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Permit No.	Date	DIN
11-07	November 22, 2010	12276

RECEIVED
November 19, 2010
Solid Waste Section
Asheville Regional Office

November 19, 2010

Mr. Allen Gaither
North Carolina Department of Environmental and Natural Resources
Division of Waste Management
Solid Waste Section
2090 US Highway 70
Swannanoa, North Carolina 28778

Subject: Buncombe County Solid Waste Management Facility
Buncombe County, North Carolina
Subtitle D Landfill - Operation Plan
Posi-shell Coverage Revision Request

Dear Mr. Gaither:

On behalf of Buncombe County (County), Camp Dresser & McKee (CDM) is pleased to request this revision to the Operation Plan. Specifically, the County would like to revise Section 3.3 which states that alternative daily cover (ADC) will not be used for more than five (5) consecutive days. The revision would specify that Posi-shell may be left exposed for up to 30 days. Following that period, the Posi-shell area will be covered with either a lift of waste or soil. The exposed Posi-shell area will be visually inspected daily and reapplied when necessary. The request is based on the manufacturer specifying that the formula used by the County can last up to 30 days. Additionally, the County has contacted other North Carolina counties and have determined that at least two others are using Posi-shell in this way. These counties have limits of up to 31 days as noted in their respective Operation Plan and Permit to Operate. The five day cover requirement will not be revised for the other ADCs (soil/mulch mixture and tarps).

Also, waste latex paint that is received at the landfill is proposed to be used as an additive to give the slurry a more flexible, leather-like quality and provide the County with a beneficial reuse method.





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Please do not hesitate to contact me at (919) 325-3574 if you have any questions or if there is anything I can do to facilitate the review and approval of this request.

Very truly yours,

Kenton J. Yang, P.E.
Camp Dresser & McKee

Enclosures

xc: Ed Mussler, NCDENR SWS
J. Creighton/J. Mears/K. Smith, BCGSD
J. Wiseman/C. Gabel, CDM



Section 3

Cover Material Requirements

3.1 Daily Cover

In accordance with 15A NCAC 13B .1626 (2), the operator of MSWLF units must cover disposed solid waste with six inches of earthen material (or alternative daily cover (ADC) approved by the Solid Waste Section (SWS)) at the end of each operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging. The daily cover must:

- be capable of covering solid waste after it is placed without change in its properties and without regard to weather;
- be noncombustible; and,
- not include rock fragments that are greater than six inches in diameter.

3.1.1 Wet Weather Operations

During wet weather, the County may develop a wet weather working face. The wet weather working face will be kept as small as possible. At the end of disposal operations, the County will cover in accordance with Section 3.1.

3.2 Intermediate Cover

In accordance with 15A NCAC 13B .1626 (2), the owner or operator of all MSWLF units must place 12-inches of intermediate cover on all areas which will not have additional waste placed on them for 12 months or more, but where final termination of disposal operations has not occurred. The composition standards of intermediate cover shall be the same as for daily cover in addition to being capable of supporting the germination and propagation of vegetative cover.

3.3 Alternative Daily Cover

Three ADCs are described in this section; Posi-Shell, soil/mulch mixture, and tarps. Each ADC shall provide control for disease vectors, fires, odor, blowing litter, and scavenging. Through SWS required demonstration periods from February 5, 2008 to June 5, 2008 and from August 9, 2008 to November 7, 2008, each ADC has been determined to provide equal or better element control as soil.

3.3.1 Posi-Shell

The Posi-Shell Cover System will be used as an ADC on waste disposed at the Subtitle D landfill. Posi-Shell provides a thin cover that hardens over the covered waste surface.

Posi-shell will be used over disposed waste and may be left as cover for up to 30 days. Any areas that have been left for 30 days will be covered with either a lift of waste or

soil. Exposed Posi-shell areas will be visually inspected daily and reapplied when necessary.

3.3.1.1 Properties of Posi-Shell

The properties of each component of Posi-Shell are available in the Manufacturer's Usage Guide.

3.3.1.2 Cover System Description

As described in the Manufacturer's Usage Guide, the application rate for short-term coverage (overnight cover for daily cover operations) is approximately 8 to 10 square feet per gallon. Assuming the working face is less than one acre (100 feet wide and 400 feet long), the desired load size would be approximately 4,000 gallons. Posi-shell manufacturers may change recipes and County may use newer or better products as they become available. Currently, at a minimum, the Posi-Shell material quantities for daily use should be the following:

- 3,200 gallons of liquid (water or leachate),
- 8 bags (15 lbs each) of Posi-Pak,
- 40 bags (50 lbs each) of PSM-200 setting agent,
- 80 bags (94 lb each) of optional Portland cement, and
- Optional waste latex paint (quantity per manufacturer's recommendations)

Posi-Pak is a specially designed plastic fiber with a proprietary finish that provides the reinforcement matrix for the finished cover. PSM-200 setting agent is a blend of clay, polymers, and adhesives that provides thickening, lubrication, and adhesion. Portland cement can be used as a binder component which will help neutralize odors and enhances the durability of the cover system.

3.3.1.3 Cover System Application Procedures

Application Procedure

Application of the Posi-shell will generally follow the manufacturer's recommendation and will employ the following minimum procedures:

- The Posi-shell will be applied in two different directions to avoid spray shadow or wind dispersion;
- The Posi-shell will be applied at the end of each working day;
- The Posi-shell surface will be visually inspected on a daily basis for exposed waste and/or inadequate coverage. Inadequate coverage is generally defined as a thickness of less than 1/8 of an inch.

Areas of exposed waste and/or inadequate coverage will receive an additional application prior to operations ending for that day.

Maximum Daily Area Coverage

Based on the May 2007 Airspace Analysis Report:

- Annual 2007 waste disposal rate (MSW only) = 125,000 tons
- Operating days per year = 284 days
- Approximate daily waste disposal rate = 440 tons
- In-place density = 0.50 tons of MSW per cubic yard
- Daily cubic yards disposed = daily waste disposal rate / in-place density = 880 yd³ or 23,800 ft³

The working face will be restricted to the smallest area feasible. The working lift is typically 4 feet high. Based on a working lift thickness of 4 feet, the working face area is 5,400 square feet (daily cubic yards disposed / working lift thickness), which is equal to the daily coverage area.

Daily Depth and Quantity to be Applied

N/A

Average Monthly Volume of Daily Cover

N/A

List of Equipment

Equipment required for the Posi-Shell consists of a standard hydroseeding unit and a towing unit.

Material and Equipment Storage

The material components of Posi-Shell will be housed in the machine shop to minimize the risk of hydration. The spraying equipment will be parked in a County designated area which will not impede daily operations.

Wet Weather Operation

The application of Posi-shell during heavy rain events will be minimized. If Posi-shell is applied during periods of heavy rain, the surface will be visually inspected following the rain event for exposed waste or inadequate coverage.

Contingency Plans

If, for any reason, the County cannot use Posi-Shell as ADC material, soil, a soil/mulch mixture, or tarps will be used.

Screening Criteria

N/A

3.3.2 Soil/Mulch Mixture

A mulch (30% maximum by volume) and soil mixture is used as another ADC material. Mulch will be hauled from the on-site mulching operations and soil will be provided from the County's on-site borrow area. The soil/mulch mixture will be free of petroleum contaminated soils. The materials will be mixed at the borrow area or the working face.

Soil/mulch mixture shall not be used more than five (5) consecutive days. If soil/mulch mixture is used on four consecutive days, soil cover will be used on the following day.

3.3.2.1 Properties of Soil/Mulch Mixture

At the Buncombe County facility, waste segregation occurs at the scale house to prevent the mulch processing of any unacceptable material, additionally the mulch processing operator segregates waste by placing unacceptable material into a dumpster located near the mulching area. Unacceptable material includes construction and demolition debris, potentially contaminated debris, etc. Since waste segregation occurs prior to the waste processing into mulch, the resulting mulch is considered inert.

3.3.2.2 Cover System Application Procedures

Application Procedure

Application of the soil/mulch mixture will employ the following minimum procedures:

- The mixture will be prepared by combining three (3) loads of mulch and seven (7) loads of soil;
- Mix soil and mulch load and visually verify that the mixture is adequately commingled, ensure that there are no large clumps (3 inches in diameter or larger) of either soil or mulch in the mixture;
- Load and haul soil/mulch mixture to active working face using an articulating truck; and
- Use dozer to cover working face with six inches of soil/mulch mixture.

The surface will be visually inspected on a daily basis for exposed waste and/or inadequate coverage. Areas of exposed waste and/or inadequate coverage will receive additional cover.

Maximum Daily Area Coverage

See Section 3.3.1.3.

Daily Depth and Quantity to be Applied

As stated above, **6 inches** of the soil/mulch mixture will be applied to the daily coverage area of 5,400 square feet. Therefore; the required daily quantity of soil/mulch mixture placed is approximately **100 yd³** (Assuming no other daily cover is used).

Average Monthly Volume of Daily Cover

As stated above, approximately 100 yd³ per day of soil/mulch mixture will be used. Assuming 24 working days per month, the average monthly volume of daily cover required for normal operating conditions is **2,400 yd³**.

List of Equipment

An articulating truck and dozer will be used for the application process.

Material and Equipment Storage

Any soil/mulch mixture requiring storage will be stored at the borrow area. Mulch stock pile sizes shall not exceed 30 feet in width and 15 feet in height to avoid spontaneous combustion and to maintain a manageable pile size in the event of a fire. Landfill equipment used for ADC procedures will be stored at County designated areas.

Wet Weather Operation

The soil/mulch mixture wet weather operation will be similar to the operation the County currently follows when using soil as daily cover during wet weather.

Contingency Plans

If, for any reason, the County cannot obtain mulch for the on-site processing area for use as ADC material, soil, Posi-shell, or tarps will be used.

Screening Criteria

Each soil/mulch mixture load will be visually inspected prior to transport to the working face to determine if the material is adequately mixed. The load will not be placed if the mixture is not commingled adequately or if foreign material is observed.

3.3.3 Tarps

Tarps will be used as another ADC. The tarps will be placed either manually or by using an automatic tarping machine which uses a spreader bar to lay and roll up the tarps.

Tarps shall not be used more than five (5) consecutive days. If tarps are used on four consecutive days, soil cover will be used on the following day.

3.3.3.1 Properties of Tarps

N/A

3.3.3.2 Cover System Application Procedures

Application Procedure for Manual Placement

Application of the tarp will employ the following minimum procedures:

- Visually inspect working face to ensure that no sharp objects are protruding from the compacted waste which may tear the tarp;
- If necessary, run compacter over any protruding objections;
- Manually roll out tarp and place over working face, the side cables within the tarp and the metal bars on the short ends shall be heavy enough to weigh down the tarp; and
- Place additional tarps as needed to adequately cover working face.

The tarps will be visually inspected following placement to ensure that uplift will not occur. Additional metals bars will be placed if necessary. Soil will be placed over any areas of exposed waste and/or inadequate coverage.

Application Procedure for Equipment Placement

Application of the tarp will employ the following minimum manufacturer's recommended procedures:

- Visually inspect working face to ensure that no sharp objects are protruding from the compacted waste which may tear the tarp;
- If necessary, run compacter over any protruding objections;
- Using an automatic tarping machine, install tarp directly on working face, the side cables within the tarp and the metal bars on the short ends shall be heavy enough to weigh down the tarp; and
- Lay additional tarps as needed to adequately cover working face.

The tarps will be visually inspected following placement to ensure that uplift will not occur. Additional metals bars will be placed if necessary. Soil will be placed over any areas of exposed waste and/or inadequate coverage.

Maximum Daily Area Coverage

See Section 3.3.1.3.

Daily Depth and Quantity to be Applied

N/A

Average Monthly Volume of Daily Cover

N/A

List of Equipment

An automatic tarping machine and/or dozer will be used for the tarp installation.

Material and Equipment Storage

The automatic tarping machine and tarp will be stored in a County designated area that will not conflict with daily haul and disposal operations.

Wet Weather Operation

The tarping wet weather operation will be similar to the operation the County currently follows when using soil as daily cover during wet weather.

Contingency Plans

If, for any reason, the County cannot use tarps as ADC, soil, Posi-shell, or a soil/mulch mixture will be used.

Screening Criteria

N/A