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North Carolina
Department of Environment and Natural Resources



Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary
Dexter R. Matthews, Interim Director

October 19, 2001

Mr. Edward J. Kreul
Environmental Services Superintendent
International Paper- Riegelwood Mill
John L. Riegel Road
Riegelwood, NC 28456

RE: Use of Remediated Oil Contaminated Soil at the Sanitary Landfill, International Paper,
Riegelwood Mill, Riegelwood, NC.

Dear Mr. Kreul;

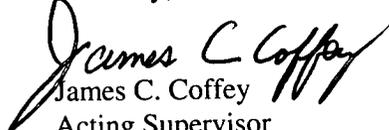
The Division of Waste Management, Solid Waste Section, has evaluated documentation that has been prepared and submitted by International Paper. This information concerns the bioremediation of approximately 4000 cubic yards of soil contaminated with # 6 oil. The documentation provided indicates that the soil has been cleaned to levels at or near the target level of 500 ppm, Total Petroleum Hydrocarbons. In addition, the BTEX levels have been reduced to levels less than the target of 10 ppm.

International Paper is in the process of preparing to close the existing, unlined, sanitary landfill that is located at the facility. International Paper has requested that the soil be allowed to be used in the closure process, primarily for berm construction on the landfill. It is the understanding of the Section that the berms will be further covered with soil suitable for establishing vegetation, necessary for the closure and long term site maintenance.

Accordingly, the Section concurs that the soil has essentially been remediated to target levels established within the bioremediation protocol, and thus may be used for closure purposes at the old landfill. To the extent practical the soil should be placed in areas on or immediately adjacent to the waste footprint, and within the groundwater monitoring network. The locations where the soil is used for construction purposes should be identified on the as-built drawings that will be prepared for closure documentation.

If you have any questions, please call Ed Mussler of my staff at 919.733.0692, ext 343.

Sincerely,


James C. Coffey
Acting Supervisor
Solid Waste Section

cc: Ed Mussler DWM
Mark Fry DWM
Jim Barber DWM

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Phone: 919-733-0692 \ FAX: 919-733-4810 \ Internet: www.enr.state.nc.us/

To: Ed Mussler, 733-4810
From: Greg Richardson

AGENDA

International Paper
Riegelwood Mill

Metg. Agenda

DENR - Solid Waste

Landfill Closure Meeting - 9:00, July 31, 2001

1 - Closure Goals 2002

- Realistic closure options per waste properties - need for revised closure plan
- Movement of historical sludge backlog to landfill
- Construction of berms
- Continued placement of Mill waste in LF pending completion of Cell 1
- Long-term limitation of leachate generation with enhanced closure

2 - Closure Schedule

- Final closure package to DENR in August, 2002
- 2003: complete final vegetation of approximately 30-acres of berm slopes
- 2004/5/6: as strength allows, float geosynthetic (GM + GT) final cover over approximately 30-acres

Concern: (1) Disposal options during initial months of 2003 when lined facility may not be online.
(2) Need for Consent Agreement in 2003

3 - Status of Cell 1

- Contractor selection
- ADC and agricultural uses of sludge
- \$\$ Internally at IP
- DENR Review?

International Paper

Paul Syslo (910)-655-6800
Rodger Schumer (901) 763-7473

NC-DENR

Ed Mussler (919) 733-0692 ext 343
Ellen Lorschieder (919) 733-0692 ext 345
Jim Coffee (919) 733-0692 ext 256

GNRA

Greg Richardson (919) 828-0577 ext 124
Greg Mills (919) 828-0577 ext 129

North Carolina
Department of Environment and Natural Resources

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary
William L. Meyer, Director



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April 23, 2001

Mr. Edward J. Kreul, Superintendent
Environmental Services
International Paper-Riegelwood Mill
John. L. Riegel Road
Riegelwood, NC 28456

Re: Closure Plan Approval of the International Paper Riegelwood Mill Industrial Landfill,
Columbus County, Permit Number 24-02

Dear Mr. Kreul:

The purpose of this letter is to inform the owner/operator that the Solid Waste Section(Section) has approved a closure plan for the referenced industrial waste landfill. The landfill shall operate in accordance with the Closure Plan for the referenced landfill dated June 2000, with the exception that the landfill shall stop receiving waste on or before January 1, 2003. Closure shall be in accordance with the provisions in the Closure Plan which states that "if the landfill must be closed prior to reaching the final contours, the surface of the landfill will be sloped to a minimum grade of 5% and maximum grade of 3H:1V". A final closure plan incorporating any necessary revisions should be submitted at least 180 days prior to commencement of closure activities for final approval by the Section.

Rule .0503(2)(d)(ii) of the solid waste management rules codified at 15A NCAC 13B required that operators of industrial waste landfills operating on or after January 1,1998, submit to the Division a design that will ensure that the ground water standards established under 15A NCAC 2L will not be exceeded in the uppermost aquifer at the compliance boundary established by the Division in accordance with 15A NCAC 2L.

As stated in the letter dated August 18, 1999, the Section has determined that the information submitted does not meet the requirements of this Rule. Specifically, the submitted ground water monitoring information does not demonstrate current compliance with the ground water standards in the upper most aquifer at the compliance boundary; the modeling information submitted does not provide adequate hydrogeologic characterization of the site to demonstrate future compliance with ground water standards in the upper most aquifer at the compliance boundary; and the information provided concerning previously disposed wastes does not provide accurate physical and chemical characteristics of the leachate.

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Mr. Kreul
April 23, 2001
Page 2

It is important to note that this determination means only that the owner/operator has not demonstrated compliance with the industrial waste rule. No determination has been made regarding current compliance with the 15A NCAC 2L regulations. As with all sanitary landfills, any necessary future detection and assessment ground water monitoring and possible corrective action will be based on ongoing water quality monitoring results.

If there are any questions, please contact me @ (919) 733-0692, extension 256.

Sincerely,


James C. Coffey, Acting Chief
Solid Waste Section

cc: Ed Mussler
John Crowder
Ellen Lorscheider



Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary
William L. Meyer, Director

January 30, 2001

Mr. Edward J. Kreul
Environmental Services Superintendent
International Paper- Riegelwood Mill
John L. Riegel Road
Riegelwood, NC 28456

RE: Site Suitability for a Sanitary Landfill, International Paper, Riegelwood Mill,
Riegelwood, NC. *Columbus Co.*

Dear Mr. Kreul;

The Solid Waste Section of the Division of Waste Management (Division), has completed its review of the site application and facility plan study for the proposed International Paper, Riegelwood Mill, Industrial Landfill. The proposed site is located on NCSR 1818 in Columbus County, near Riegelwood, North Carolina.

The application was prepared by your consultant Earth Tech of North Carolina, Inc., Raleigh, NC and is referenced as follows: *Site Application. Sanitary Landfill, International Paper Company, Riegelwood Mill, John L. Riegel Road, Riegelwood, NC 28456.* Your consultants response to comments, dated June 20, 2000 is referenced, as are the site application drawings (eleven pages) titled: *Site Application Conceptual Design, International Paper, Riegelwood, North Carolina. December, 1999.*

Pursuant to Rule .0504, the Division is notifying International Paper (IP) that the site is considered suitable, and you are authorized to prepare and submit an application for a permit to construct. Section .0201 of the Solid Waste Management Rules (15A NCAC 13B) requires the Division to issue a solid waste permit in two parts. The first part is a Permit to Construct and the second part is a Permit to Operate. The Division may only issue a Permit to Operate after it determines that the facility has been constructed in accordance with the construction permit and that all pre-operative conditions have been met. The final action the Division may take on a permit application is the issuance or denial of a permit.

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APPROVED DISPOSAL AREA

Based upon information submitted and revised through June 20, 2000, the Division has determined that the approximately 450 acre site, as proposed in the conceptual design plan, is suitable for development of a solid waste management facility subject to the terms and conditions specified below. This statement of suitability does not predetermine that all portions of this property are deemed appropriate for landfilling activities. Each phase will be evaluated during the design process as to whether or not landfilling can be performed and what, if any, engineering is deemed appropriate to achieve that purpose.

Disposal of waste, or any portion of the waste disposal unit is not permitted in the 100-year flood plain. This includes the containment berm or any leachate storage or treatment facilities.

Disposal on western portions of the site may be restricted or prohibited because of the of the stream, possibly intermittent, which dissects the property. Appropriate wetlands approvals and/or mitigation may be necessary to utilize this area for waste cells, as presented in the conceptual design plan.

GENERAL CONDITIONS AND SITE-SPECIFIC DESIGN REQUIREMENTS

The Division requires the submittal of a construction plan application for the first five-year development phase, as identified in the conceptual design plan, which is consistent with the requirements of 15A NCAC 13B .0503, .0504, and .0505, including, but not limited to, the site specific criteria set forth in this letter. Development of subsequent phases of the landfill will be in accordance with rule .0201(e).

Buffers

Horizontal buffers shall be as described in the conceptual design and as designated in Rule .0503(2)(f), and shall also include the following buffer criteria:

- a) A 100-foot minimum buffer shall be maintained between facility boundaries and borrow areas, unless otherwise approved by the Division.
- b) A minimum 50-foot buffer shall be maintained between borrow areas and delineated wetlands.
- c) A minimum 50-foot buffer shall be maintained between disposal areas and the delineated wetlands.
- d) A minimum 200-foot buffer shall be established between the waste boundary and the property line, unless otherwise approved by the Division.

IP may utilize all remaining areas of the site, except buffer areas, for other solid waste management activities (such as composting or recycling) or for landfill support activities (such as leachate management and/or stockpiling of cover material) upon approval by the Division.

Design and Construction Standards

An engineering evaluation and design report shall be prepared. The division strongly encourages IP and their consultant to schedule a pre-design meeting with the division to discuss a strategy for preparing a permit to construct that will meet the goals and objectives of IP, be permissible, and be protective of public health and the environment. The permit to construct should consider the following:

1. Use of any composite liner system other than that specified in .0503(d)(2)(ii)(B) will require groundwater modeling to demonstrate compliance with ground water standards established under 15A NCAC 2L.
2. The proposed closure cap system is not adequate for a lined waste cell. At a minimum, current engineering practice requires a cap system that is equal to or less permeable than the bottom liner system. This should be addressed in the permit to construct.
3. Stability and settlement will need to be investigated during the design hydrogeologic phase of work. The presence of the loose saturated sands and compressible clays may present challenges to the engineering design.
4. Stone Columns surrounding the leachate collection lines must penetrate the protective cover and be in contact with the waste.
5. The use of concrete manholes for the leachate system can be problematic, particularly if multiple sections are needed. Consideration to using HDPE manholes should be given.

Additional Subsurface Investigation

A geologic and hydrogeologic report shall be submitted as a component of the construction plan application. The report shall present the results of additional subsurface investigations at the site and shall be consistent with the requirements of Section .0503(d)(ii) and .0504(1)(c) of the Solid Waste Management Rules.

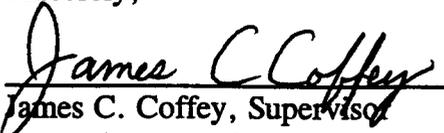
6. Further characterization will be necessary concerning the underlying Pee Dee formation for the purpose of evaluating its settlement properties. Potential settlement must be designed for with the engineering design and evaluation.
7. The hydrogeologic study should be designed to evaluate the area's aquifer to determine whether it is discharging or recharging in the area of concern, and its potential variance

Mr. Edward Krueel
Riegelwood Mill Site Suitability Letter
January 30, 2001
Page 4

- across the site.
8. The seasonal high groundwater surface must be determined for the site, particularly in the area of Phases 1 and 2. Installation of additional piezometers in this area may be required.
 9. The groundwater monitoring system must be designed by giving consideration to the dispersive characteristics of the aquifer. This will determine the spacing and number of the monitoring wells.

The Permit to Construct and the Permit to Operate will be issued to International Paper Company, Inc., Riegelwood Mill. If you have any questions, or would like to schedule a meeting to discuss this letter, please contact our office at (919)733-0692. The staff engineer assigned this project is Ed Mussler.

Sincerely,



James C. Coffey, Supervisor
Permitting Branch
Solid Waste Section

cc: Ellen Lorescheider, SWS
Mark Fry, SWS
Jim Barber, SWS
John Crowder, SWS