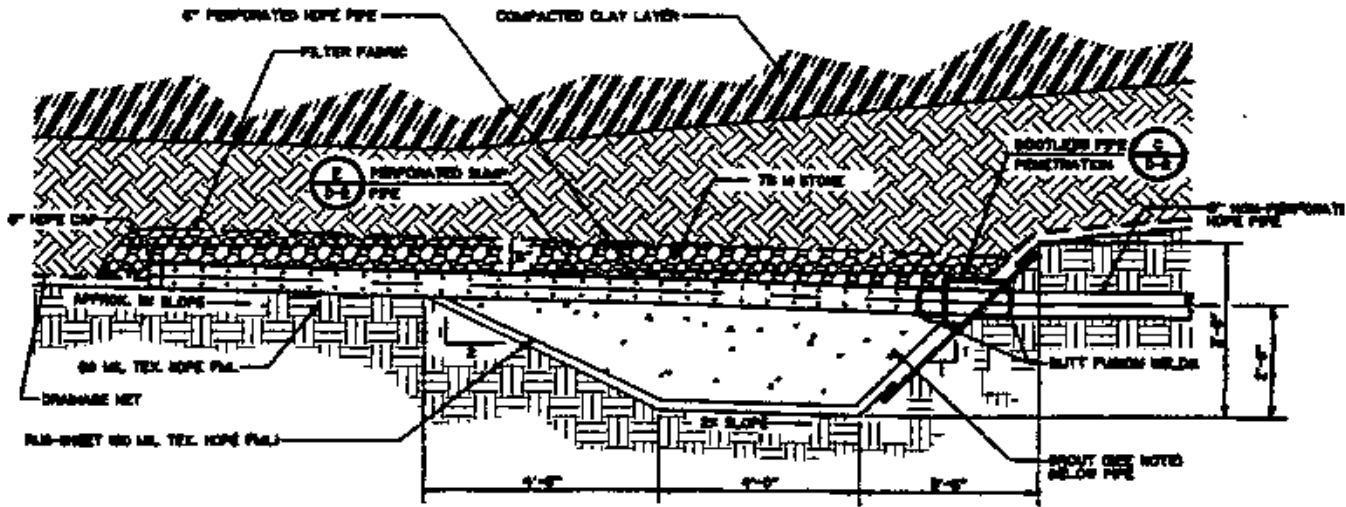
Legend

	EXIST. HIGHWAY
	PROPOSED HIGHWAY
	PROPOSED WATER MAIN
	PROPOSED SEWER
	PROPOSED GAS
	PROPOSED FIBER OPTIC
	PROPOSED CONCRETE
	PROPOSED METAL
	MANHOLE
	VALVE
	PROPOSED STRUCTURE



- NOTES:**
- 1) SEE SHEET D-3 FOR LAYOUT OF THE PERFORATED MONITORING SYSTEM. LAYOUT LISTS FOR THE GROUNDWATER MONITORING SYSTEM TO CORRESPOND TO ELEVATION BAWP ON PROPOSED BRIDGE PLAN.
 - 2) BROU AREA UNDER PERFORATED COLLECTION PIPE TO ELIMINATE PONDING ON LINES.

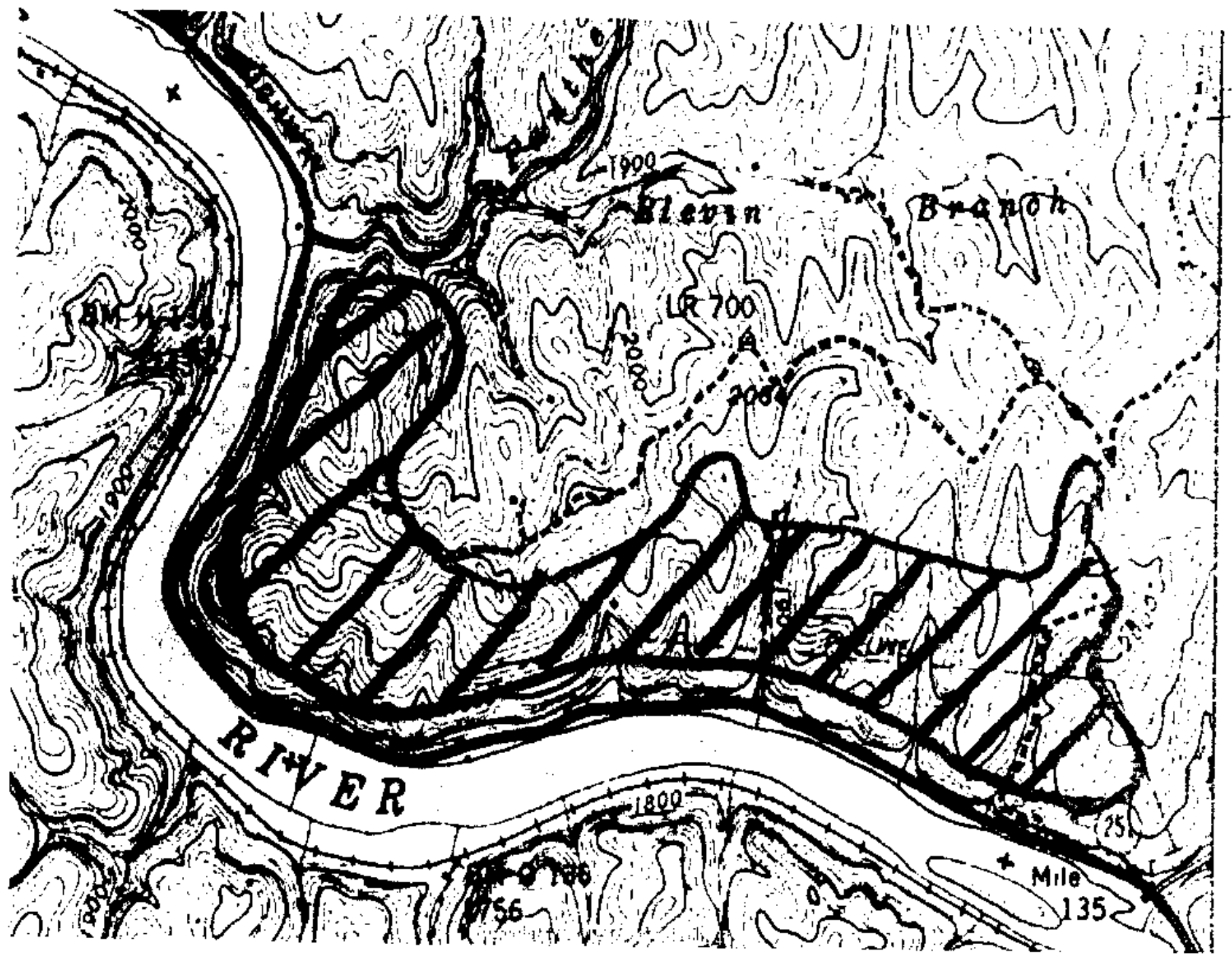
GROUNDWATER MONITORING SYSTEM



- NOTES:**
- 1) BROU AREA UNDER PERFORATED COLLECTION PIPE TO ELIMINATE PONDING ON LINES.

GROUNDWATER MONITORING SUMP SECTION

BUNCOMBE COUNTY - ALEXANDER REGIONAL PARK

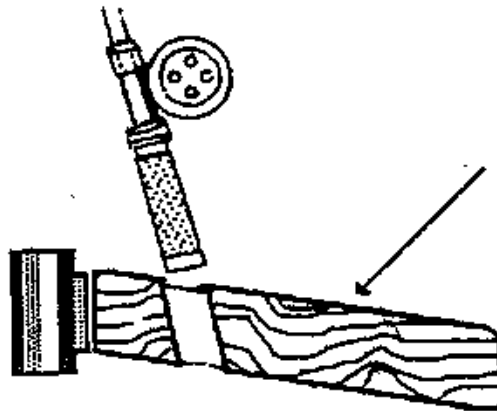


MOUNTAIN BIKE TRAILS

FISHING FACILITY ILLUSTRATIONS

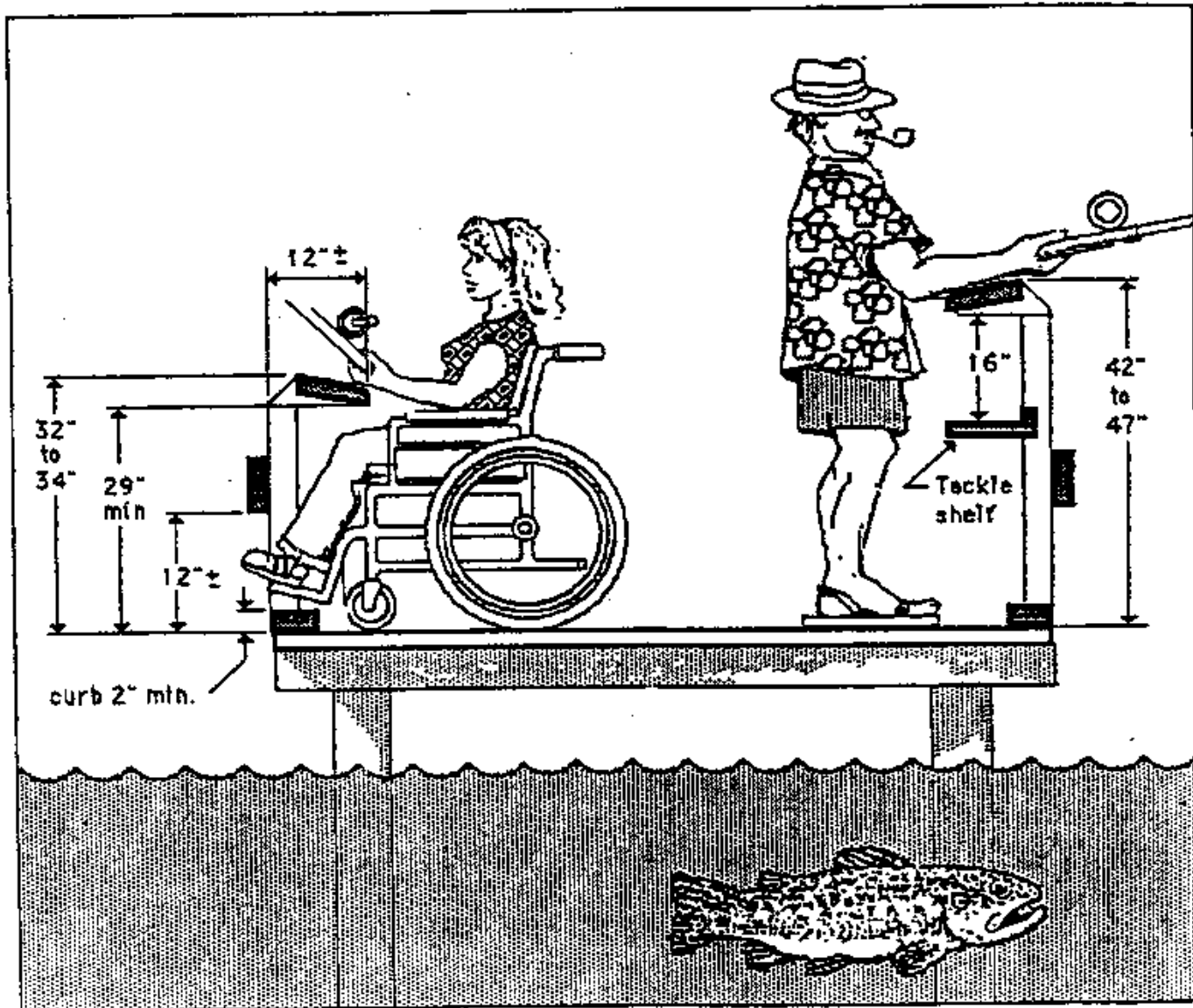


Provide fishing rod holder at each fishing station. Drill 1.25" (min.) hole in wood railings or attach 1.25" (min.) inside diameter pipe.



Slope railing surface at a comfortable angle, 15 to 30 degrees.

Railing Detail



Personal Protective Equipment



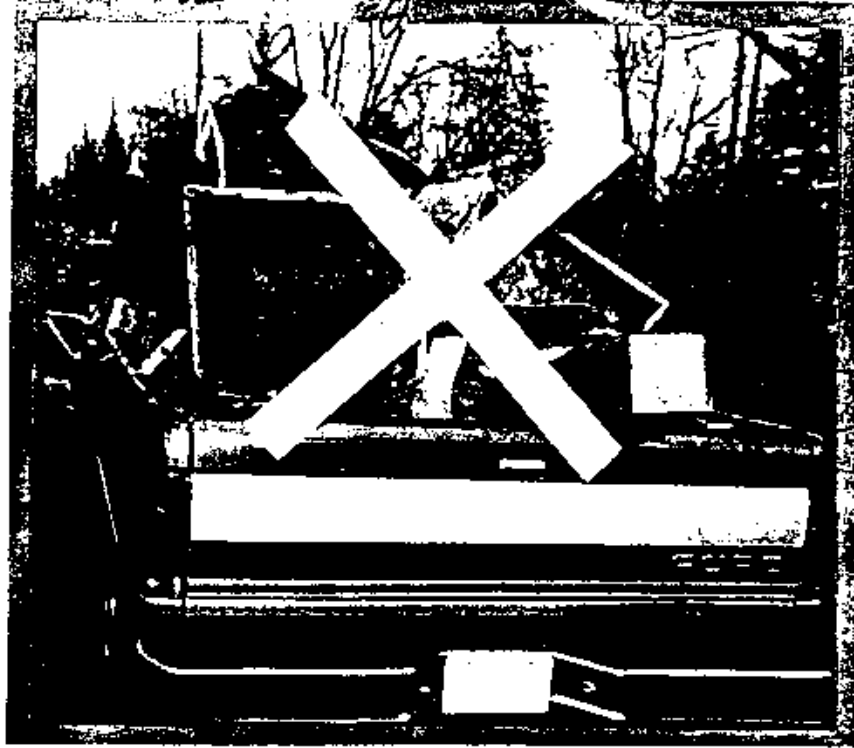
Spill Equipment



Train Your Personnel



* ^{date} April 24th - Next Tarp Delivery *



Cover Your Truck Alert!

Buncombe County is getting ready to crack down on uncovered trucks - one of our biggest sources of litter along the roadsides.

March 13 - Quality Forward volunteers are alerting all trucks entering the Buncombe County Landfill to make sure their load is securely covered with a tarp. We are distributing free tarps to help people get the message and to start to make a dent in the problem.

April 5 - All uncovered trucks entering the landfill will receive a warning from this date until May 3.

May 3 - \$50.00 tickets will be issued to all drivers of uncovered trucks entering the landfill. [Ord. #62-30(c)(1)]

Loads will not be turned away; however, tickets *will be issued*. There will be five days to pay or other arrangements will need to be made. The Buncombe County Sheriff's Dept. is helping with enforcement.

Thank you for your cooperation in making this litter cleanup project a success. If we all work together our mountain roads will be beautiful and clean!



P. O. Box 22
Asheville, NC 28802
Phone: 828-254-1776
e-mail: qf@main.nc.us

Thanks to Miltex Industries
for donating tie down cord.



Buncombe County Solid
Waste Department



Inside this Bulletin

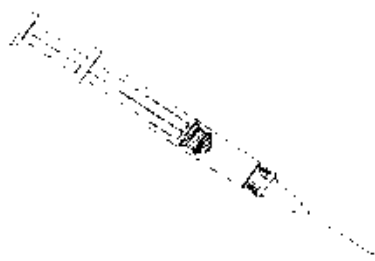
- 1 What is taken at the Transfer Station
- 2 Hours the Transfer Station is open
- 3 General information on recycling in Buncombe County
- 4 What is taken at the Buncombe County Solid Waste Management Facility
- 5 Hours the Buncombe County Solid Waste Management Facility is open

No charge for the following items that are recycled;

- 2. lead acid batteries
- 3. co-mingled recyclables
 - a. #1 & #2 plastic
 - b. aluminum cans
 - c. steel cans
 - d. clear, green, and brown glass
- 4. newspaper
- 5. corrugated cardboard
- 6. mixed paper
- 7. non-infectious medical waste (residents only!)

The transfer station does not have facilities to take motor oil or tires. These items must be taken to the landfill. Bulk loose garbage is not accepted at the transfer station.

The non-infectious medical waste processing is offered at the transfer station for residents only. This provides a way for the residents to dispose of their needles, commonly called "sharps", at no charge. Needles have caused several injuries at the landfill as drivers were unloading their trash. "Sharps" have penetrated the bags and punctured drivers. This is an avoidable problem by properly disposing of the needles. "Sharps" are not to be placed in with the recyclables, and this has occurred also. There is no charge for disposal of the "sharps" at the transfer station.



Please dispose of your "sharps" properly.

NEW HOURS AT THE TRANSFER STATION WILL SAVE TRAVEL TIME ON FOR CITIZENS ON SATURDAYS.

The transfer station is open Monday through Friday from 8:00 AM to 4:30 PM, and NOW OPEN ON SATURDAY FROM 8:00 AM TIL 1:00 PM.

Proper Management of Solid Waste is Everyone's job!

"It's not my job" is not a phrase that can be used when it comes to proper management of garbage. It is everyone's job to **reduce, reuse, and recycle**. We produce over 5 pounds per person per day in Buncombe County. We cannot escape the fact that this must be handled some way; either by **reusing, reducing what we use, recycling, or landfilling**.

If we continue to grow in Buncombe County and fail to divert more each year--someone will have to come up with a way to dispose of it when the new landfill is full. Regardless of disposal method, items that can be used will end up buried and wasted.

What is taken at the Transfer Station?

The Transfer Station is available for homeowners. The items taken at the transfer station are as follows;

- 1. bagged residential garbage only!!
- Cost is \$0.75 per Bag*



What Can Be Recycled at The Solid Waste Management Facility?

It is amazing how much you can divert from being buried in Buncombe County if you make it your job to keep it from being buried. The following list gives items that are recycled at the Solid Waste Management Facility **AT NO COST**:

1. "White goods" (stove, refrigerators, air conditioners, freezers, etc.)
2. All ferrous metals(a magnet will stick to it)
3. Lead acid batteries
4. Motor oil(which can contain automatic transmission fluid, hydraulic fluid, and brake fluid)
5. corrugated cardboard
6. newspapers
7. co-mingled recyclables(same as at the Transfer Station)

All of the above items are recycled !!!!!

The following items are taken at a **reduced cost and not buried in the landfill.**

1. All untreated, unpainted, plain wood is made into mulch which anyone can purchase.
2. All leaves and yard waste is taken and added to the mulch.

The new landfill is located about 6 miles further (North) down the French Broad River and turn right on Panther Branch Road.

What Is Restricted at the Solid Waste Management Facility?

Any load that contains more than 5% by weight or volume of **corrugated cardboard, untreated and unpainted wood, block, brick, concrete, concrete with steel, and metal is subject to fines.**

The following items are restricted from being buried in the landfill:

- yard waste
- "white goods" (stoves, air conditioners, refrigerators, etc.)
- aluminum cans
- corrugated cardboard
- all hazardous waste
- all liquids
- tires (no charge with proper paper work)

Buncombe County was the first county in North Carolina to enact a cardboard ban. The ban was adopted in 1989.

In 1995, Buncombe County mandated that the franchised residential haulers in Buncombe County provide recycling by the "Blue Bag" system. This enables all residential customers of franchised haulers, in the unincorporated areas of the County, to have curbside pickup of co-mingled recyclables as well as magazines, newsprint, and corrugated cardboard.

The Towns of Montreat, Black Mountain and Woodfin also offer the "Blue Bag" service as part of their garbage service. Asheville started the bin collection curbside sort system in January 1997. Biltmore Forest and Weaverville provide drop off sites for recyclables. With the

drop off sites at the transfer station and landfill, all residents have recycling available to them.

Hours the Solid Waste Management Facility is open?

The Solid Waste Management Facility is open from 8:00 am to 4:30 pm, Monday through Friday and 8:00 am to 12:30 pm on Saturdays. Holiday hours vary and can be checked by calling 658-0137.

Farm Tires are taken at the Solid Waste Management Facility .

Farm equipment tires are taken at the landfill for a fee. The price will depend upon the size. Please call for prices and to be sure space is available.

Triple Rinsed Pesticide Containers Can be Recycled at the Solid Waste Management Facility.

The facilities are available at the landfill for recycling triple rinsed pesticide containers. Special bags are available from the Cooperative Extension Service and can be obtained by calling 255-5522. If you any questions on what to do with items for proper disposal, please call the Solid Waste Office at 255-5066 during regular hours of 8:30 am to 5:00 pm or leave a message for Don Yelton, Waste Reduction Specialist at 258-6474 ext. 8126 24 hours a day.



RECYCLE!



A Directory for Buncombe County



P. O. Box 72
Asheville, NC 28802
Phone: 354-1776, Fax 253-5427



Waste Reduction Tips



- ◆ Purchase products that come in recyclable containers or are made from recycled materials.
- ◆ When shopping, bring your own bags with you.
- ◆ Avoid purchasing single-use items.
- ◆ Buy materials that contain as little packaging as possible.
- ◆ Don't accept a bag if you purchase just a few items.
- ◆ Purchase second hand items and donate old items for resale and reuse.
- ◆ Borrow or rent items when they will be used only once.
- ◆ Buy items in bulk.

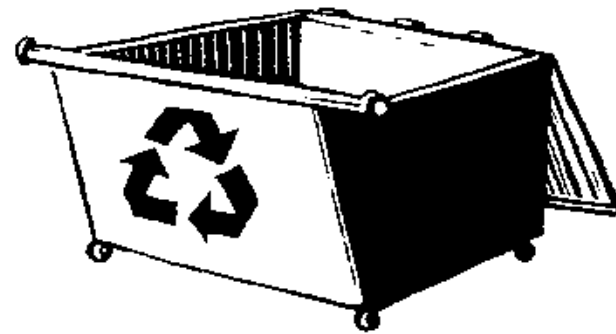
Recycling Center Etiquette

Recycling Centers provide a convenient way for all Buncombe County residents to recycle. Help keep the centers open and running smoothly by following these simple rules:

- ◆ Prepare your recyclables properly.
- ◆ Always put recyclables in proper containers.
- ◆ Do not put anything other than the listed materials in the containers. Improper materials can contaminate entire loads of recyclables.
- ◆ Close dumpsters doors to prevent litter.
- ◆ Never leave trash at the site.
- ◆ Leave the sites cleaner than you found them.

Drop-Off Center Locations

- City Recycling Center - Wal-Mart, 29 Tunnel Rd.
- County Transfer Station - Hominy Cro Rd., across from the National Guard Armory on Brevard Rd.
- County Landfill - Panther Branch Rd., off Highway 251.



Contact Information

Quality Forward	254-1776
City of Asheville Recycling	259-5936
Buncombe County Solid Waste Landfill	250-5460 645-5311
Transfer Station	251-4997
N.C. Cooperative Extension	255-5522

16 CENTERS

Landfill	Recycling Tips
YES	Rinse cans, labels do not have to be removed.
YES	Cans must be empty.
YES	NO plastic bags, styrofoam, plastic wrap, or plastics without the #1 or #2 symbol
YES	NO broken glass, dishes or cookware, drinking glasses, light bulbs or window glass.
YES	NO magazines, junk mail, or cardboard.
YES	No waxed cardboard, or unlayered paperboard such as cereal boxes.
NO	NO hardcover books.
YES	Includes refrigerators, water heaters, stoves, dishwashers, air conditioners, washers, and dryers.
YES	Check with garages or auto parts stores for recycling other automotive fluids.

rated areas of Buncombe County.

10/98

Additional Recycling Opportunities

Grocery Bags - Most supermarkets have containers for recycling paper and plastic bags. If you can't find containers at your store, talk to the manager.

Styrofoam - Many shipping and packing stores will accept styrofoam peanuts for reuse. Check the yellow pages under "Packaging Services."

Other Metals - Look in the yellow pages under "Scrap Metal" for places to recycle items such as radiators, scrap iron, metal yard furniture, bicycles, and copper pipe. Copper, brass, and aluminum products such as foil and pie plates can also be brought to the Reynolds Aluminum buy-back trailer on Patton Avenue. Call 1-800- 854-7260.















Food Products - Unopened food items can be donated to MANNA Food Bank. Call 299-3663 for more information.

Hangers - Contact your local dry cleaner to see if they accept hangers for reuse.

Junk Cars - If you own a junk car and would like it removed and recycled free of charge, call Quality Forward at 254-1776.

Yard Waste - Tree trimmings and shrubbery can be brought to the Buncombe County landfill or left at the curb for collection in the City of Asheville.

Computers - Donate unwanted computers to MAIN for use by persons with disabilities or as public access terminals. Call 255-0182 or email recycle@main.nc.us for details.

CURBSIDE PROGRAMS			DROP-OFF RECYCLING	
WHAT'S RECYCLABLE	City of Asheville Green Bin	Beaufort Co. Blue Bag*	Wal-Mart Tunnel Road	Transfer Station
Aluminum, Steel, and Tin Cans  	YES	YES	YES	YES
Empty Paint Cans and Aerosol Cans  	NO	YES	NO	YES
Plastic Bottles Containers with one of these numbered symbols:   	YES	YES	YES	YES
Glass Bottles & Jars Clear, green, & brown ONLY  	YES	YES	YES	YES
Newspapers & Inserts 	YES	YES	YES	YES
Corrugated Cardboard 	YES - flatten	YES - flatten	YES	YES
Mixed Paper Office paper, magazines, junk mail, phone books, boxes, etc. 	NO	Magazines ONLY, tie with string or place in paper bag.	YES	YES
Large Appliances 	YES, \$5.00 fee, remove door, call 251-1122	NO	NO	NO
Tires, Motor Oil, & Car Batteries 	NO	NO	NO	Batteries ONLY

*The Blue Bag program includes Black Mountain, Woodfin, Montreat, and the private, franchise haulers in the unincorporated areas.

Remember:

- Buy only what you need
- Use it up
- Use less hazardous alternatives
- Donate it to a non-profit organization
- Give it to a friend or relative
- Dispose of properly

Motor Oil & Other Automobile Fluids

Listed below are a few options for recycling; for others call the Buncombe Co. Recycling Hotline, 232-4158

Buncombe County Landfill

*Motor oil, transmission fluid, hydraulic fluid
brake fluid*

Advance Auto

811 Tunnel Road

*Motor oil, transmission fluid. 5 gallon limit
per time. No antifreeze.*

Firestone

5 Innsbruck Mall

*Motor oil, transmission fluid, brake fluid, gas,
gas & oil mix. Up to 5 quarts free of charge.*

Red's Phillips 66

80 Weaverville Highway

Motor oil, transmission fluid, brake fluid

Valvoline Instant Oil Change

1254 Hendersonville Road

Motor oil, antifreeze, transmission fluid

Gasoline

Take limited quantities to Carolina Tire on
Tunnel Road or Firestone at Innsbruck Mall.

Batteries

Auto: When you make a new auto battery purchase, take your used battery in. Or, take it to the Buncombe County Landfill, Transfer Station, or Carolina Tire on Tunnel Rd.

Household Batteries: Buy rechargeable batteries.

For recycling locations for Nickel Cadmium batteries in Asheville call 1-800-822-8837. No known outlets for Mercury Oxide & Alkaline batteries at this time.

Paint

Buy only what you need, use it up, donate it, or give it to a friend. As a last resort:

Latex: Air-dry latex or water-based paint in a well-ventilated area (adding kitty litter or cement helps solidify). Solid paint may be disposed of with household waste.

Oil Based Paint: Should be used entirely or stored safely & held for a household hazardous waste collection.

Paint Thinner, Mineral Spirits,

Turpentine

These can be reused by letting the paint particles settle to the bottom of the container. Cover to prevent evaporation, then pour off clear liquid into a clean, labeled, sealed container for reuse.

Pesticides/Pesticide Containers

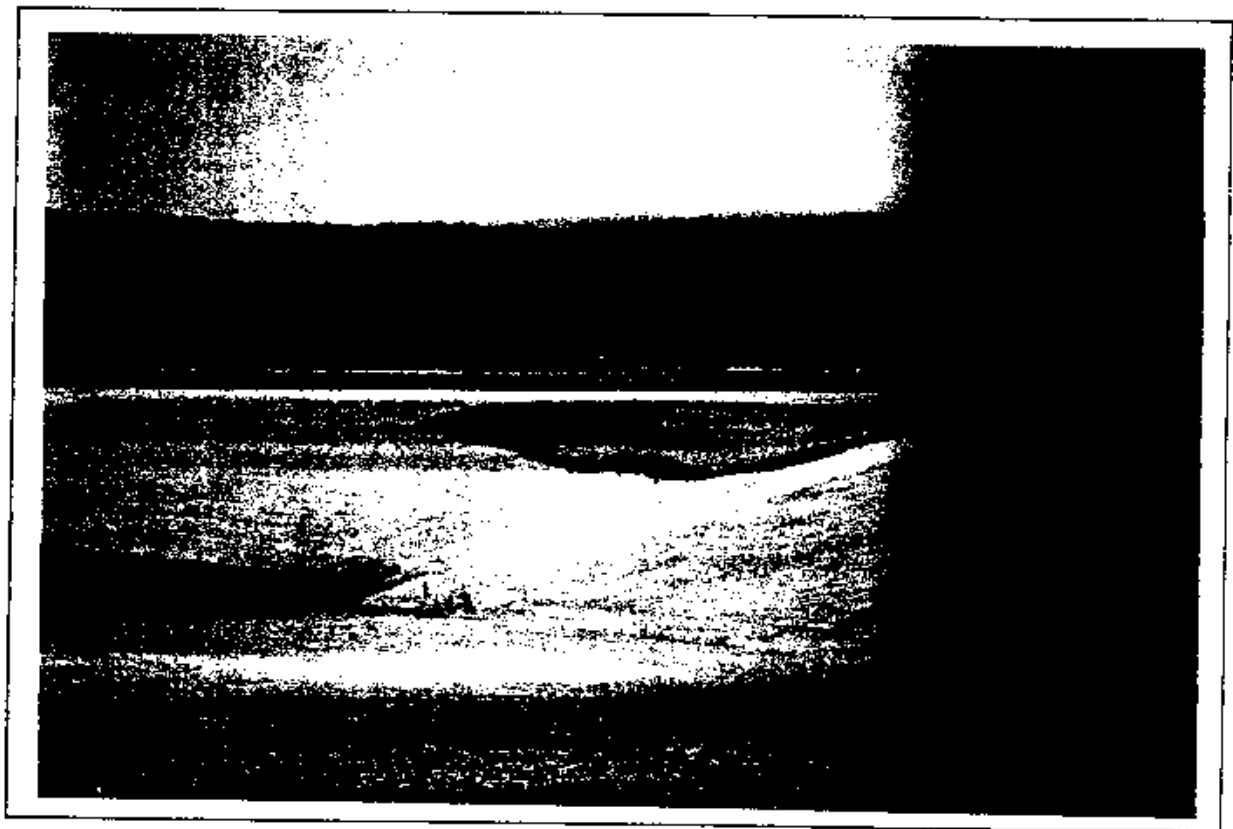
Triple-rinsed containers taken at the landfill. For pesticides call the County Cooperative Extension Service, 255-5522.

For more information call the Buncombe Co. Recycling Hotline, 232-4158 or the County Waste Reduction Specialist, 255-5066.

Sponsored by: Buncombe County, City of Asheville, Quality Forward, Cooperative Extension Service & the Land of Sky Regional Council's Household Hazardous Waste Advisory Committee.



Photograph 25. Scenic view of the French Broad River which forms the western boundary of the BCSWMF.



Photograph 26. Clay liner installation in Cell 3.



Photograph 27. On-site home refurbished for Buncombe County Sheriff's Deputy to provide facility security.



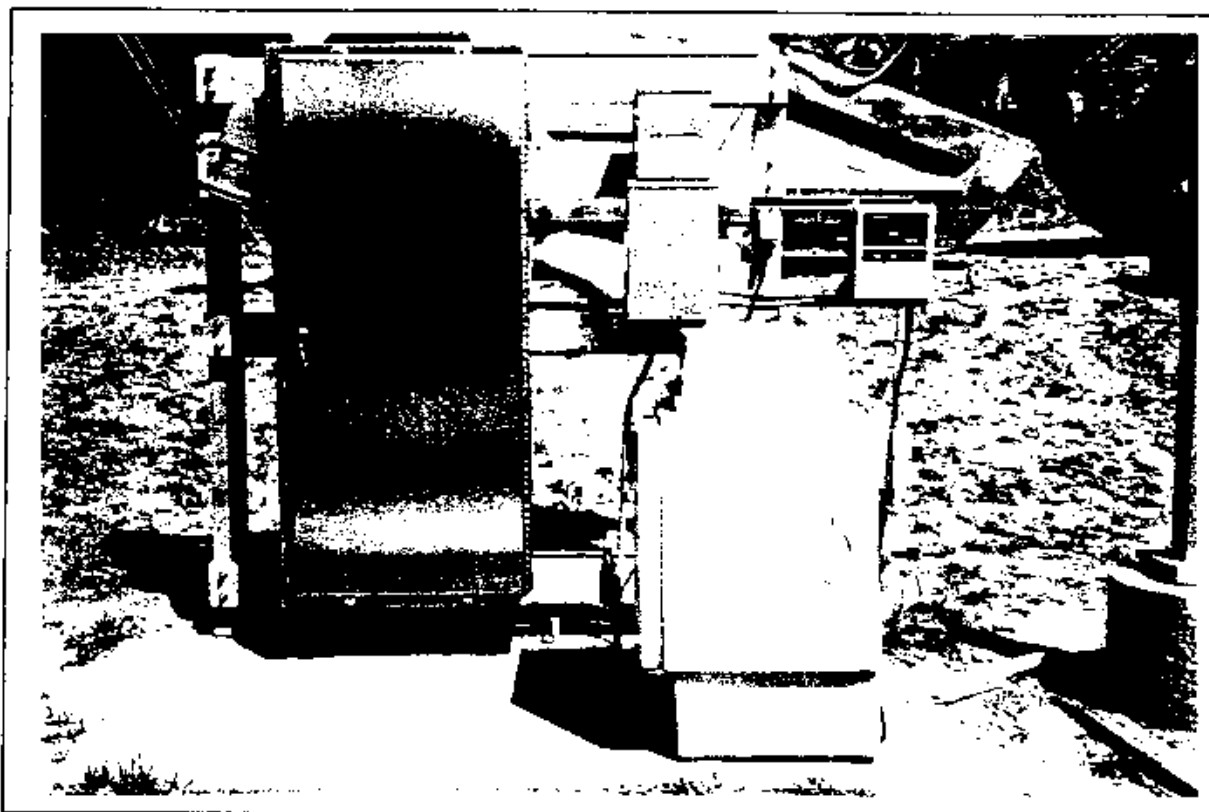
Photograph 28. The County tries to maintain good vegetative cover on disturbed areas for erosion control and to minimize visual impacts from adjoining mountains



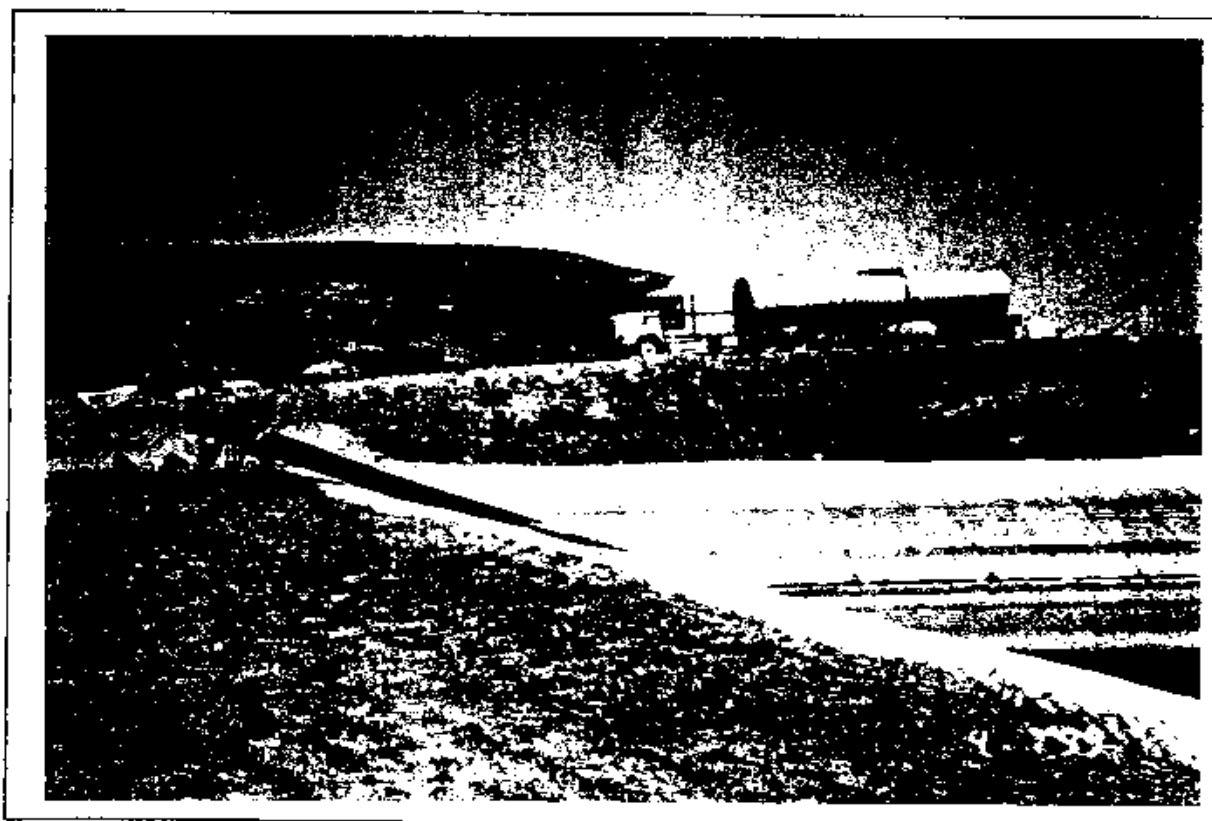
Photograph 29. The County's full-time waste screener/inspector reviews the results of a random waste screen with a waste hauler.



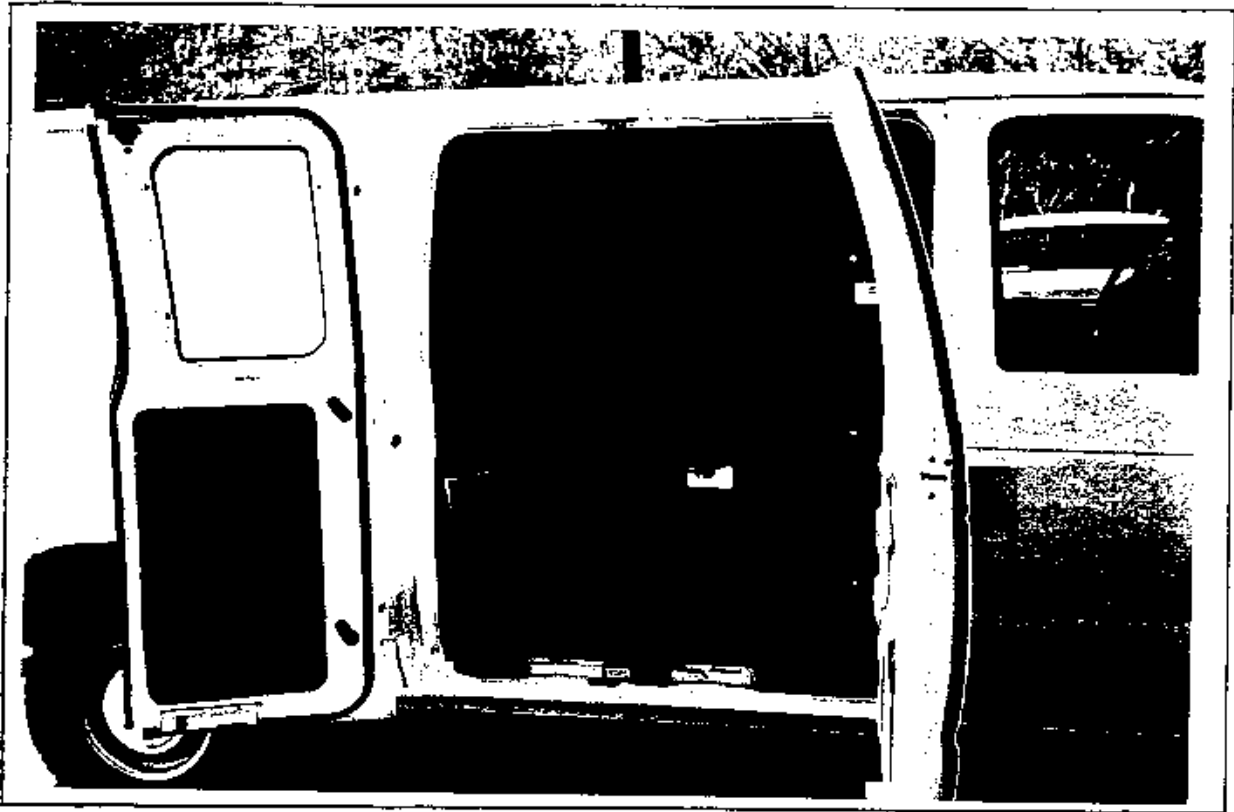
Photograph 30. Buncombe County's hazardous waste education and inspection team.



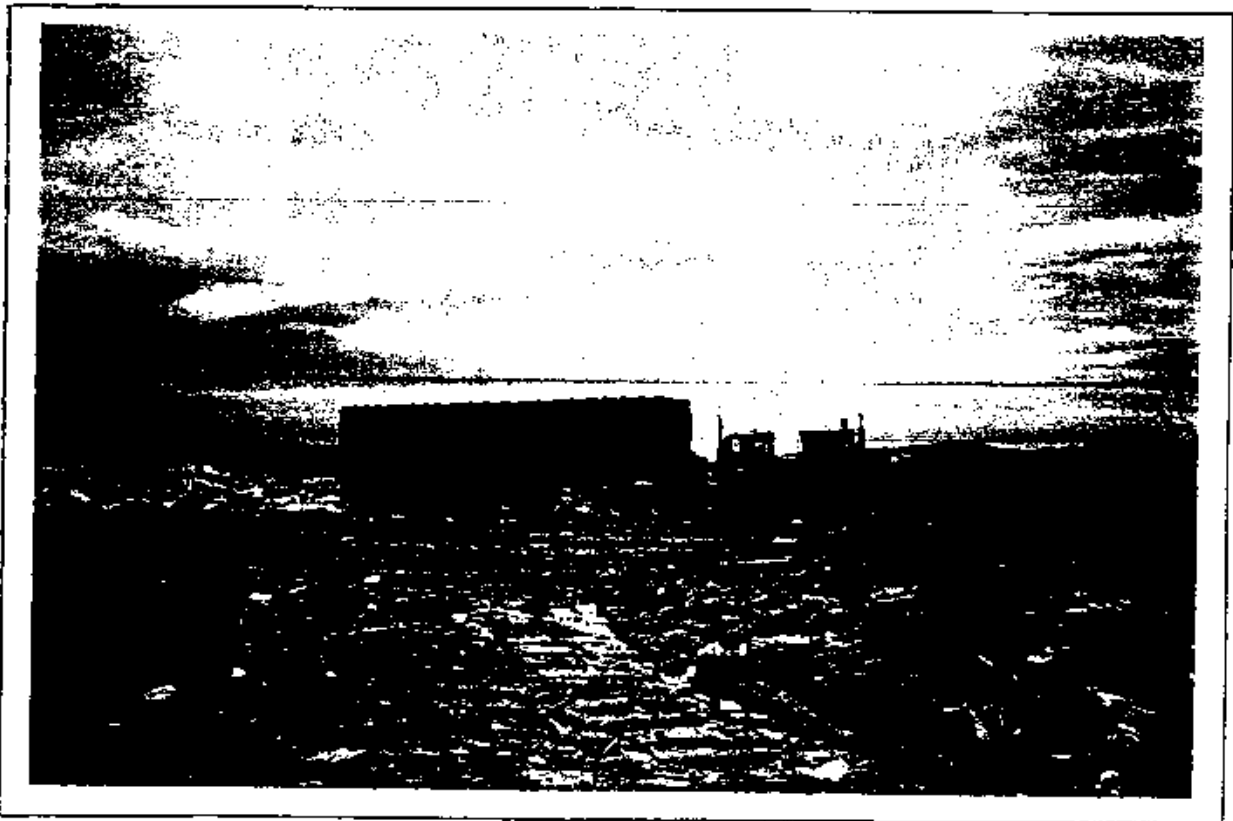
Photograph 31. Composite leachate samples are collected periodically from the leachate collection pond in accordance with the County's pretreatment permit.



Photograph 32. Leachate is discharged into the collection pond at the right. A tanker truck is loaded with leachate on a controlled truck loading station.



Photograph 33. Buncombe County has a van dedicated to hazardous waste education.



Photograph 34. A significant portion of the County's waste stream is delivered from the County's transfer station.

