Georgia Department of Natural Resources

2 Martin Luther King, Jr. Drive, S.E., Suite 1152 East Tower, Atlanta, Georgia 30334-9000
Noel Holcomb, Commissioner
Carol A. Couch, Ph.D., Director
Environmental Protection Division
404/656-4713

3620

April 19, 2006

Mr. Gerald DeWitt
Rayonier Performance Fibers LLC
P.O. Box 2070
Jesup, Georgia 31598

RE: NPDES Permit No. GA0003620
Altamaha River Basin

Dear Mr. DeWitt:

EPD has initiated a basin wide permitting strategy whereby permits are reissued within groups of river basins during specific years. As a part of that process, permits are extended until such time they can be reissued within that basin grouping.

The Environmental Protection Division (EPD) has received your application for reissuance of the referenced permit. EPD is hereby extending your permit until such time that it can be reissued within the appropriate river basin group.

Sincerely,

Carol A. Couch, Ph.D.
Director

CAC/
cc :Environmental Protection Agency

Georgia Department of Natural Resources

Environmental Protection Division, Water Protection Branch
Permitting, Compliance and Enforcement Program
4220 International Parkway, Suite 101, Atlanta, Georgia 30354
404/362-2680
404/362-2691

Name:
Correspondence:
Permit:
Pretreatment
State:
Local:
Permit:
Operating:

May 25, 2001

Ms. Justine Thompson
Executive Director
Georgia Center For Law In The Public Interest
175 Trinity Avenue, SW
Atlanta, Georgia 30303

Re: Rayonier Jesup Mill
NPDES Permit No. GA0003620

Dear Ms. Thompson:

Thank you for your letter concerning the draft National Pollutant Discharge Elimination System (NPDES) permit for Rayonier Jesup Mill.

We have included an attachment which addresses the issues presented during the public notice comment periods. Please note that some modifications were made to the permit as a result of the comments received. After reviewing this revised draft NPDES permit, the Environmental Protection Division (EPD) has determined that the Permit meets all the necessary State and Federal requirements and is protective of the environment. Therefore, EPD has issued the NPDES permit. This determination was made after careful consideration of all the comments received by EPD at the February 13, 2001 public hearing and during the comment period for the draft NPDES permit.

I appreciate your interest in this matter.

Sincerely,

Alan W. Hallum, Chief
Water Protection Branch

AWH:sw
Attachment

cc: Coastal District Office (w/ attachments)

Attachment
Rayonier Jesup Mill – NPDES Permit No. GA0003620
May 25, 2001
Response to Comments

I. The Ecological Assessment of the Impacted Area from Rayonier's Study is Flawed

The Environmental Protection Division (EPD) did not require that Rayonier conduct this Study, and it was not approved by EPD. The Study was not used to prepare the draft permit for Rayonier. The draft permit was based upon the information developed during our Wasteload Allocation Process.

II. The Permit Fails to Include Adequate Dioxin Limits and Monitoring

Condition C.4. of the permit requires that all testing be conducted as specified in 40 CFR Part 136. Also, the permit requires that the facility adhere to the protocols described in Appendix C of the United States Environmental Protection Agency / Paper Industry Cooperative Dioxin Screening Study. The Protocol only requires analysis of the edible fillet tissue. There is no justification to require the facility to test at a World Health Organization Laboratory. Commercial laboratories are capable of running very sensitive analyses for dioxins.

Georgia Water Quality Control Rule 391-3-6-.06(11)(b) requires that facilities maintain records of monitoring activities and results for a minimum of three years. There is no federal or state regulation that requires records to be maintained for fifty years.

Georgia Water Quality Control Rule 391-3-6-.03(5)(e)(vi) specifies a water quality standard for 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). Condition 3 of the Special Requirements of the permit requires that the facility monitor all seventeen congeners of dioxin (2,3,7,8-TCDD) and furan (2,3,7,8-TCDF) in ambient fish fillet tissue in the facility's receiving stream.

This permit incorporates the requirements of all statues and regulations.

III. The Permit Fails to Include Color and Turbidity Limits

EPD has added a requirement for a Color Minimization Plan in the Special Conditions of the permit.

IV. The Permit Fails to Include a Limitation and Monitoring Requirement for Temperature

Rayonier does not heat their discharge. The temperature of the discharge into the river is ambient. Temperature limits are not needed.

V. The Permit Fails to Include DO and COD Limits and Monitoring Requirements

Chemical Oxygen Demand (COD) was not identified as a parameter requiring limits in Federal effluent guidelines or the wasteload allocation (WLA) process. The Biochemical Oxygen Demand (BOD) limit is included in the permit to ensure that the water quality standard for Dissolved Oxygen (DO) is met. There is no basis for a COD limit. Thus, the permit adequately addresses this concern.

VI. The Permit Fails to Include Sulfate, Chlorine, and Chlorides Limits and Monitoring Requirements

There is no water quality standard or effluent guideline to use as a basis for requiring limits for these parameters.

VII. The Permit Fails to Require Effluent Toxicity and Other Toxic Chemicals Testing

All major sources are required to conduct effluent toxicity testing at every permit renewal (every 5 years). Further testing can be required by EPD based on any toxicity concerns that are identified.

VIII. The Permit Fails to Include BOD and TSS Concentration Limits

Federal effluent guidelines for pulp mills provide for mass limits based upon production. The permit limits both BOD and Total Suspended Solids (TSS) are in mass units. Mass limits must be included to assure compliance with these guidelines.

IX. The Public Participation was Inadequate

Adequate public participation has been provided per EPD's standard administrative procedures.

X. The Testing Location and Combined Outfalls are Inadequate

Each outfall is sampled and tested separately. The analytical results are then flow proportioned and reported to the Division. The method used to compute these values are acceptable to the Division. The testing location was addressed in the Special Requirement Section 1. Thus, the permit sufficiently addresses these concerns.

XI. The Unknown Outfall Must Be Identified and Permitted

The reference to an unknown outfall is actually a permitted discharge pipe for the City of Jesup. The water quality model used to develop the WLA for Rayonier incorporates the Jesup discharge.

XII. Unlined Treatment Ponds are Not Adequately Addressed by the Permit

These ponds were built before it was common practice to have a lined pond system. The Division has modified the draft permit to require that the facility develop a groundwater monitoring plan to address concerns regarding these unlined ponds.

XIII. Source Reduction is Not Addressed by the Permit

EPA is still in the process of developing Cluster Rule regulations for this subcategory, to assess the degree of chlorine and other chemical reductions that can be achieved. Once finalized any new requirements will be incorporated into the permit.

XIV. The Permit Contains No Requirement for an O & M Manual

There is no regulatory requirement for an Operations & Maintenance (O&M) manual for NPDES facilities.

XV. The Permit Contains No Requirement for a Certified Operator

The draft permit has been modified to require a certified operator in responsible charge of the facility.

XVI. Stormwater Discharges are Not Adequately Addressed

Rayonier does not have a separate stormwater discharge because all storm water that originates on the property enters the effluent treatment system. Thus, the permit adequately addresses this issue.

XVII. Conclusion

The draft permit has been modified to require a color minimization plan, a foam control study, a certified operator, and a groundwater monitoring plan.

mc

GEORGIA CENTER FOR LAW IN THE PUBLIC INTEREST

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February 13, 2001

RECEIVED
FEB 19 2001
GEORGIA EPD WATER PROTECTION BRANCH
PERMITTING, COMPLIANCE AND ENFORCEMENT PROGRAM

VIA FACSIMILE (404) 362-2691
AND U.S. MAIL

Mike Creason
Permitting, Compliance and Enforcement Program
Environmental Protection Division
4220 International Parkway
Suite 101
Atlanta, GA 30354

Re: NPDES Permit No. GA 003620 for Rayonier Jesup Mill

Dear Mike:

Please accept these comments on Draft National Pollutant Discharge Elimination System (NPDES) Permit No. GA 003620 ("Draft Permit") for Rayonier Jesup Mill in the Altamaha Riverbasin. ARK is a non-profit environmental organization that was founded to protect and restore the habitat, water quality, and flow of the Altamaha River from its headwaters in the Piedmont to its terminus at the Atlantic Ocean near Darien. ARK's members live, work, and recreate in the Oconee, Ocmulgee, and Ohoopee riverbasins and their feeder streams that make up the Altamaha River watershed. We appreciate the opportunity to submit these comments.

It is our understanding that the Environmental Protection Division (EPD) is accepting comments on the Rayonier's Draft Permit through the public hearing scheduled for February 13, 2001. We have previously submitted comments on this proposed permit and hereby incorporate such comments, those comments submitted by others during this process and specifically comments submitted by the United States Fish and Wildlife Service and the Institute of Ecology at the University of Georgia.

We have reviewed the Draft Permit and are concerned that this permit will not adequately protect the chemical, physical and biological integrity of the receiving waters as required by both federal and state laws. See e.g. O.C.G.A. § 12-5-20, et seq.; 33 U.S.C. § 1251, et seq. As you know, EPD is charged with the responsibility of ensuring that permits issued pursuant to the NPDES program are adequate to protect water quality.

Specifically, Georgia EPD has a duty to:

> . . . provide enhancement of water quality and prevention of pollution; to protect the public health or welfare in accordance with the public interest for drinking water supplies, conservation of fish, wildlife and other beneficial aquatic life, and agricultural, industrial, recreational, and other reasonable and necessary uses and to maintain and improve the biological integrity of the waters of the State.

Ga. Admin. R. & Regs. 391-3-6-.03(a). Moreover, "existing in stream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." Ga. Admin. R. & Regs. 391-3-6-.03(b). EPD also has a duty to ensure that "[a]ll waters shall be free from toxic, corrosive, acidic and caustic substances discharged from municipalities, industries or other sources, such as non-point sources, in amounts, concentrations or combinations which are harmful to humans, animals or aquatic life." Ga. Admin. R. & Regs. 391-3-6-.03(5). Finally, pursuant to § 303(c) of the CWA, standards adopted by EPD "shall be such as to protect the public health or welfare, enhance the quality of water and serve the purposes of this chapter." 33 U.S.C. § 1313(c)(2)(a). As currently written, the Draft Permit fails to meet these standards. Specifically, please accept the following comments:

I. <u>The Permit as Proposed Fails to Comply with State Law with Respect to Color and Turbidity</u>

The permit as proposed does not comply with legal requirements with respect to color and turbidity. It is our understanding that both the permittee and regulatory agency have adopted a position that neither color nor turbidity limits must be included in the permit. This position, however, is based on an erroneous interpretation of the applicable statutory and regulatory provisions governing NPDES permit issuance. Specifically, 40 C.F.R. § 122.44 (incorporated into State law by DNR Rules 391-3-6-.03(2)(b) and 391-3-6-.06(8)(c)) states that

> each NPDES permit **shall** include conditions meeting the following requirements when applicable . . .
>
> (d) *Water Quality Standards and State Requirements:* any requirements . . . necessary to:
>
> (1) Achieve water quality standards established under Section 303 of the CWA, **including state narrative criteria for water quality.**

<u>Id.</u> (emphasis added). The Permit fails to incorporate requirements to ensure uses of state waters consistent with current uses and to maintain required water quality standards.

Specifically, Georgia's Rules and Regulations for Water Quality Control ("Georgia Rule") specifically provide that "[a]ll waters shall be free from material related to . . . industrial . . . discharges which produce turbidity, color, odor or other objectionable conditions which interfere with legitimate water uses." Georgia Rule, 391-3-6.03(5)(c). Moreover, the turbidity standard provides that "[a]ll waters shall be free from turbidity which results in a substantial visual contrast in a water body due to a man-made activity." Id. at (5)(d).

As you are well aware, an ecological assessment was conducted for an 11-mile segment of the Altamaha River presumably to support the permit conditions contained in the Draft Permit. See Water Quality Survey and Stream Bioassessment for Rayonier's Jesup, Georgia Mill (the "Rayonier Study"). Ironically, the results of this study support our conclusion that the draft permit should include limitations for both color and turbidity. Specifically, the Study clearly indicates that the Rayonier discharge has impacted the receiving water with respect to color. The Study indicates that both turbidity and color were moderately high and showed distinct upstream to downstream trends; similarly Secchi disk values (a measure of light penetration) decreased from upstream to downstream, presumably as a result of the Rayonier discharge. In addition, Rayonier's own monitoring reports indicate a very high level of color discharge – a level considered high even for the paper and pulp mill industry.

Moreover, other evidence clearly indicates that color is impacting the integrity of the river and legitimate uses thereof. For example, photographs and personal accounts both indicate that the color is visible several miles downstream from the Rayonier discharge. In fact, the public file for Rayonier contains photographs that demonstrate a clear color impact on the river. The file also contains numerous complaints from citizens regarding this impact. In addition, please see the attached memorandum from Deborah Sheppard that indicates widespread concern in the community regarding the impact of Rayonier's discharge with respect to color and other materials discharged from the facility. See Memorandum from Deborah Sheppard to Georgia EPD, Water Protection Branch, February 12, 2001 (attached). In her capacity as the Executive Director of the Altamaha Riverkeeper, Ms. Sheppard has received numerous comments that Rayonier's discharge is visible well below the discharge point and that the existence of the color is interfering with the community's use and enjoyment of the river.

Sampling results also support the conclusion that color is interfering with legitimate uses of the river. See *Analysis of the Proposed Rayonier Paper Mill NPDES Permit Prepared by Redwing Environmental Inc.* (hereinafter "REI Report"). The REI Report found a 350% change from samples taken upstream and samples taken near Outfall 2. The REI Report also contains photographic evidence supporting the color differential caused by the Rayonier discharge.

In its Response to comments submitted by the Georgia Center for Law in the Public Interest in October, 2000, Rayonier disputes that it is required to address the color impact on the receiving waters. Rayonier erroneously concludes that a "legitimate water use" is the same as a water's "designated use." Under Georgia's water quality

regulations, legitimate uses include "drinking water supplies, conservation, protection, propagation of fish, shellfish, wildlife and other beneficial aquatic life, agricultural, industrial, [and] recreational[.]" Georgia Rule, 391-3-6.03(3)(g).

While Georgia's Rules do not provide a numeric standard for color, *a standard nevertheless exists* prohibiting interference with legitimate water uses. And it cannot be disputed that Rayonier's discharge is interfering with such uses. EPD does not have discretion under these circumstances to ignore the impacts of Rayonier's color discharge on the receiving waters. The permit as written does not comply with this standard. As a matter of law, "[t]he failure of an agency to comply with its own regulations constitutes arbitrary and capricious conduct." Simmons v. Block, 782 F.2d 1545, 1550 (11th Cir. 1986). Where an agency fails to act in accordance with its own regulations, such actions are "not in accordance with the law." Raymond Proffit Foundation v. U.S.E.P.A., 930 F. Supp. 1088, 1104 (E.D. Pa. 1996). As the Supreme Court has explained, agency action is arbitrary and capricious where the agency fails to "articulate a satisfactory explanation for its action including a "rational connection between the facts found and the choice made,'" Motor Vehicle Manuf. Ass'n v. State Farm Mutual Automobile Ins., 463 U.S. 29, 43 (1983), or where

> the agency has . . . entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.

Id.; See also, Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402 (1971); Sierra Pacific Industries v. Lyng, 866 F.2d 1099 (9th Cir. 1989).

In addition to the specific regulations concerning color, the Clean Water Act clearly provides that the biological integrity of the receiving waters be protected. See e.g. O.C.G.A. § 12-5-20, et seq.; 33 U.S.C. § 1251, et seq. However, in determining whether to provide protective limits for color, there is no evidence that the biological impacts of color have ever been considered. Moreover, ample studies and other scientific materials exist supporting the conclusion that color can have adverse impacts on fish and other aquatic life.

We strongly recommend that EPD require that the biological impacts of color be evaluated. Moreover, given the clear evidence that color and turbidity are negatively impacting legitimate water uses, **the permit must be modified to include a specific reasonable standard for both color and turbidity.** Of course, we recognize EPD's concern regarding the identification of an appropriate color limit. As such, we are more than willing to assist EPD to identify individuals in other states who may be able to offer their technical expertise in order to calculate the appropriate limit to protect the Altamaha River or assist in any other respect necessary to protect the Altamaha from Rayonier's discharge. This is of great concern to the Altamaha Riverkeeper and its members whose use of the river has been negatively impacted by Rayonier's discharge and we strongly urge EPD to adopt a reasonable yet specific color standard for the Rayonier permit.

II. The Permit Fails to Include Adequate Limitations for Dioxin

Also alarming is the failure of the Draft Permit to adequately consider the harmful impact of dioxin. It is well established that dioxin is one of the most toxic substances known to humans. Nevertheless, despite the clear threats posed by this dangerous chemical, the permit fails to protect public health and the environment. Accordingly, the permit should be modified as follows:

- As written, the permit limitation for dioxin is based on the average flow of the receiving water. As I am sure that you are well aware, most effluent limitations are based on the 7Q10 flow. By basing the limitation on average flow, water quality standards for dioxin are likely to be exceeded during low flow events. This concern is particularly timely given that Georgia is experiencing a severe drought and it is likely that water quality standards are exceeded during extremely low flows. As such, we recommend that the permit limitations be based on the 7Q10 for *all* effluent standards.

- The Dioxin test procedures for the Rayonier permit only test for one isomer of dioxin. Further, that isomer is only tested for in fish fillets. It is important to note that dioxin is not normally equally disturbed throughout an organism and may be concentrated in internal process organs such as the liver. There are 17 dioxin congeners and Rayonier tests for only the most common congener ((2,3,7,8 – TCDD). A more adequate assessment would test for all 17 congeners and then convert to a total value based on the US EPA's conversion methodology. We recommend "Total Quantity" testing for the 17 congeners using whole fish specimens collected immediately downstream of all three outfalls. See *REI Report.*

- Other NPDES permits in Georgia require paper mills to monitor for Adsorbable Organic Halogens (AOX). AOX is a measure of a complex suite of halogenated compounds that are common in bleach kraft mill discharges including chlorides, bromides, and iodides. These compounds are bioaccumulators, though not necessarily biomagnifyers such as Dioxin. Combining AOX analysis with the results of the Dioxin tests will give a much better picture of Rayonier's effect on the Altamaha River. See *REI Report.*

- Dioxin has recently been declared a known human carcinogen. Many of the cancers caused by dioxin have long latency periods. As such, the permittee should be required to maintain all records pertaining to dioxin for a minimum of 50 years.

- Section III.C. states that the permittee may not discharge toxic pollutants in concentrations that are harmful to humans. However, according to recent EPA dioxin reassessment, all levels of discharge of dioxin are harmful to humans.

- Dioxin testing should be required at a World Health Organization health lab because of the ubiquitness nature and low level of concerns of dioxin. Any lab other than a WHO certified lab will not be able to produce scientifically-defensible results. As testing is only required once per quarter, this requirement will place no appreciable burden on the permittee.

III. The Effluent Limitations Fail to Include Limits and/or Monitoring Requirements for Temperature

The Draft permit also fails to adequately protect water quality with respect to temperature in violation of 40 C.F.R. § 122.44. Water temperature is one of the most significant environmental factors mediating aquatic productivity. As discussed by Delbert B. Hicks, an expert on the impacts of thermal discharges on aquatic life:

> [temperature] affects virtually all metabolic processes of plant and animals, stimulates and control reproductive strategies, affects the solubility and diffusion of gases like dissolved oxygen, affects distribution patterns of plants and animals, and in excess causes lethal effects in aquatic animals and plants. Water temperatures in the aquatic environment can naturally vary due to effects of solar radiation and air temperature. Water temperature changes due to thermal discharges, however, are more sustained and dramatic in effect.

Delbert B. Hicks, *Assessment of the Biological Effects of Waste Heat Discharged from Plant Branch*, 3, December 1997. In fact, high thermal loading can result in objectionable pollution conditions such as fish kills and algae growth. For instance, temperature levels as low as 93° can be lethal for a number of species of fish. Id. In fact, other waterbodies in Georgia have already been severely impacted by thermal discharges; for instance, Lake Sinclair has experienced massive fish kills and the infestation of a nuisance algae, *Lyngbya wollei*. See Professor Lawrence A. Dyck; *Lyngbya* Infestations in the Beaverdam Creek Region and Lake Sinclair, Ga., and the Relationship Between *Lyngbya* Infestations and Discharges of Heated Wastewater from Plant Branch; "Fish-Kill – Investigation Report," Fisheries Management Section, Georgia Department of Natural Resources, August 3, 1993.

Species in the Altamaha River are particularly sensitive to changes in temperature. For instance, sturgeon migrate upstream to spawn and may be sensitive to increased temperature. Sturgeon require temperatures less than 29 Degrees Celsius ("C") or 85 Degrees Fahrenheit ("F"). However, according to information submitted by the permittee, the long-term average for summer temperatures was about 30° C (87 ° F) with maximum running as high as 35° (95° F). Despite the impact that even small changes in temperature can have on the integrity of the receiving waters, the Draft Permit does not adequately provide for monitoring of this parameter. We recommend that temperature be monitored upstream and downstream of the effluent to be submitted in monthly

Discharge Monitoring Reports. The water quality standards with respect to temperature should also be specifically incorporated into the permit.[1]

IV. The Effluent Limitations Fail to Include Limits and/or Monitoring Requirements for Dissolved Oxygen

According to monitoring conducted by the permittee, dissolved oxygen ("DO") levels were above state standards, but were depressed at the stations nearest the outfalls; a DO concentration of 5.05 mg/L (barely above the state limit of 5.o mg/L) was measured just downstream of the outfall during the August 1999 sampling. This result raises the concern that dissolved oxygen could be reduced even further during extreme low flows, resulting in increased stress to aquatic organisms. Nevertheless, the permit does not even include monitoring requirements or standards for DO. Monitoring requirements and effluent limitations should be placed in the permit.

V. Limitations on BOD and TSS

The draft NPDES permit similar to the current NPDES permit proposes seasonal limitations for BOD_5 and TSS. The daily average mass limitation for BOD_5 for the period December 1 to April 30 is 32,000 lbs/day. At an average flow of 61.58 MGD for both outfalls combined (based on Rayonier's NPDES permit application), the mass limit translates to a concentration value of 62.31 mg/L. This is more than two times the typical monthly average limitation of 30 mg/L.

VI. Sampling location and Combined Outfalls

The draft NPDES permit does not specify a precise sampling location for each outfall. Moreover, as written, the permit limitations provide single effluent limitations for two outfalls and, according to the United States Geological Survey Map, the two outfalls appear to be a mile apart on the Altamaha River. There is no justification for combining the effluent of Outfalls 1 and 2 for analysis. Depending on the particular volume and constituents of each outfall, this methodology could lead to a drastic dilution of a single outfall that in actuality could be discharging contaminants at levels that are harmful to the aquatic life of the Altamaha River. See *REI Report*. We strongly recommend individual analysis of each outfall and separate NPDES permit limitations for each outfall.

[1] Georgia's water quality standards provide for a maximum of 90° and/or rise of 5° above ambient temperature. Georgia Rule, 391-3-6-.03 (6)(v). Failure to comply with water quality standards with respect to temperature or temperature conditions below 90° can also lead to a violation of the prohibition against discharges that, among other things, create objectionable conditions or interfere with legitimate water uses. Id. at (5).

VII. Limitations on Other Toxic Chemicals

The Clean Water Act and the Georgia Water Quality Control Act prohibit the point source discharge of any pollutant into the State waters without a permit. 33 U.S.C. § 1311; O.C.G.A. § 12-5-30. Moreover, 40 CFR 122.44 and Chapter 3 of the USEPA's Technical Support Document for Water-quality Based Toxics Control (EPA/505/2-90-001) (guidance document) describe a five step process for determining the need for permit limits and conducting a "reasonable potential" analysis using effluent monitoring data . However, there is no indication from the documents available for public review that any such analysis has occurred. And this is despite the fact that Rayonier, by their own admission, discharge many pollutants that do not contain any limitations. According to Rayonier's permit application, the following parameters are declared to be present in Rayonier's effluent: ammonia, zinc, phenols, fluorides, COD, temperature, dissolved oxygen, toxicity testing, color, fecal coliform and chlorine. The following other parameters are also listed as being present in the effluent: methanol, formaldehyde, acetaldehyde, carbon disulfide, cresol, methylmercaptan, acetone, methyl ethyl ketone, asbestos, vanadium, zirconium, strontium. Failure to include limitations is most disturbing considering that sampling results conducted in the area reveal that some of these pollutants are present such as Barium, Manganese, and Vanadium.[2] See *REI Report*. Nevertheless, the draft NPDES permit does not set effluent discharge limitations for the following parameters.

VIII. The Effluent Limitations Fail to Include Limits and/or Monitoring Requirements for Chlorides

Other effluent concerns raised are significant increases in chlorides. Rayonier uses Chlorides – binary compounds of chlorine – in extensive amounts of chlorine in their bleach process. Chlorine is a very reactive element that can form chlorides (salts) when mixed with any reactive metal elements. Moreover, sampling results reveal Chloride levels at Outfall 2 that are three times the level at of the background sample point. This is an indicator that Chlorine and reactive metals are in solution together prior to the discharge, perhaps in the unlined basins. See *REI Report*.

IX. The permit should contain concentration limits in addition to the mass limitations

As written, the permit contains for the mass limitations for BOD_5 and TSS but fails to contain concentration limitations. When mass limitations are provided, there is usually an associated flow limit as well in order to include a reasonable concentration limit. This is intended to preclude a permittee from discharging a low flow and high concentration waste. If there are no concentration or flow limits, the permittee may be in compliance with the mass limits but still cause harm to the environment through its high

[2] It is our understanding that aluminum may also be present in proximity to Rayonier's discharge. We recommend further investigation is needed in order to determine whether limits are needed in the permit with respect to this pollutant.

concentration discharge. Therefore, the permit should contain mass limits that have an associated flow limit as well. See *REI Report.*

X. The Effluent Limitations Fail to Include Limits and Monitoring Requirements for Chlorine

Chorine is the elemental chemical used in the bleach process at Rayonier. Nevertheless, no monitoring or limitation requirements exist for chlorine/chlorides at Outfalls 1 and 2. Sampling results demonstrate conclusively that chlorine/chlorides are being discharged at Outfall 2. It is unacceptable to issue an NPDES permit with no monitoring and limitations for chlorine/chlorides unless Rayonier can demonstrate complete recapture/recycling of these elements in their production and treatment processes. See *REI Report.*

XI. There is an Unknown Outfall that May be Discharging Pollutants without a Permit[3]

The Clean Water Act does not allow the discharge of pollutants without a permit. Nevertheless, our investigation reveals that there is a third outfall that is discharging into the Altamaha River. This discharge was not shown on any of the flow process diagrams reviewed for the Rayonier plant. We are concerned about the lack of information regarding this discharge and its effluent contents. We strongly recommend additional investigations into the origin and content of this discharge. See *REI Report.*

XII. There Has Been Inadequate Investigation into the Water Quality Impacts of the Unlined Treatment Ponds

Of great concern is the fact that the containment ponds at the Rayonier plant are unlined and are immediately adjacent to the Altamaha River. These ponds are in direct contact with the ground water table and thus, the river itself. We recommend that Rayonier include additional sample collection and monitoring along the ponds (including dye leachate tests) to determine the contents and rate of discharge of the ponds into local groundwater and the Altamaha River. These ponds may be sources of pollutant levels that are higher than the discharge Outfalls. See *REI Report.* We recommend that EPD require monitoring wells to assess whether these ponds are impacting the Altamaha River or adjacent groundwater and whether corrective action is necessary.

XIII. Source Reduction

Many paper mills are able to substitute chlorine dioxide for elemental chlorine in the bleach process and thus can significantly reduce dioxin and other chlorine related effluent levels. We are curious what measures have been implemented at the Rayonier Mill to source reduce pollutant levels by adopting the Best Available Technology for Kraft production mills. Source reduction is the best method for reducing and eliminating

[3] We have been told that this pipe is actually the discharge pipe for the City of Jesup. However, we have included this comment until such time that we can confirm this information.

discharges of pollutants that are harmful to the aquatic environment. A cost/benefit analysis may demonstrate that source reduction is more cost effective than rigorous monitoring and testing for an extended period of years. See *REI Report.*

XIV. The Effluent Limitations Fail to Include Limits and/or Monitoring Requirements for Sulfates

In addition to the pollutants listed above, application materials submitted by Rayonier indicate that the plant is discharging high levels of sulfates. For instance, for Outfall 1, the sulfate concentration is 700 mg/l. Given that sulfates are discharged at fairly high concentrations from Rayonier's waste ponds, the Study failed to address the impact of this pollutant on the River. Moreover, the permit fails to contain any conditions with respect to this pollutant. The permit should be modified to address the impact that sulfates may have on the receiving waters.

XV. Toxicity Testing

The draft NPDES permit does not include a requirement for an annual 129 priority pollutant scan. See *REI Report.*

XVI. O & M Manual

There is no requirement in the draft NPDES permit for an approved operations & maintenance (O&M) manual at the facility.

XVII. Certified Operator

There is no requirement in the draft NPDES permit for a certified operator at the facility.

XVIII. Limitations on BOD and TSS

The Process Flow Diagram (PFD) of the wastewater treatment plant (WWTP) included in the NPDES permit application is very confusing since it does not have an explanation of the liquid and solid waste streams and the numerous abbreviations that are used throughout. Accurate PFDs should be requested for both the WWTP and the manufacturing processes.

XIX. The Permit Fails to Protect Water Quality from Stormwater Discharges

The permit discusses the discharge of "storm water runoff." We have inquired about Rayonier ITT with EPD's Stormwater Division. Based on the information that we obtained, Rayonier does not appear to have a permit to discharge stormwater. Instead, it appears that such a discharge is allowed through this proposed permit. As an initial matter, the Draft Permit contains no discussion of the methods to prevent unlawful discharges of storm water. As you may know, under Georgia's General Permit governing

industrial activity, each industrial user must develop a Storm Water Pollution Prevention Plan (Plan) which must be prepared "according with good engineering practices and certified by an individual with the education, experience and accountability necessary for its implementation." See General Permit for Stormwater Discharges Associated with Industrial Activity. Contents of the Plan are detailed and include: identification of specific individuals that are responsible for developing the plan, description of the potential pollutant sources, drainage maps, inventory of exposed materials, a list of significant spills and leaks that occurred in areas exposed to precipitation, sampling data, risk identification, measures and control including good housekeeping, preventative maintenance, spill prevention and response procedures, inspections, etc. Id. We recommend that Rayonier be required to prepare and implement a comprehensive plan to prevent storm water runoff that is subject to public review.

XX. Limitations on COD

The COD to BOD_5 ratio in the influent is in the range of 5.3 to 5.9. A ratio higher than 3 is indicative of refractory (or harder to degrade organics) in the wastewater. It appears therefore that a COD limitation should also be established to reduce pollutant loadings to Altamaha.

XXI. Additional Information Should Be Provided to the Public in Order to Comply with the Public Participation Requirements of the Clean Water Act

In order to be valid, an NPDES permit must be issued in compliance with the applicable statutory and regulatory requirements of the Clean Water Act. 40 C.F.R. § 122.4. A fundamental requirement, applicable to the states pursuant to federal and state law, see 40 C.F.R. § 123.25; Georgia Rules and Regulations for Water Quality Control, 391-3-6-.06 (7)(b) (Georgia Rule), is that of meaningful public participation in the permitting process. As stated by the D.C. Circuit:

> The requirement of public participation in efforts to control water pollution is established in the congressional declaration of policy and goals of the Act:
>
> > Public participation in the development, revision, and enforcement of any regulation, standard, effluent limitation, plan, or program established by the Administrator or any State under this chapter shall be provided for, encouraged, and assisted by the Administrator and the States. . . .
>
> . . . The legislative history of the Act repeatedly echoed the desire "that its provisions be administered and enforced in a fishbowl-like atmosphere."

Natural Resources Defense Council v. Environmental Protection Agency, 859 F.2d 156, 175 (D.C.Cir.1988) (quoting 33 U.S.C. § 1251(e) (1982)). In fulfilling the Congressional mandate that decision-making in the context of the Clean Water Act include meaningful public participation, EPD must comply with specific procedural requirements prior to issuance of an NPDES permit. For instance, EPD must provide

public notice of every **complete** permit application, and must also prepare and circulate that notice in accordance with specific procedures delineated in state regulations. Georgia Rule, 391-3-6-.06(7).

After a review of the Draft Permit and accompanying information, many questions remain that preclude the public from engaging in a meaningful evaluation of the permit conditions. Specifically, it is unclear:

- As to the location of the sludge disposal and the precise monitoring and reporting requirements which would apply.

- Whether Form R should under the EPCRA been reviewed to evaluate what chemicals exceed the SARA Title 313 thresholds?

- Whether there has been sufficient evaluation of the applicability of Best Available Technology (BAT) and the Best Practicable Technology (BPT) provided in 40 CFR Part 430.

- Whether Rayonier has evaluated alternate technologies to eliminate Dioxin.

- Whether Rayonier has evaluated water recycling/reuse to reduce the volume of effluent discharge.

- Whether the type of reliability requirements have been built into the design of the Wastewater treatment facility as required under Part II.A.3. of the NPDES permit. For instance, can the facility operate for instance with the single largest unit out of service for any piece of equipment? Are either dual power sources or backup power available?

- Whether the facility has a spill prevention control and countermeasures (SPCC) plan particularly in light of the sewage and acid spills?

- Upon what basis the production data is based. Specifically, the rationale contained in the permit application assumes that of the total production of 1712 net dry tons/day 36% is dissolving pulp and 64% is bleached kraft production. The NPDES permit application does not contain this information.

- Whether the permittee certified that they do not use chlorophenolic-containing biocides to Georgia EPD? If not, 430.14 limitations for pentachlorophenol and trichlorophenol could apply as well for dissolving pulp manufacture.

- Whether effluent limitations contained in Part 430.22 (a) have been applied for market pulp. However, if Rayonier has either Wet Barking Operations; Log Washing or Chip Washing Operations; Log Flumes or Log Ponds, more stringent limitations specified in 430.22(b) (c) or (d) can apply. The Rationale sheet does not present any information on this.

- Whether market pulp the only product manufactured?

- Whether 430.24(a)(1) and/or 430.24(a)(2) applicable and if not, why.

XXII. Additional Information Is Needed to Adequately Determine Necessary Permit Conditions to Protect Water Quality

The Ecological Assessment is Flawed

An ecological assessment was conducted for an 11-mile segment of the Altamaha River presumably to support the permit conditions contained in the Draft Permit. See Rayonier Study. This Study, however, fails to provide sufficient information on which permitting decisions adequate to protect water quality can be made. The study fails to provide adequate information as follows:

- The water quality survey and stream bioassessment are based on macroinvertebrate, periphyton, and water quality sampling conducted on two days: October 29, 1998 and August 4, 1999. Both of these sampling events were conducted under low flow conditions on the river. Sampling on each day was conducted at six stations, two upstream and four downstream of the Rayonier outfall locations; no sampling was conducted in the river segment between the two outfalls. A very limited number of samples (benthic invertebrates, periphyton on submerged logs, water samples) were collected at each station. There is also some indication that some of the sampling locations were on the opposite side of the river from Rayonier's discharge. This very limited amount of sampling and the subsequent use of rapid bioassessment procedures (discussed below) provides little more than a brief snapshot of conditions in the river on two days and little basis for determining the health of the aquatic ecosystem.

- The reasoning and procedures for selecting sampling station locations are not made clear in the report. There is no reason given for excluding the river segment between the two outfalls, nor for the choice of the upstream reference site (just downstream of the mouth of Goose Creek).

- The study makes use of three kinds of metrics for assessing water quality and biological health of the river: state water quality standards as benchmarks for water quality measurements, a modified version of the draft Georgia Bioassessment Protocol for invertebrates and riparian habitat, and a draft version of EPA's rapid bioassessment protocol for periphyton. The use of unofficial draft versions of the Georgia and EPA assessment tools and subsequent modifications to at least one of these procedures by the investigators puts the conclusions on shaky ground from the start. It is not clear whether these documents (and especially modifications to them) have been peer reviewed, nor whether they have been thoroughly tested for use in a large alluvial coastal plain river like the Altamaha. For example, the invertebrate and periphyton metrics appear to be

strongly influenced by samples with low numbers of taxa present, yet low invertebrate species richness (especially for benthic organisms) is characteristic of large alluvial rivers. The study did not include any fish sampling or fish-based assessment methods such as the widely used Indicator of Biotic Integrity (IBI).

- None of the bioassessment metrics employed in the study seemed particularly sensitive to observed trends in the sampling data. The 1998 sample data showed consistent trends of decreasing quality from upstream to downstream stations in most of the invertebrate and periphyton metrics, yet this information is reduced in the end to qualitative scores of "good" or "very good" for each station. The high overall scores received is an indication that there were no severe water quality problems at the time of the sampling, but nevertheless, the raw data indicate that the discharge may be having some effect on the aquatic community and this information is lost in the use of the metrics. Some metrics in the invertebrate and periphyton methods were not scored because no scoring system had yet been proposed in the draft versions of these protocols used by the investigators. No significant trends were observed in the 1999 raw data, and qualitative scores were again rated as "good" or "very good;" in several cases, downstream stations scored higher than the upstream "reference" station. The riparian habitat metrics employed in the assessment appear irrelevant to the study objectives as they would not likely be affected by Rayonier's discharge.

Sampling Results and Other Materials Indicate that Additional Study is Needed

As discussed above, many questions remain regarding the impact of Rayonier's discharge on the receiving waters. Based on both sampling results and information contained in Rayonier's permit application, it is unclear whether pollutants are being discharged in harmful quantities (e.g. manganese, vanadium, etc.). Moreover, other conditions of the Rayonier plant may be impacting water quality (e.g. unlined treatment ponds, failure to prepare a stormwater pollution prevention plan). We strongly recommend that EPD conduct further study to ensure that the discharge is not harming aquatic life in the Altamaha River.

XXIII. Conclusion

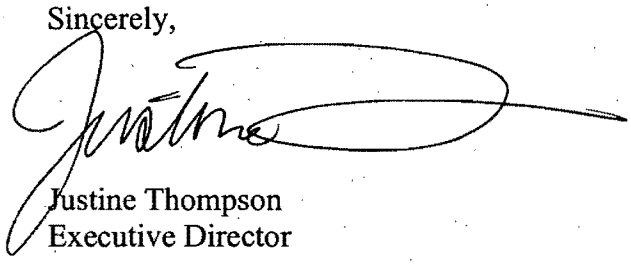
As discussed above, after a careful review of the proposed permit, we have grave concerns that Rayonier is having an deleterious impact on the Altamaha River. Rayonier's discharge is one of the largest discharges in the state yet the permit contains few limitations and few monitoring requirements. We recommend that EPD thoroughly evaluate and study the impact that Rayonier's discharge and carefully consider the information already provided and modify the permit accordingly.

Please describe, consider and respond to each comment in accordance with 40 C.F.R. § 124.17 (a). See also Georgia Rule 391-3-6-.06(7)(b)(1)(iv); In re The Conservation Society, Inc. and Terrence D. Hughey, DNR-EPD-WQ-AH 5-92, 9-10 (Ga. Bd. of Nat. Resources, Sept. 24, 1993) (emphasis added) (requiring that EPD "prepare

and present a public response to *all* submitted comments at or before the time one issues a permit." Id. at 9-10 (emphasis added). Failure to respond to comments in accordance with Section 124.17 is both a violation of federal law and Georgia state law. Id.

Thank you for your time and consideration. Should you have any additional questions or concerns, please feel free to contact me at (404) 659-3122.

Sincerely,



Justine Thompson
Executive Director

Enclosures

ANALYSIS
OF THE
PROPOSED RAYONIER PAPER MILL
NPDES PERMIT

JESUP, GEORGIA

Background

The Rayonier Mill is a Bleached Kraft Mill producing predominantly fluff and specialty grade papers. The plant is located adjacent to the Altamaha River in Jesup, Wayne County, Georgia. The State of Georgia NPDES permit (GA0003620) for the plant is now being re-issued. The current permit has effluent standards for Biological Oxygen Demand (BOD5, measured daily), Total Suspended Solids (TSS, measured daily), color (measured weekly), Dioxin 2,3,7,8-TCDD (measured quarterly), pH (measured daily) and Berylium (measured monthly). The pollutants are sampled at two discharge locations prior to mixing with receiving waters and are combined to compose a single sample for analysis procedures.

In the 1998 USEPA Envirofacts database for Rayonier, the facility also releases other pollutants to "surface waters" in addition to those listed in the NPDES permit. These pollutants include: Acetaldehyde (1,900 lbs/yr); Ammonia (5,000 lbs/yr); Barium compounds (33,000 lbs/yr); Catechol (2,100 lbs/yr); Chloroform (80 lbs/yr); Mixed Isomer Cresol (380 lbs/yr); Formaldehyde (440 lbs/yr); Manganese compounds (93,000 lbs/yr); Methyl Ethyl Ketone (1,600 lbs/yr); Phenol (460 lbs/yr); Zinc compounds (6,700 lbs/yr).

In the NPDES permit fact sheets prepared by Rayonier, there are other effluent components listed in the discharge in addition to those effluents in the current NPDES permit. These effluents include fecal coliform, vanadium, ammonia, zinc, phenols, fluorides and chlorine.

Redwing Environmental Inc. (REI) was retained to perform sampling on the Altamaha River and to evaluate the proposed Rayonier Paper Mill NPDES permit to help determine if the mill and NPDES permit will adequately protect the water quality and biological integrity of the Altamaha River.

Methods

Based upon our review of the information provided and available funds, we recommended sampling for various components. Advanced Chemistry Labs (ACL - an EPA approved lab) performed analyses for Arsenic, Barium, Beryllium, Cadmium, Chromium, Lead, Manganese, Mercury, Selenium, Silver, Vanadium, Zinc, Methyl Ethyl Ketone and Color. Redwing Environmental Inc. (REI) provided additional analyses for

Turbidity, Ammonia-Nitrogen, Nitrates, Chlorides, Sulfides, Copper and Phosphate using an EPA approved turbidity meter and LaMotte field test kits.

Prior to sampling, pre-prepared sample bottles were picked up from ACL in Atlanta, Georgia. The bottles were kept refrigerated and transported to the sampling site in an ice cooler to preserve the integrity of the bottle preservative contents. Water samples were collected as grab samples at approximately one foot below surface. At each location, the sample handler, wearing disposable vinyl gloves, oriented the bottle upstream away from the hand while filling the bottle. An A-bottle (non-preserved 1-liter plastic bottle) was filled to the surface. The A-bottle was then used to fill the other lab bottles. Once filled, the prepared bottles were then capped and labeled with location, time, date and initials of sampler. Each prepared bottle was then placed in a Ziploc bag to prevent any cross contamination between samples. The A-bottle was then thoroughly rinsed and filled to the top for REI analysis purposes. All samples were then stored in an ice cooler and transported to ACL and REI locations for analysis. Samples were maintained under full chain-of-custody procedures at all times.

The site visit and sample collection occurred on December 20, 2000. Samples were collected immediately above the Rayonier Rail Line across the Altamaha River (Background), at the discharge of Rayonier Outfall 2, and 300 hundred yards downstream of Outfall 2.

Results

The ACL lab results are shown in Table 1 and actual lab reports are enclosed in Attachment A. Table 2 shows the analysis performed by REI.

TABLE 1
ACL ANALYSIS RESULTS

Sample ID: B.G. Background
ACL Sample No: 163601

Date Sampled: 12-20-00

Matrix: Water

Analysis (Method)	Result	Det. Limit	Units	Date of Analysis	Analyst
Methyl ethyl Ketone (EPA 8260B)	BDL	20	µg/liter	12-23-00	TL
Arsenic (EPA 6010B)	BDL	0.030	mg/liter	12-28-00	CP
Barium (EPA 6010B)	0.038	0.010	mg/liter	12-28-00	CP
Beryllium (EPA 6010B)	BDL	0.004	mg/liter	12-28-00	CP
Cadmium (EPA 6010B)	BDL	0.005	mg/liter	12-28-00	CP
Chromium (EPA 6010B)	BDL	0.010	mg/liter	12-28-00	CP
Lead (EPA 6010B)	BDL	0.010	mg/liter	12-28-00	CP
Manganese (EPA 6010B)	0.078	0.050	mg/liter	12-28-00	CP
Mercury (EPA 7470A)	BDL	0.0005	mg/liter	12-28-00	AD
Selenium (EPA 6010B)	BDL	0.040	mg/liter	12-28-00	CP
Silver (EPA 6010B)	BDL	0.010	mg/liter	12-28-00	CP
Vanadium (EPA 6010B)	BDL	0.020	mg/liter	12-28-00	CP
Zinc (EPA 6010B)	BDL	0.020	mg/liter	12-28-00	CP
Color (ADMI @ pH=7.6)(SM2120E)	35	5	Pt-Co	12-26-00	AS
Color (ADMI @ orig. pH)(SM2120E)	33	5	Pt-Co	12-26-00	AS

John Andros, Lab Manager

BDL = Below Detection Limit

Sample ID: Pipe Outfall
ACL Sample No: 163602

Date Sampled: 12-20-00

Matrix: Water

Analysis (Method)	Result	Det. Limit	Units	Date of Analysis	Analyst
Methyl ethyl Ketone (EPA 8260B)	BDL	20	µg/liter	12-23-00	TL
Arsenic (EPA 6010B)	BDL	0.030	mg/liter	12-28-00	CP
Barium (EPA 6010B)	0.042	0.010	mg/liter	12-28-00	CP
Beryllium (EPA 6010B)	BDL	0.004	mg/liter	12-28-00	CP
Cadmium (EPA 6010B)	BDL	0.005	mg/liter	12-28-00	CP
Chromium (EPA 6010B)	BDL	0.010	mg/liter	12-28-00	CP
Lead (EPA 6010B)	BDL	0.010	mg/liter	12-28-00	CP
Manganese (EPA 6010B)	0.090	0.050	mg/liter	12-28-00	CP
Mercury (EPA 7470A)	BDL	0.0005	mg/liter	12-28-00	AD
Selenium (EPA 6010B)	BDL	0.040	mg/liter	12-28-00	CP
Silver (EPA 6010B)	BDL	0.010	mg/liter	12-28-00	CP
Vanadium (EPA 6010B)	BDL	0.020	mg/liter	12-28-00	CP
Zinc (EPA 6010B)	BDL	0.020	mg/liter	12-28-00	CP
Color (ADMI @ pH=7.6)(SM2120E)	120	5	Pt-Co	12-26-00	AS
Color (ADMI @ orig. pH)(SM2120E)	120	5	Pt-Co	12-26-00	AS

BDL = Below Detection Limit

Sample ID: 300 Yards
ACL Sample No: 163603

Date Sampled: 12-20-00

Matrix: Water

Analysis (Method)	Result	Det. Limit	Units	Date of Analysis	Analyst
Methyl ethyl Ketone (EPA 8260B)	BDL	20	µg/liter	12-23-00	TL
Arsenic (EPA 6010B)	BDL	0.030	mg/liter	12-28-00	CP
Barium (EPA 6010B)	0.052	0.010	mg/liter	12-28-00	CP
Beryllium (EPA 6010B)	BDL	0.004	mg/liter	12-28-00	CP
Cadmium (EPA 6010B)	BDL	0.005	mg/liter	12-28-00	CP
Chromium (EPA 6010B)	BDL	0.010	mg/liter	12-28-00	CP
Lead (EPA 6010B)	BDL	0.010	mg/liter	12-28-00	CP
Manganese (EPA 6010B)	0.109	0.050	mg/liter	12-28-00	CP
Mercury (EPA 7470A)	BDL	0.0005	mg/liter	12-28-00	AD
Selenium (EPA 6010B)	BDL	0.040	mg/liter	12-28-00	CP
Silver (EPA 6010B)	BDL	0.010	mg/liter	12-28-00	CP
Vanadium (EPA 6010B)	0.022	0.020	mg/liter	12-28-00	CP
Zinc (EPA 6010B)	BDL	0.020	mg/liter	12-28-00	CP
Color (ADMI @ pH=7.6)(SM2120E)	45	5	Pt-Co	12-26-00	AS
Color (ADMI @ orig. pH)(SM2120E)	43	5	Pt-Co	12-26-00	AS

BDL = Below Detection Limit

Table 2
Redwing Environmental Analysis Results

Parameter	Background	Outfall 2	300 yards downstream
Turbidity	7.2 NTU	18.4 NTU	11.0 NTU
Ammonia Nitrogen	0	0	0
Chlorides	20 ppm	74 ppm	38 ppm
Copper	0	0	0
Nitrate	<0.2 ppm	<0.2 ppm	<0.2 ppm
Phosphate (total)	<0.2 ppm	<0.2 ppm	<0.2 ppm
Sulfide	ND	ND	ND

ppm = parts per million ND = not detected

Findings

Metals

The ACL analysis reveals that there are detectable levels of Barium, Manganese, and Vanadium in the vicinity of the Rayonier plant. Unfortunately, our "background" sample site is downstream of Outfall 1 and therefore, the presence of these elements cannot be absolutely attributable to Rayonier. These elements can originate from several sources including: Rayonier Outfall 1; from the leachate of the unlined Rayonier treatment ponds immediately adjacent to the Altamaha River; or from industrial sources upstream of the Rayonier plant. We strongly recommend that EPD investigate the sources of these discharges and determine if Rayonier is the origin. We also note that our samples were taken from the river itself and therefore are diluted by mixing and do not reflect the true levels from a discharge source that would be limited under a normal permitting process. The actual discharge value would be significantly higher than the levels measured after mixing and may be in violation of regulatory standards.

Color

The analysis of color certainly shows a distinct color change from "background" and the discharge at Outfall 1. We chose to use the American Dye Manufacturers Institute (ADMI) method for color analysis. The ADMI method analyzes color without regard to color hue and is a widely accepted method of color analysis. The differential change was 35 ADMI units at background, 120 ADMI units at Outfall 2, and 45 ADMI units 300 yards downstream from Outfall 2. This equals a 350% change from background and Outfall 2. The information supplied by Rayonier shows color values as high as 1,695 units in a combined 24 hour composite sample from Outfalls 1 and 2. The attached aerial photographs show a significant visual change in river color at Outfall 2. The NPDES permits should establish a color standard of no more than 50 ADMI unit changes from background.

Turbidity

The laboratory analyses performed by REI also show trends and indicators that point to sources of turbidity pollutants from the Rayonier discharge. There is a 2.5 fold increase in turbidity from Background and Outfall 1. The effects of the turbidity are still noticeable 300 yards downstream (1.5 increase from background).

Chlorides

Other effluent concerns raised are significant increases in chlorides. Chlorides are binary compounds of chlorine. Rayonier uses extensive amounts of chlorine in their bleach process. Chlorine is a very reactive element that can form chlorides (salts) when

mixed with any reactive metal elements. We are not certain of the processes involved before Rayonier discharges into the Altamaha River, but we are concerned that the Chloride levels at Outfall 2 are over three times the level at our background sample point. This is an indicator that Chlorine and reactive metals are in solution together prior to the discharge, perhaps in the unlined basins.

Other Issues of Concern

Chlorine

Chorine is the elemental chemical used in the bleach process at Rayonier. We find it appalling that no monitoring or limitation requirements exist for chlorine/chlorides at Outfalls 1 and 2. Our tests demonstrate conclusively that chlorine/chlorides are being discharged at Outfall 2. It is unacceptable to issue and NPDES permit with no monitoring and limitations for chlorine/chlorides unless Rayonier can demonstrate complete recapture/recycling of these elements in their production and treatment processes.

Unknown Outfall

During our site visit, we observed an active discharge pipe outlet on the bank of the Altamaha River. This discharge is located within the Rayonier property between Outfalls 1 and 2. This discharge was not shown on any of the flow process diagrams we reviewed for the Rayonier plant. We did not have extra sample collection bottles prepared and therefore could not sample and analyze the discharge of this outfall. We are concerned about the lack of information regarding this discharge and its effluent contents. We strongly recommend additional investigations into the origin and content of this discharge.

Unlined Treatment Ponds

Of great concern is the fact that the containment ponds at the Rayonier plant are unlined and are immediately adjacent to the Altamaha River. These ponds are in direct contact with the ground water table and thus, the river itself. We recommend that Rayonier include additional sample collection and monitoring along the ponds (including dye leachate tests) to determine the contents and rate of discharge of the ponds into local groundwater and the Altamaha River. These ponds may be sources of pollutant levels that are higher than the discharge Outfalls.

Dioxin and AOX Testing

The Dioxin test procedures for the Rayonier permit only test for one isomer of dioxin. Further, that isomer is only tested for in fish fillets. It is important to note that dioxin is not normally equally disturbed throughout an organism and is may be concentrated in internal process organs such as the liver. There are 17 dioxin congeners and Rayonier tests for only the most common congener ((2,3,7,8 –TCDD). A more adequate assessment would test for all 17 congeners and then convert to a total value based on the US EPA's conversion methodology. We recommend "Total Quantity" testing for the 17 congeners using whole fish specimens collected immediately downstream of all three outfalls.

The current permit limitation for dioxin is based on the average flow of the receiving water while the other effluent limitations are based on the 7Q10 flow. We recognize that dioxin limitations based upon average flow are an accepted regulatory method, however, the average flow method does not protect aquatic life and is even more concerning when considering that virtually any discharge of dioxin is accepted as harmful. We strongly recommend water quality standards for dioxin based upon 7Q10 in conjunction with the other effluents.

Other NPDES permits in Georgia require paper mills to monitor for Adsorbable Organic Halogens (AOX). AOX is a measure of a complex suite of halogenated compounds that are common in bleach kraft mill discharges including chlorides, bromides, and iodides. These compounds are bioaccumulators, though not necessarily biomagnifyers such as Dioxin. Combining AOX analysis with the results of the Dioxin tests will give a much better picture of Rayonier's effect on the Altamaha River.

Lack of Complete Effluent Testing

Rayonier is required to perform a 129 priority pollutant scan only every five years concurrent with NPDES permit renewal. Because there are so many possible pollutants that could be present in the outfall discharges at any given time, we believe the priority pollutant scan should be performed at least annually for each discharge beginning prior to the issuance of a new NPDES permit. The scan will help identify effluent constituents that are currently unknown.

Mass vs. Concentration Limitations

The current NPDES permit is based upon mass limitations and not concentration values. This method can allow a discharger to have a high concentration of waste in low flow and would raise the effluent limits beyond the regulatory standards. For example, the daily average mass limitation for BOD_5 for the period December 1 to April 30 is 32,000 lbs/day. At an average flow of 61.58 MGD for both outfalls combined the mass limit translates to a concentration value of 62.31 mg/L. This is over twice the amount of the

typical monthly average limitation of 30 mg/L. The same principle holds true for all other effluent limitations. The NPDES permit should have concentration based limitations, not mass based limitations.

Combined Sampling

We see no justification to combine the effluent of Outfalls 1 and 2 for analysis. Depending on the particular volume and constituents of each outfall, this methodology could lead to a drastic dilution of a single outfall that in actuality could be discharging contaminants at levels that are harmful to the aquatic life of the Altamaha River. We strongly recommend individual analysis of each outfall and separate NPDES permit limitations for each outfall.

Temperature

The NPDES permit also fails to adequately protect aquatic life in the Altamaha River from thermal loading. Water temperature is a significant factor effecting aquatic life. During periods of low river flow and maximum mill discharge, Rayonier can drastically effect the water temperature of the river. We recommend that the discharge temperature at least be included in the NPDES monthly monitoring to determine any possible effects the mill may be having on the river.

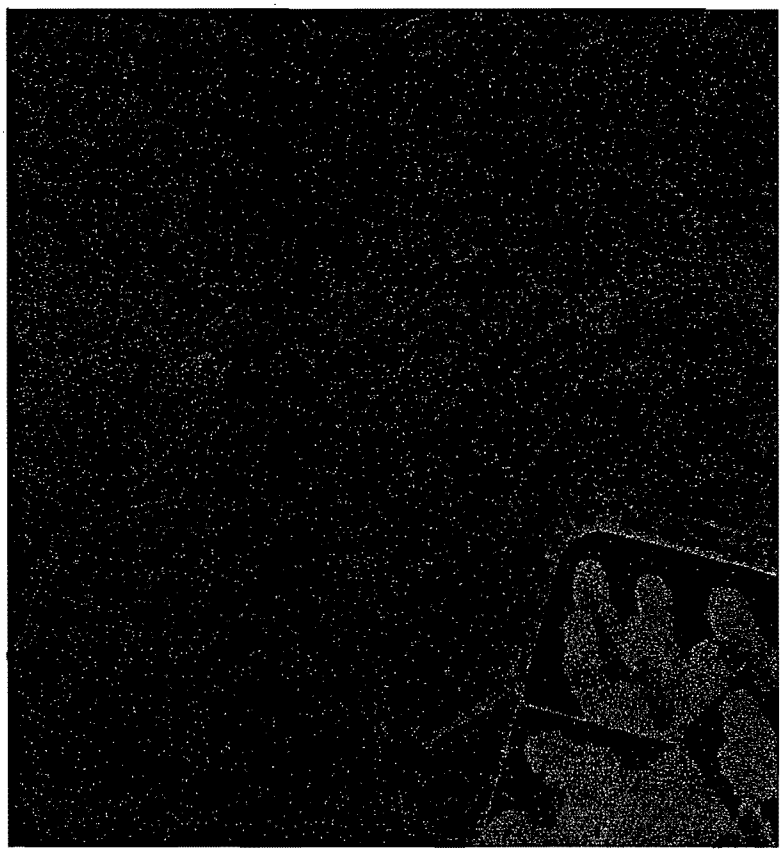
Source Reduction

Many paper mills are able to substitute Chlorine dioxide for elemental chlorine in the bleach process and thus can significantly reduce dioxin and other chlorine related effluent levels. We are curious what measures have been implemented at the Rayonier Mill to source reduce pollutant levels by adopting the Best Available Technology for Kraft production mills. Source reduction is the best method for reducing and eliminating discharges of pollutants that are harmful to the aquatic environment. A cost/benefit analysis may demonstrate that source reduction is more cost effective than rigorous monitoring and testing for an extended period of years.

Conclusion

The sampling and permit evaluation by REI revealed severe discrepancies in the way the Rayonier Mill addresses discharges into the Altamaha River. The proposed NPDES permit will not protect the water quality and biological integrity of the Altamaha River. The most alarming issue is the fact that so many compounds are knowingly being discharged and at least one unidentified outfall exists. These discharged compounds and the unidentified outfall are not being tested/monitored and do not have limitations

established. We fail to see how any NPDES permit can be issued until there is a better understanding of the full array of effluent components, their quantity, and source. When these effluent facts have been established, the NPDES permit should set discharge limitations for each effluent component based upon concentration values at each discharge point. The new NPDES permit should incorporate more frequent and detailed effluent and fish monitoring. The Rayonier Mill should investigate source reduction methods that could more adequately protect the aquatic environment of the Altamaha River and may be more cost effective than long term testing and monitoring.



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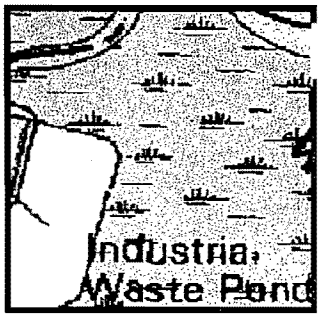


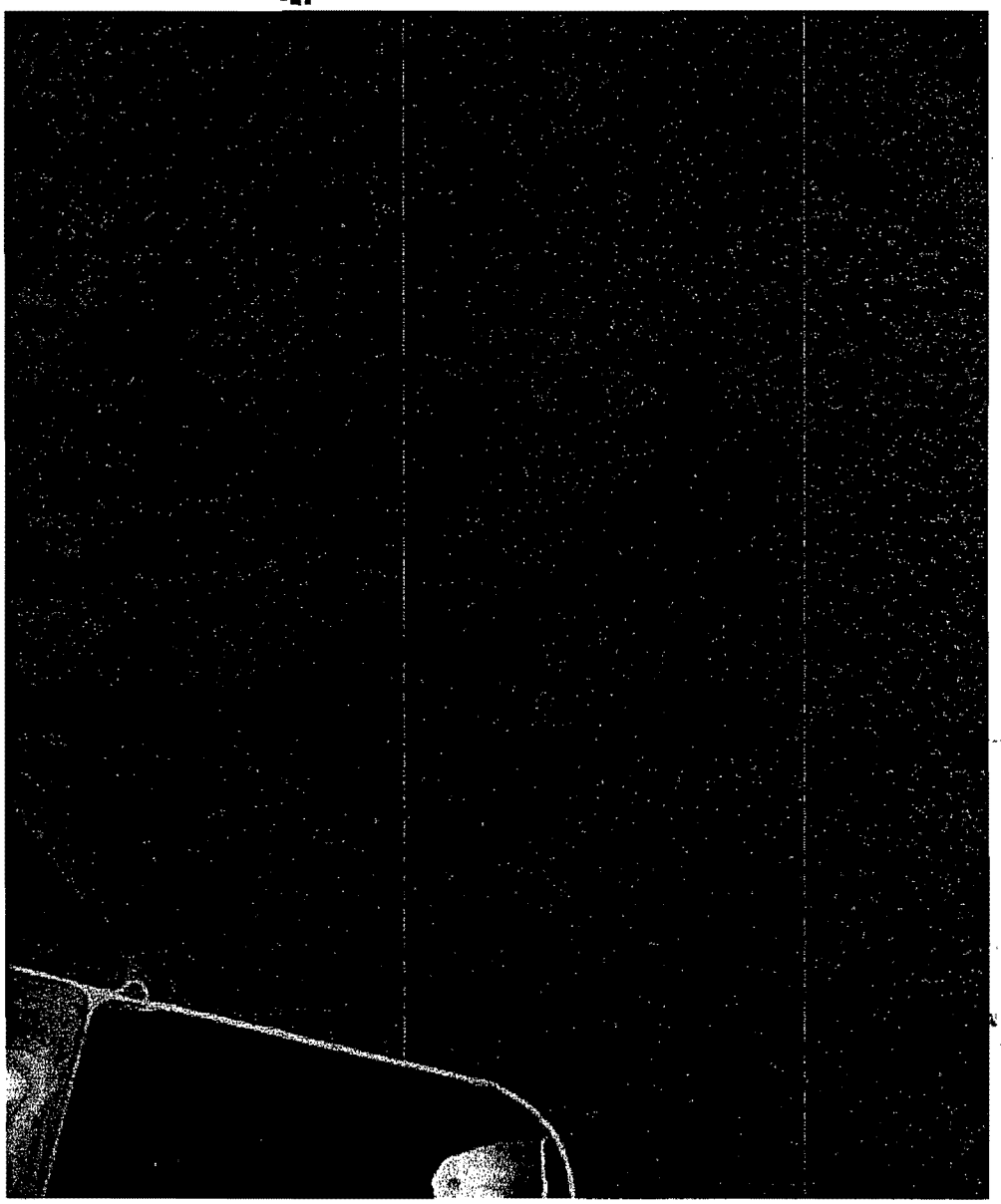
Other Imagery:

SPIN-2 Satellite Image
18 Feb 1998

USGS Topo Map
01 Jul 1980

9 km NE of Jesup, Georgia, United States 01 Feb 1993

Zoom 2m



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ENVIRONMENTAL PROTECTION DIV.
WATER PROTECTION BRANCH

February 14, 2001

Glynn Environmental Coalition
P. O. Box 2443
Brunswick, Georgia 31521

RECEIVED
FEB 19 2001
ENVIRONMENTAL PROTECTION DIVISION
DIRECTOR'S OFFICE

Director
Georgia Environmental Protection Division
205 Butler Street, SE
Floyd Towers East
Atlanta, Georgia 30334

Re: NPDES Permit No. GA 003620 for Rayonier Jesup Mill.

Dear Director,

The Glynn Environmental Coalition (GEC) submits the following comments on the Draft National Pollutant Discharge Elimination System (NPDES) Permit No. GA 003620 (NPDES Permit) for Rayonier Jesup Mill in the Altamaha Riverbasin. The GEC is located in Glynn County, Georgia, which is bordered to the north by the Altamaha River, and is located down stream from the discharge from the Rayonier Jesup Mill. We are submitting comments because failure to protect the Altamaha River from chemical and other water degrading discharges upstream will adversely affect natural resources, recreational potential, and be economically harmful.

The GEC has reviewed the comments dated February 13, 2001, on the Rayonier Jesup Mill NPDES Draft Permit submitted by Justine Thompson, Executive Director, Georgia Center for Law in the Public Interest, and includes them herein by reference.

The NPDES Permit does not comply with legal requirements with respect to color and turbidity. At a minimum, the NPDES Permit must include quantifiable limits on color and turbidity and a specific method for taking the measurement. I have been in the area, both above and below the discharge points for the Rayonier Jesup Mill. A dramatic change in watercolor was observed, as has been documented by aerial photos. The NPDES Permit should address this ongoing problem and have specific measures to end the degradation by turbidity and color change.

The NPDES Permit must adequately consider and address the harmful impact of dioxin, bioaccumulation, and require meaningful data be produced so the Georgia Environmental Protection Division (EPD) can assess the potential health ramifications to those consuming fish from the Altamaha River. Currently, the EPD only issues fish consumption advisories based on fish tissue data. A more adequate assessment would test for all 17 congeners and then convert to a total value based on the US EPA's conversion methodology. The maximum allowable detection limit should be 0.1 PPT (Part Per Trillion) so a meaningful value can be determined based on the US EPA's conversion methodology. The NPDES Permit should require the 17 congener testing be performed within 30-days of the permit issuance, and every three years thereafter, as is required

under the NPDES Permits for other mills on Georgia's coast. Dioxin testing should be required at a World Health Organization health lab because of the nature and low level of concerns of dioxin.

The NPDES Permit does not adequately provide for monitoring of temperature. Water quality standards with respect to temperature should also be specifically incorporated into the permit.

The NPDES Permit does not specify a precise sampling location for each outfall. Location, method of sample collection, and frequency of sampling and analysis should be specified in the Permit.

The draft NPDES Permit does not include a requirement for an annual 129-priority pollutant scan. In addition to requiring the 129-priority pollutant scan, the number of unidentified chemicals or compounds and levels detected should be reported, also.

It is unclear if the NPDES Permit evaluates a worse case scenario, such as a 100-year storm event. An engineering evaluation of the water treatment basins is needed to evaluate the ability of the structures to adequately handle the volume of water a 100-year event would produce without breaching and releasing water and sludge to the Altamaha River. This would be a release not permitted under the NPDES Permit that could have catastrophic and long lasting consequences to the Altamaha River. The NPDES permitting process should evaluate ability of the facility to handle a 100-year storm event without an unauthorized release. A 100-year storm event plan should be part of the NPDES Permit.

Thank you for your consideration of these comments. I will look forward to your response to the comments submitted.

Sincerely,

Daniel Parshley

10/24
MSC

GEORGIA CENTER FOR LAW IN THE PUBLIC INTEREST

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RECEIVED
OCT 23 2000
GEORGIA EPD WATER PROTECTION BRANCH
PERMITTING, COMPLIANCE AND ENFORCEMENT PROGRAM

October 19, 2000

VIA FACSIMILE (404) 362-2691
AND U.S. MAIL

Mike Creason
Permitting, Compliance and Enforcement Program
Environmental Protection Division
4220 International Parkway
Suite 101
Atlanta, GA 30354

Re: NPDES Permit No. GA 003620 for Rayonier Jesup Mill

Dear Mike:

Please accept these comments on Draft National Pollutant Discharge Elimination System (NPDES) Permit No. GA 003620 ("Draft Permit") for Rayonier Jesup Mill in the Altamaha Riverbasin. These comments are submitted on behalf of the Altamaha Riverkeeper ("ARK"). ARK is a non-profit environmental organization that was founded to protect and restore the habitat, water quality, and flow of the Altamaha River from its headwaters in the Piedmont to its terminus at the Atlantic Ocean near Darien. ARK's members live, work, and recreate in the Oconee, Ocmulgee, and Ohoopee riverbasins and their feeder streams that make up the Altamaha River watershed. We appreciate the opportunity to submit these comments.

I. The Ecological Assessment of the Impacted Area is Insufficient to Adequately Determine Necessary Permit Conditions to Protect Water Quality

We have reviewed the Draft Permit and are concerned that this permit will not adequately protect the chemical, physical and biological integrity of the receiving waters as required by both federal and state laws. See e.g. O.C.G.A. § 12-5-20, et seq.; 33 U.S.C. § 1251, et seq. Admittedly, an ecological assessment was conducted for an 11-mile segment of the Altamaha River presumably to support the permit conditions contained in the Draft Permit. See Water Quality Survey and Stream Bioassessment for Rayonier's Jesup, Georgia Mill (the "Rayonier Study"). This Study, however, fails to provide sufficient information on which permitting decisions adequate to protect water quality can be made. Specifically, please accept the following comments on the Study:

- The water quality survey and stream bioassessment are based on macroinvertebrate, periphyton, and water quality sampling conducted on two days: October 29, 1998 and August 4, 1999. Both of these sampling events were conducted under low flow conditions on the river. Sampling on each day was conducted at six stations, two upstream and four downstream of the Rayonier outfall locations; no sampling was conducted in the river segment between the two outfalls. A very limited number of samples (benthic invertebrates, periphyton on submerged logs, water samples) were collected at each station. There is also some indication that some of the sampling locations were on the opposite side of the river from Rayonier's discharge. This very limited amount of sampling and the subsequent use of rapid bioassessment procedures (discussed below) provides little more than a brief snapshot of conditions in the river on two days and little basis for determining the health of the aquatic ecosystem.

- The reasoning and procedures for selecting sampling station locations are not made clear in the report. There is no reason given for excluding the river segment between the two outfalls, nor for the choice of the upstream reference site (just downstream of the mouth of Goose Creek).

- The study makes use of three kinds of metrics for assessing water quality and biological health of the river: state water quality standards as benchmarks for water quality measurements, a modified version of the draft Georgia Bioassessment Protocol for invertebrates and riparian habitat, and a draft version of EPA's rapid bioassessment protocol for periphyton. The use of unofficial draft versions of the Georgia and EPA assessment tools and subsequent modifications to at least one of these procedures by the investigators puts the conclusions on shaky grounds from the start. It is not clear whether these documents (and especially modifications to them) have been peer reviewed, nor whether they have been thoroughly tested for use in a large alluvial coastal plain river like the Altamaha. For example, the invertebrate and periphyton metrics appear to be strongly influenced by samples with low numbers of taxa present, yet low invertebrate species richness (especially for benthic organisms) is characteristic of large alluvial rivers. The study did not include any fish sampling or fish-based assessment methods such as the widely used Indicator of Biotic Integrity (IBI).

- None of the bioassessment metrics employed in the study seemed particularly sensitive to observed trends in the sampling data. The 1998 sample data showed consistent trends of decreasing quality from upstream to downstream stations in most of the invertebrate and periphyton metrics, yet this information is reduced in the end to qualitative scores of "good" or "very good" for each station. The high overall scores received is an indication that there were no <u>severe</u> water quality problems at the time of the sampling, but nevertheless, the raw data indicate that the discharge may be having some effect on the aquatic community and this information is lost in the use of the metrics. Some metrics in the invertebrate and periphyton methods were not scored because no scoring system had yet been

proposed in the draft versions of these protocols used by the investigators. No significant trends were observed in the 1999 raw data, and qualitative scores were again rated as "good" or "very good;" in several cases, downstream stations scored higher than the upstream "reference" station. The riparian habitat metrics employed in the assessment appear irrelevant to the study objectives as they would not likely be affected by Rayonier's discharge.

- In addition, as discussed below, several important parameters critical to water quality were omitted from the study altogether (e.g. sulfates).

II. The Permit Fails to Include Adequate Limitations for Dioxin

Dioxin is one of the most toxic substances known to humans. Nevertheless, despite the clear threats posed by this dangerous chemical, the permit fails to protect public health and the environment. Accordingly, the permit should be modified as follows:

- Unless the facility runs for 24-hours per day, the dioxin standard should not be based on a 24-hour composite.

- Dioxin testing should be required at a World Health Organization health lab because of the ubiquitness nature and low level of concerns of dioxin. Any lab other than a WHO certified lab will not be able to produce scientifically-defensible results. As testing is only required once per quarter, this requirement will place no appreciable burden on the permittee.

- The effluent standard for dioxin should be based on a TQ which requires testing for all seventeen congeners and conversion based on the United States Environmental Protection Agency's most recent TEF's in the most recent dioxin reassessment.

- Dioxin has recently been declared a known human carcinogen. Many of the cancers caused by dioxin have long latency periods. As such, the permittee should be required to maintain all records pertaining to dioxin for a minimum of 50 years.

- Section III.C. states that the permittee may not discharge toxic pollutants in concentrations that are harmful to humans. However, according to recent EPA dioxin reassessment, all levels of discharge of dioxin are harmful to humans.

III. The Permit Fails to Include Effluent Limitations for Color and Turbidity

Ironically, although the Rayonier Study fails to provide sufficient information to adequately assess water quality in the impacted area with respect to many pollutants, where the Study does indicate a water quality problem, the permit conditions fail to

address such problems. Of greatest significance, the Study clearly indicates that the Rayonier discharge has impacted the receiving water with respect to color. The Study indicates that both turbidity and color were moderately high and showed distinct upstream to downstream trends; similarly Secchi disk values (a measure of light penetration) decreased from upstream to downstream, presumably as a result of the Rayonier discharge. In addition, Rayonier's own monitoring reports indicate a very high level of color discharge – a level considered high even for the paper and pulp mill industry. Moreover, residents in the area have indicated that the color discharge can be seen several miles downstream from the Plant's discharge.

Georgia's Rules and Regulations for Water Quality Control ("Georgia Rule") specifically provide that "[a]ll waters shall be free from material related to . . . industrial . . . discharges which produce turbidity, color, odor or other objectionable conditions which interfere with legitimate water uses." Georgia Rule, 391-3-6/03(5)(c). Moreover, the turbidity standard provides that "[a]ll waters shall be free from turbidity which results in a substantial visual contrast in a water body due to a man-made activity." Id. at (5)(d).

The evidence clearly indicates that color is visible several miles downstream from the Rayonier discharge. Rayonier's own data demonstrates that color is impacting the receiving waters. While Georgia's Rules do not provide a specific standard for color, it is clear that permit conditions must address color under these circumstances. As a matter of law, "[t]he failure of an agency to comply with its own regulations constitutes arbitrary and capricious conduct.." Simmons v. Block, 782 F.2d 1545, 1550 (11th Cir. 1986). Where an agency fails to act in accordance with its own regulations, such actions are 'not in accordance with the law.' Raymond Proffit Foundation v. U.S.E.P.A., 930 F. Supp. 1088, 1104 (E.D. Pa. 1996). As the Supreme Court has explained, agency action is arbitrary and capricious where the agency fails to "articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made,'" Motor Vehicle Manuf. Ass'n v. State Farm Mutual Automobile Ins., 463 U.S. 29, 43 (1983), or where

> the agency has . . . entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.

Id.; See also, Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402 (1971); Sierra Pacific Industries v. Lyng, 866 F.2d 1099 (9th Cir. 1989). The permit must be modified to include reasonable standards for color.

IV. The Effluent Limitations Fail to Include Limits and/or Monitoring Requirements for Temperature

Water temperature is one of the most significant environmental factors mediating aquatic productivity. As discussed by Delbert B. Hicks, an expert on the impacts of thermal discharges on aquatic life:

> [temperature] affects virtually all metabolic processes of plant and animals, stimulates and control reproductive strategies, affects the solubility and diffusion of gases like dissolved oxygen, affects distribution patterns of plants and animals, and in excess causes lethal effects in aquatic animals and plants. Water temperatures in the aquatic environment can naturally vary due to effects of solar radiation and air temperature. Water temperature changes due to thermal discharges, however, are more sustained and dramatic in effect.

Delbert B. Hicks, *Assessment of the Biological Effects of Waste Heat Discharged from Plant Branch*, 3, December 1997. In fact, high thermal loading can result in objectionable pollution conditions such as fish kills and algae growth. For instance, temperature levels as low as 93° can be lethal for a number of species of fish. Id. In fact, other waterbodies in Georgia have already been severely impacted by thermal discharges; for instance, Lake Sinclair has experienced massive fish kills and the infestation of a nuisance algae, *Lyngbya wollei*. See Professor Lawrence A. Dyck; *Lyngbya* Infestations in the Beaverdam Creek Region and Lake Sinclair, Ga., and the Relationship Between *Lyngbya* Infestations and Discharges of Heated Wastewater from Plant Branch; "Fish-Kill – Investigation Report," Fisheries Management Section, Georgia Department of Natural Resources, August 3, 1993.

Species in the Altamaha River are also particularly sensitive to changes in temperature. For instance, sturgeon migrate upstream to spawn and may be sensitive to increased temperature. Sturgeon require temperatures less than 29 Degrees Celsius ("C") or 85 Degrees Fahrenheit ("F"). However, according to information submitted by the permittee, the long-term average for summer temperatures was about 30° C (87 ° F) with maximum running as high as 35° (95° F). Despite the impact that even small changes in temperature can have on the integrity of the receiving waters, the Draft Permit does not adequately provide for monitoring of this parameter. We recommend that temperature be monitored upstream and downstream of the effluent to be submitted in monthly Discharge Monitoring Reports. The water quality standards with respect to temperature should also be specifically incorporated into the permit.[1]

V. The Effluent Limitations Fail to Include Limits and/or Monitoring Requirements for Dissolved Oxygen

According to monitoring conducted by the permittee, dissolved oxygen ("DO") levels were above state standards, but were depressed at the stations nearest the outfalls; a DO concentration of 5.05 mg/L (barely above the state limit of 5 mg/L) was measured just downstream of the outfall during the August 1999 sampling. This result raises the concern that dissolved oxygen could be reduced even further during extreme low flows,

[1] Georgia's water quality standards provide for a maximum of 90° and/or rise of 5° above ambient temperature. Georgia Rule, 391-3-6-.03 (6)(v). Failure to comply with water quality standards with respect to temperature or temperature conditions below 90° can also lead to a violation of the prohibition against discharges that, among other things, create objectionable conditions or interfere with legitimate water uses. Id. at (5).

resulting in increased stress to aquatic organisms. Nevertheless, the permit does not even include monitoring requirements or standards for DO. Such requirements should be placed in the permit.

VI. The Effluent Limitations Fail to Include Limits and/or Monitoring Requirements for Sulfates

Application materials submitted by Rayonier indicate that the plant is discharging high levels of sulfates. For instance, for Outfall 1, the sulfate concentration is 700 mg/l. Given that sulfates are discharged at fairly high concentrations from Rayonier's waste ponds, the Study failed to address the impact of this pollutant on the River. Moreover, the permit fails to contain any conditions with respect to this pollutant. The permit should be modified to address the impact that sulfates may have on the receiving waters.

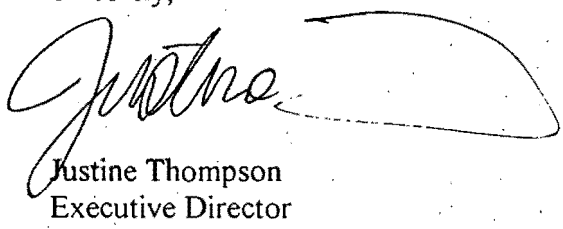
VII. Conclusion

As discussed above, we recommend that the permit be revised to include reasonable monitoring requirements and effluent limitations for: 1) dioxin, 2) color, 3) temperature, 4) dissolved oxygen, and 5) sulfates. Moreover, further study of the impacts of the Rayonier Plant discharge on the Altamaha River should be conducted taking into account the deficiencies in the prior Study discussed above.

Please describe, consider and respond to each comment in accordance with 40 C.F.R. § 124.17 (a). See also Georgia Rule 391-3-6-.06(7)(b)(1)(iv); In re The Conservation Society, Inc. and Terrence D. Hughey, DNR-EPD-WQ-AH 5-92, 9-10 (Ga. Bd. of Nat. Resources, Sept. 24, 1993) (emphasis added) (requiring that EPD "prepare and present a public response to *all* submitted comments at or before the time one issues a permit." Id. at 9-10 (emphasis added). Failure to respond to comments in accordance with Section 124.17 is both a violation of federal law and Georgia state law. Id.

Thank you for your time and consideration. Should you have any additional questions or concerns, please feel free to contact me at (404) 659-3122.

Sincerely,



Justine Thompson
Executive Director

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE

247 South Milledge Avenue
Athens, Georgia 30605

West Georgia Sub Office
P.O. Box 52560
Ft. Benning, Georgia 31995-2560

Coastal Sub Office
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Brunswick, Georgia 31520

October 19, 2000

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OCT 25 2000
ENVIRONMENTAL PROTECTION DIV.
WATER PROTECTION BRANCH

RECEIVED
OCT 24 2000
ENVIRONMENTAL PROTECTION DIVISION
DIRECTOR'S OFFICE

Harold Reheis
Director, Environmental Protection Division
Georgia Department of Natural Resources
Floyd Towers, East
205 Butler Street
Atlanta, Georgia 30334

Dear Mr. Reheis:

The U.S. Fish and Wildlife Service (Service) has received information regarding the proposed wastewater discharge permit for the Rayonier Jesup Mill located in Jesup, Wayne County, Georgia, NPDES Permit No. GA003620. In general, the permit, as proposed, will not sufficiently protect water quality. For example, there are several parameters that should be included in the permit, including BOD limits, color limits, flow, chlorine, and temperature limits. Other concerns regarding the proposed permit are specified below.

Effluent Toxicity - there is no indication that effluent toxicity tests are required as part of the permit conditions. This may be an oversight, however, considering the lack of information regarding the constituent elements in pulp effluent, toxicity tests are important in determining the potential for deleterious effects of the total effluent on aquatic biota both downstream and in the vicinity of the outflow. Therefore, the Service strongly recommends effluent toxicity tests be included in the permit.

Testing location - it is unclear from the proposed permit where the first sampling points are for temperature, dissolved oxygen, and pH. They are listed as "the U.S. Highway bridge, the Rayonier marker just upstream from the confluence of Penholloway Creek and the Altamaha River, and the monitoring station at Everett City." One station is close to 30 miles down river, and one may be more than twelve miles down stream. It is not evident that any samples will be collected within a reasonable distance from the outfall. Therefore, the river miles downstream from the outfall for each station should be included, and at least one station should be within 300 feet of the outfall.

Only fish fillets will be tested for dioxins. This will help determine the potential for risk to public health from consumption of contaminated fish, but will not adequately protect wildlife, including threatened or endangered species. Whole fish should be analyzed in addition to fillets,

to ensure that Federally-listed threatened or endangered species, in addition to other wildlife such as migratory birds, are not potentially exposed to harmful levels of dioxins.

In summary, the Service recommends that the proposed permit include the following:

- effluent limits for BOD, DO, temperature, color, and chlorine
- regular toxicity testing
- monitoring locations immediately downstream form the outfall
- whole fish dioxin analysis

Thank you for the opportunity to review and comment on the proposed permit. If you have any questions regarding the above comments, please contact Karen Salomon, at (912) 265-9336 x 31.

Sincerely,

Greg Masson for

Sandra S. Tucker
Field Supervisor

cc: Jeffrey H. Larson, EPD
Altamaha Riverkeepper
GCLPI, Justine Thompson
FWS, Brunswick

Eve Zimmerman To: Karrie-Jo Shell/R4/USEPA/US@EPA

10/31/2000 04:30 PM

cc:

Subject:

My comments on the DO issue in the Rayonier Permit are as follows:

Georgia standards require that the fishing designated have a daily average of 5.0 mg/l and no less than 4.0 mg/l at all times. The information presented in the letter do not state if the 5.05 mg/l is a daily average or a one time reading. Even if it is a daily average it complies with the criterion and consistent with Georgia standards. As for the low flow conditions, the waste allocation should have been done at critical flow conditions, 7Q10. This would address DO concern relative to flow.

The sulfate issue, if there is any issue, could be addressed by the narrative criteria in Section 5(e). First, there should be a finding that the sulfate discharged is harmful to humans, animals or aquatic life. Next, the amount which can be discharged without harm must be determined. EPA's only has criteria that protects the domestic water supply.

Hope that these thoughts are helpful.

GEORGIA CENTER FOR LAW IN THE PUBLIC INTEREST

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GACENTER@BELLSOUTH.NET

October 26, 2000

Karrie Jo Shell
U.S. Environmental Protection Agency
Region IV
61 Forsyth Street
Atlanta, Georgia 30303-8960

Re: NPDES Permit No. GA 003620 for Rayonier Jesup Mill

Dear Karrie Jo:

Thank you for taking the time to discuss the proposed NPDES permit for the Rayonier Jesup Mill. As promised, please find enclosed some background materials regarding the Mill. These materials include:

- Comments submitted by the United States Fish & Wildlife Service requesting that the permit be modified to include: 1) limits for DO, temperature, color and chlorine, 2) toxicity testing requirements, 3) monitoring locations directly downstream from the outfall, and 4) whole fish dioxin analysis;

- Inspection reports conducted by the Environmental Protection Division which revealed, among other things, low levels of DO in the effluent and problems with odor and foam;

- A letter from the Wildlife Resources Division discussing a clam die off which occurred in 1995 below the mill;

- Reports regarding a sulfuric acid spill; and

- DMRs which reveal violations of BOD limits.

Deborah Sheppard, the Executive Director of the Altamaha Riverkeeper, is also preparing a summary of problems that have been observed a result of the Rayonier discharge. She should be sending that information to your attention within the next two weeks.

I hope that this information is helpful. Please contact me at your convenience to discuss setting up a meeting regarding the proposed permit. In the meantime, let me know if you require any additional information. And again, thank you for your assistance on this important matter.

Sincerely,

Justine Thompson
Executive Director

Cc: Karen Salomon, U.S. Fish & Wildlife Service
Deborah Sheppard, Altamaha Riverkeeper

Duncan Powell To: Karrie-Jo Shell/R4/USEPA/US@EPA

10/23/2000 04:01 PM

cc:

Subject: Rayonier Jesup Mill

KJ:

Per your request I have reviewed the seven page document from the GA Center for Law in the Public Interest regarding the GA NPDES permit for Rayonier Jesup Mill.

The only reference I could find to E/T species is a remotely vague reference to the Atlantic Sturgeon:

"Spieces in the Altamaha River are also particularly sensitive to changes in temperature. For instance, sturgeon migrate uptream to spawn and may be sensitive to increased temperature. Sturgeon require temperatures less than 29 Degrees Celsius or 85 Degrees Fahrenheit. ..... (p 5, 3rd paragraph)

This quote came out of point IV. The Effluent Limitations Fail to include Limits and/or Monitoring Requiremetns for Temperature. I agree with the author, there is a reasonable potential for temperature pollution and the permit should reflect the appropriate state standard for temperature. There is no actual ESA question being raised, just an example of a fishes temperture range and the reference only used sturgeon, and no specific one at that.

Please call me if you need any further assistance.

Duncan M. Powell
ESA Coordinator
404/562-9258
powell.duncan@epa.gov

GEORGIA CENTER FOR LAW IN THE PUBLIC INTEREST

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October 19, 2000

VIA FACSIMILE (404) 362-2691
AND U.S. MAIL

Mike Creason
Permitting, Compliance and Enforcement Program
Environmental Protection Division
4220 International Parkway
Suite 101
Atlanta, GA 30354

Re: NPDES Permit No. GA 003620 for Rayonier Jesup Mill

Dear Mike:

Please accept these comments on Draft National Pollutant Discharge Elimination System (NPDES) Permit No. GA 003620 ("Draft Permit") for Rayonier Jesup Mill in the Altamaha Riverbasin. These comments are submitted on behalf of the Altamaha Riverkeeper ("ARK"). ARK is a non-profit environmental organization that was founded to protect and restore the habitat, water quality, and flow of the Altamaha River from its headwaters in the Piedmont to its terminus at the Atlantic Ocean near Darien. ARK's members live, work, and recreate in the Oconee, Ocmulgee, and Ohoopee riverbasins and their feeder streams that make up the Altamaha River watershed. We appreciate the opportunity to submit these comments.

I. The Ecological Assessment of the Impacted Area is Insufficient to Adequately Determine Necessary Permit Conditions to Protect Water Quality

We have reviewed the Draft Permit and are concerned that this permit will not adequately protect the chemical, physical and biological integrity of the receiving waters as required by both federal and state laws. See e.g. O.C.G.A. § 12-5-20, et seq.; 33 U.S.C. § 1251, et seq. Admittedly, an ecological assessment was conducted for an 11-mile segment of the Altamaha River presumably to support the permit conditions contained in the Draft Permit. See Water Quality Survey and Stream Bioassessment for Rayonier's Jesup, Georgia Mill (the "Rayonier Study"). This Study, however, fails to provide sufficient information on which permitting decisions adequate to protect water

quality can be made. Specifically, please accept the following comments on the Study:

- The water quality survey and stream bioassessment are based on macroinvertebrate, periphyton, and water quality sampling conducted on two days: October 29, 1998 and August 4, 1999. Both of these sampling events were conducted under low flow conditions on the river. Sampling on each day was conducted at six stations, two upstream and four downstream of the Rayonier outfall locations; no sampling was conducted in the river segment between the two outfalls. A very limited number of samples (benthic invertebrates, periphyton on submerged logs, water samples) were collected at each station. There is also some indication that some of the sampling locations were on the opposite side of the river from Rayonier's discharge. This very limited amount of sampling and the subsequent use of rapid bioassessment procedures (discussed below) provides little more than a brief snapshot of conditions in the river on two days and little basis for determining the health of the aquatic ecosystem.

- The reasoning and procedures for selecting sampling station locations are not made clear in the report. There is no reason given for excluding the river segment between the two outfalls, nor for the choice of the upstream reference site (just downstream of the mouth of Goose Creek).

- The study makes use of three kinds of metrics for assessing water quality and biological health of the river: state water quality standards as benchmarks for water quality measurements, a modified version of the draft Georgia Bioassessment Protocol for invertebrates and riparian habitat, and a draft version of EPA's rapid bioassessment protocol for periphyton. The use of unofficial draft versions of the Georgia and EPA assessment tools and subsequent modifications to at least one of these procedures by the investigators puts the conclusions on shaky grounds from the start. It is not clear whether these documents (and especially modifications to them) have been peer reviewed, nor whether they have been thoroughly tested for use in a large alluvial coastal plain river like the Altamaha. For example, the invertebrate and periphyton metrics appear to be strongly influenced by samples with low numbers of taxa present, yet low invertebrate species richness (especially for benthic organisms) is characteristic of large alluvial rivers. The study did not include any fish sampling or fish-based assessment methods such as the widely used Indicator of Biotic Integrity (IBI).

- None of the bioassessment metrics employed in the study seemed particularly sensitive to observed trends in the sampling data. The 1998 sample data showed consistent trends of decreasing quality from upstream to downstream stations in most of the invertebrate and periphyton metrics, yet this information is reduced in the end to qualitative scores of "good" or "very good" for each station. The high overall scores received is an indication that there were no <u>severe</u> water quality problems at the time of the sampling, but nevertheless, the raw data indicate that the discharge may be having some effect on the aquatic community and this

information is lost in the use of the metrics. Some metrics in the invertebrate and periphyton methods were not scored because no scoring system had yet been proposed in the draft versions of these protocols used by the investigators. No significant trends were observed in the 1999 raw data, and qualitative scores were again rated as "good" or "very good;" in several cases, downstream stations scored higher than the upstream "reference" station. The riparian habitat metrics employed in the assessment appear irrelevant to the study objectives as they would not likely be affected by Rayonier's discharge.

- In addition, as discussed below, several important parameters critical to water quality were omitted from the study altogether (e.g. sulfates).

II. The Permit Fails to Include Adequate Limitations for Dioxin

Dioxin is one of the most toxic substances known to humans. Nevertheless, despite the clear threats posed by this dangerous chemical, the permit fails to protect public health and the environment. Accordingly, the permit should be modified as follows:

- Unless the facility runs for 24-hours per day, the dioxin standard should not be based on a 24-hour composite.

- Dioxin testing should be required at a World Health Organization health lab because of the ubiquitness nature and low level of concerns of dioxin. Any lab other than a WHO certified lab will not be able to produce scientifically-defensible results. As testing is only required once per quarter, this requirement will place no appreciable burden on the permittee.

- The effluent standard for dioxin should be based on a TQ which requires testing for all seventeen congeners and conversion based on the United States Environmental Protection Agency's most recent TEF's in the most recent dioxin reassessment.

- Dioxin has recently been declared a known human carcinogen. Many of the cancers caused by dioxin have long latency periods. As such, the permittee should be required to maintain all records pertaining to dioxin for a minimum of 50 years.

- Section III.C. states that the permittee may not discharge toxic pollutants in concentrations that are harmful to humans. However, according to recent EPA dioxin reassessment, all levels of discharge of dioxin are harmful to humans.

III. The Permit Fails to Include Effluent Limitations for Color and Turbidity

Ironically, although the Rayonier Study fails to provide sufficient information to adequately assess water quality in the impacted area with respect to many pollutants, where the Study does indicate a water quality problem, the permit conditions fail to address such problems. Of greatest significance, the Study clearly indicates that the Rayonier discharge has impacted the receiving water with respect to color. The Study indicates that both turbidity and color were moderately high and showed distinct upstream to downstream trends; similarly Secchi disk values (a measure of light penetration) decreased from upstream to downstream, presumably as a result of the Rayonier discharge. In addition, Rayonier's own monitoring reports indicate a very high level of color discharge – a level considered high even for the paper and pulp mill industry. Moreover, residents in the area have indicated that the color discharge can be seen several miles downstream from the Plant's discharge.

Georgia's Rules and Regulations for Water Quality Control ("Georgia Rule") specifically provide that "[a]ll waters shall be free from material related to . . . industrial . . . discharges which produce turbidity, color, odor or other objectionable conditions which interfere with legitimate water uses." Georgia Rule, 391-3-6/03(5)(c). Moreover, the turbidity standard provides that "[a]ll waters shall be free from turbidity which results in a substantial visual contrast in a water body due to a man-made activity." Id. at (5)(d).

The evidence clearly indicates that color is visible several miles downstream from the Rayonier discharge. Rayonier's own data demonstrates that color is impacting the receiving waters. While Georgia's Rules do not provide a specific standard for color, it is clear that permit conditions must address color under these circumstances. As a matter of law, "[t]he failure of an agency to comply with its own regulations constitutes arbitrary and capricious conduct.." Simmons v. Block, 782 F.2d 1545, 1550 (11th Cir. 1986). Where an agency fails to act in accordance with its own regulations, such actions are 'not in accordance with the law.' Raymond Proffit Foundation v. U.S.E.P.A., 930 F. Supp. 1088, 1104 (E.D. Pa. 1996). As the Supreme Court has explained, agency action is arbitrary and capricious where the agency fails to "articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made,'" Motor Vehicle Manuf. Ass'n v. State Farm Mutual Automobile Ins., 463 U.S. 29, 43 (1983), or where

> the agency has . . . entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.

Id.; See also, Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402 (1971); Sierra Pacific Industries v. Lyng, 866 F.2d 1099 (9th Cir. 1989). The permit must be modified to include reasonable standards for color.

IV. The Effluent Limitations Fail to Include Limits and/or Monitoring Requirements for Temperature

Water temperature is one of the most significant environmental factors mediating aquatic productivity. As discussed by Delbert B. Hicks, an expert on the impacts of thermal discharges on aquatic life:

> [temperature] affects virtually all metabolic processes of plant and animals, stimulates and control reproductive strategies, affects the solubility and diffusion of gases like dissolved oxygen, affects distribution patterns of plants and animals, and in excess causes lethal effects in aquatic animals and plants. Water temperatures in the aquatic environment can naturally vary due to effects of solar radiation and air temperature. Water temperature changes due to thermal discharges, however, are more sustained and dramatic in effect.

Delbert B. Hicks, *Assessment of the Biological Effects of Waste Heat Discharged from Plant Branch*, 3, December 1997. In fact, high thermal loading can result in objectionable pollution conditions such as fish kills and algae growth. For instance, temperature levels as low as 93° can be lethal for a number of species of fish. Id. In fact, other waterbodies in Georgia have already been severely impacted by thermal discharges; for instance, Lake Sinclair has experienced massive fish kills and the infestation of a nuisance algae, *Lyngbya wollei*. See Professor Lawrence A. Dyck; *Lyngbya* Infestations in the Beaverdam Creek Region and Lake Sinclair, Ga., and the Relationship Between *Lyngbya* Infestations and Discharges of Heated Wastewater from Plant Branch; "Fish-Kill – Investigation Report," Fisheries Management Section, Georgia Department of Natural Resources, August 3, 1993.

Species in the Altamaha River are also particularly sensitive to changes in temperature. For instance, sturgeon migrate upstream to spawn and may be sensitive to increased temperature. Sturgeon require temperatures less than 29 Degrees Celsius ("C") or 85 Degrees Fahrenheit ("F"). However, according to information submitted by the permittee, the long-term average for summer temperatures was about 30° C (87 ° F) with maximum running as high as 35° (95° F).. Despite the impact that even small changes in temperature can have on the integrity of the receiving waters, the Draft Permit does not adequately provide for monitoring of this parameter. We recommend that temperature be monitored upstream and downstream of the effluent to be submitted in monthly Discharge Monitoring Reports. The water quality standards with respect to temperature should also be specifically incorporated into the permit.[1]

V. The Effluent Limitations Fail to Include Limits and/or Monitoring Requirements for Dissolved Oxygen

According to monitoring conducted by the permittee, dissolved oxygen ("DO") levels were above state standards, but were depressed at the stations nearest the outfalls; a DO concentration of 5.05 mg/L (barely above the state limit of 5 mg/L) was measured just downstream of the outfall during the August 1999 sampling. This result raises the concern that dissolved oxygen could be reduced even further during extreme low flows, resulting in increased stress to aquatic organisms. Nevertheless, the permit does not even

include monitoring requirements or standards for DO. Such requirements should be placed in the permit.

VI. The Effluent Limitations Fail to Include Limits and/or Monitoring Requirements for Sulfates

Application materials submitted by Rayonier indicate that the plant is discharging high levels of sulfates. For instance, for Outfall 1, the sulfate concentration is 700 mg/l. Given that sulfates are discharged at fairly high concentrations from Rayonier's waste ponds, the Study failed to address the impact of this pollutant on the River. Moreover, the permit fails to contain any conditions with respect to this pollutant. The permit should be modified to address the impact that sulfates may have on the receiving waters.

VII. Conclusion

As discussed above, we recommend that the permit be revised to include reasonable monitoring requirements and effluent limitations for: 1) dioxin, 2) color, 3) temperature, 4) dissolved oxygen, and 5) sulfates. Moreover, further study of the impacts of the Rayonier Plant discharge on the Altamaha River should be conducted taking into account the deficiencies in the prior Study discussed above.

Please describe, consider and respond to each comment in accordance with 40 C.F.R. § 124.17 (a). See also Georgia Rule 391-3-6-.06(7)(b)(1)(iv); In re The Conservation Society, Inc. and Terrence D. Hughey, DNR-EPD-WQ-AH 5-92, 9-10 (Ga. Bd. of Nat. Resources, Sept. 24, 1993) (emphasis added) (requiring that EPD "prepare and present a public response to *all* submitted comments at or before the time one issues a permit." Id. at 9-10 (emphasis added). Failure to respond to comments in accordance with Section 124.17 is both a violation of federal law and Georgia state law. Id.

Thank you for your time and consideration. Should you have any additional questions or concerns, please feel free to contact me at (404) 659-3122.

Sincerely,

Justine Thompson
Executive Director

Georgia's water quality standards provide for a maximum of 90° and/or rise of 5° above ambient temperature. Georgia Rule, 391-3-6-.03 (6)(v). Failure to comply with water quality standards with respect to temperature or temperature conditions below 90° can also lead to a violation of the prohibition

against discharges that, among other things, create objectionable conditions or interfere with legitimate water uses. Id. at (5).

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE

247 South Milledge Avenue
Athens, Georgia 30605

West Georgia Sub Office
P.O. Box 52560
Ft. Benning, Georgia 31995-2560

Coastal Sub Office
4270 Norwich Street
Brunswick, Georgia 31520

October 19, 2000

Harold Reheis
Director, Environmental Protection Division
Georgia Department of Natural Resources
Floyd Towers, East
205 Butler Street
Atlanta, Georgia 30334

Dear Mr. Reheis:

The U.S. Fish and Wildlife Service (Service) has received information regarding the proposed wastewater discharge permit for the Rayonier Jesup Mill located in Jesup, Wayne County, Georgia, NPDES Permit No. GA003620. In general, the permit, as proposed, will not sufficiently protect water quality. For example, there are several parameters that should be included in the permit, including BOD limits, color limits, flow, chlorine, and temperature limits. Other concerns regarding the proposed permit are specified below.

Effluent Toxicity - there is no indication that effluent toxicity tests are required as part of the permit conditions. This may be an oversight, however, considering the lack of information regarding the constituent elements in pulp effluent, toxicity tests are important in determining the potential for deleterious effects of the total effluent on aquatic biota both downstream and in the vicinity of the outflow. Therefore, the Service strongly recommends effluent toxicity tests be included in the permit.

Testing location - it is unclear from the proposed permit where the first sampling points are for temperature, dissolved oxygen, and pH. They are listed as "the U.S. Highway bridge, the Rayonier marker just upstream from the confluence of Penholloway Creek and the Altamaha River, and the monitoring station at Everett City." One station is close to 30 miles down river, and one may be more than twelve miles down stream. It is not evident that any samples will be collected within a reasonable distance from the outfall. Therefore, the river miles downstream from the outfall for each station should be included, and at least one station should be within 300 feet of the outfall.

Only fish fillets will be tested for dioxins. This will help determine the potential for risk to public health from consumption of contaminated fish, but will not adequately protect wildlife, including threatened or endangered species. Whole fish should be analyzed in addition to fillets,

to ensure that Federally-listed threatened or endangered species, in addition to other wildlife such as migratory birds, are not potentially exposed to harmful levels of dioxins.

In summary, the Service recommends that the proposed permit include the following:

- effluent limits for BOD, DO, temperature, color, and chlorine
- regular toxicity testing
- monitoring locations immediately downstream form the outfall
- whole fish dioxin analysis

Thank you for the opportunity to review and comment on the proposed permit. If you have any questions regarding the above comments, please contact Karen Salomon, at (912) 265-9336 x 31.

Sincerely,

Gregg Masson for

Sandra S. Tucker
Field Supervisor

cc: Jeffrey H. Larson, EPD
Altamaha Riverkeepper
GCLPI, Justine Thompson
FWS, Brunswick

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

October 4, 2000

REF: 4WM-SWPFB

Mr. Mike Creason, P.E.
Unit Coordinator
Industrial Wastewater Unit
Georgia Department of Natural Resources
4244 International Parkway, Suite 101
Atlanta, Georgia 30354

SUBJECT: NPDES Overview

Dear Mr. Creason:

In accordance with the EPA/GA MOA and PPA we have completed review of the following draft permit(s) and have no objections to the proposed permit.

NPDES Number	Facility Name
GA0025399	Crisp County Power Commission
GA0003620	Rayonier Jesup Mill
GA0037591	Georgia Pacific - Thalman Facility

We request we be afforded an additional review opportunity y if significant changes are made to the permit(s) issuance, or if significant objections to the permit(s) are received. Otherwise, please send us one copy of the final permit(s) when issued.

If you have any questions, please contact me at (404) 562-9342.

Sincerely,

Cheryl Espy

Cheryl Espy
Environmental Engineer
Surface Water Permits Facilities Branch
Water Management Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

DEC 14 1995

REF: 4WM-WPEB

Mr. Alan Hallum, Chief
Water Protection Division
Georgia Department of Natural Resources
Floyd Towers East - Room 1058
205 Butler Street, S.E.
Atlanta, Georgia 30334

SUBJ: NPDES Overview

Dear Mr. Hallum:

In accordance with the EPA/EPD MOA, we have completed review of the following final permit(s) and have no objections to the proposed permit conditions.

NPDES Number	Facility Name
GA0036811	A&M Products, Inc.
GA0003620	Rayonier
GA0036773	Davidson Mineral Properties, Inc.
GA0036790	Southern Aggregates Company
GA0036781	Southern Aggregates Company

If you have any questions, please call Ms. Dee L.J. Stewart at 347-3012 ext. 2928.

Sincerely,

Roger O. Pfaff, P.E., Acting Chief
Water Permits and Enforcement Branch
Water Management Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

OCT 06 1995

REF: 4WM-WPEB

Mr. Alan Hallum, Chief
Water Protection Division
Georgia Department of Natural Resources
Floyd Towers East - Room 1058
205 Butler Street, S.E.
Atlanta, Georgia 30334

SUBJ: NPDES Overview

Dear Mr. Hallum:

In accordance with the EPA/EPD MOA, we have completed review of the following draft permit(s) and have no objections to the permit conditions.

NPDES Number	Facility Name
GA0003620	Rayonier
GA0046132	Davidson Mineral Properties, INC.
GA0025399	Crisp County Power Commission
GA0036811	A&M Products, INC.

We request that we be afforded an additional review opportunity only if significant changes are made to the permit(s) prior to issuance, or if significant objections to the permit(s) are received. Otherwise, please send us one copy of the final permit(s) when issued.

If you have any questions, please call Ms. Dee L.J. Stewart at 347-3012 ext. 2928.

Sincerely,

Roger O. Pfaff, P.E., Acting Chief
Water Permits and Enforcement Branch
Water Management Division

Georgia Department of Natural Resources

205 Butler Street, S.E., East Floyd Tower, Atlanta, Georgia 30334

Reply To:
Industrial Wastewater Program
Suite 1070
404/656-4887

Lonice C. Barrett, Commissioner
Harold F. Reheis, Director
David Word, Assistant Director
Environmental Protection Division
404/656-4713

September 26, 1995

Major

Mr. Gerald A. DeWitt
Manager, Environmental Control
Rayonier
P. O. Box 2070
Jesup, GA 31545-2070

Re: NPDES Permit No. GA0003620

Dear Mr. DeWitt:

The Environmental Protection Division (EPD) has received your application for a permit to discharge treated wastewater to the waters of the State of Georgia. We are processing your application and intend to issue in the near future a National Pollutant Discharge Elimination System (NPDES) Permit in accordance with the Georgia Water Quality Control Act and the Federal Clean Water Act. However, before issuing the permit, we require that you circulate a Public Notice by posting the notice at the entrance of the County Courthouse. Within ten days of receipt of this letter, the Public Notice should be posted and remain for a period of thirty days. At the end of the 30 day public notice period, the EPD will make a determination on issuance of the NPDES Permit. Please provide written confirmation as soon as possible to indicate that you have satisfied the requirements of this letter. Please be aware that failure to satisfy the public notice requirements may result in the need to revoke your permit.

Attached is a copy of the Public Notice and the draft NPDES Permit which contains the proposed conditions of your permit. If you have any comments or questions concerning the Permit or the Public Notice, please contact Mr. Larry Kloet of my staff at 404-656-4887.

Sincerely,

Lawrence W. Hedges

Lawrence W. Hedges
Program Manager
Industrial Wastewater Program

LWH:lkk
Attachment

cc: Mr. Roosevelt Childress (w/attachments)
U. S. EPA, Region IV

October 6, 1995

PUBLIC NOTICE
GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

NOTICE OF APPLICATION FOR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT TO DISCHARGE TREATED WASTEWATER INTO WATERS OF THE STATE OF GEORGIA.

The Georgia Environmental Protection Division has received a new NPDES permit application for the reissuance of an existing NPDES permit. Having reviewed such application, the Environmental Protection Division proposes to issue for a maximum term of five years the following permit subject to specific pollutant limitations and special conditions.

> Rayonier, Post Office Box 2070, Jesup, Georgia 31545, NPDES Permit No. GA0003620, for its facility located on U. S. Highway 301 North in Jesup. Approximately 69 MGD of treated pulp mill process wastewater is discharged to the Altamaha River in the Altamaha River Basin.

Persons wishing to comment upon or object to the proposed determinations are invited to submit same in writing to the EPD address below, no later than thirty (30) days after this notification. All comments received prior to or on that date will be considered in the formulation of final determinations regarding the application. A public hearing may be held where the EPD Director finds a significant degree of public interest in a proposed permit or group of permits. Additional information regarding public hearing procedures is available by writing the Environmental Protection Division.

A fact sheet or copy of the draft permit is available by writing the Environmental Protection Division. A copying charge of 25¢ per page will be assessed. The permit application, draft permit, comments received, and other information are available for review at 205 Butler Street, S.E., Floyd Towers East, Room 1070, Atlanta, Georgia, between the hours of 9:00 a.m. and 4:00 p.m., Monday through Friday.

Georgia Department of Natural Resources
205 Butler Street, S.E., East Floyd Tower, Atlanta, Georgia 30334
Joe D. Tanner, Commissioner
Harold F. Reheis, Director
Environmental Protection Division

July 16, 1991

Mr. Robert McCrary
Manager, Environmental Control
ITT Rayonier, Inc.
P. O. Box 207
Jesup, Georgia 31545

RE: NPDES Permit No. GA0003620

Dear Mr. McCrary:

On January 23, 1991, the Georgia Board of Natural Resources adopted amendments to Georgia's water quality regulations. Amendments include a revision to the water quality standard for 2,3,7,8-TCDD (Dioxin) from 7.2 parts per quadrillion to 1.2 parts per quadrillion. This change was recently approved by the U. S. Environmental Protection Agency.

We are proposing to modify your NPDES permit to comply with the new water quality standard. The proposed modification is given in the attached page 2a, which is to be substituted for the current page 2a of your NPDES Permit. Appropriate revisions have also been made in the Fact Sheet and Permit Rationale. These are also attached. The Environmental Protection Division will issue a public notice of this proposed permit modification in the near future.

If you have any comments or questions, please contact Mr. Larry Kloet of our Industrial Wastewater Program at 404/656-4887.

Sincerely,

Lawrence W. Hedges

Lawrence W. Hedges
Program Manager
Industrial Wastewater Program

LWH:lkb
Attachment

cc: Mr. James R. Patrick
Environmental Protection Agency

PERMIT NO. GA0003620

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Georgia Water Quality Control Act (Georgia Laws 1964, p. 416, as amended), hereinafter called the "State Act," the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.), hereinafter called the "Federal Act," and the Rules and Regulations promulgated pursuant to each of these Acts,

RAYONIER
P. O. Box 2070
Jesup, Georgia 31545-2070

is authorized to discharge from a facility located at

U. S. Highway 301 North
Jesup, Wayne County, Georgia

to receiving waters Altamaha River

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, and III hereof.

This permit shall become effective on

This permit and the authorization to discharge shall expire at midnight, October 31, 2000.

Signed this _____ **day of** _____.

DRAFT

_____
Director,
Environmental Protection Division

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning effective date and lasting through October 31, 2000, the permittee is authorized to discharge from outfall(s) serial number(s) 001 and 002 - Process wastewater, sanitary wastes, and stormwater runoff.

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic (Specify Units)	Discharge Limitations				Monitoring Requirements		
	Mass Based lbs/day		Concentration Based				
	Daily Avg.	Daily Max.	Daily Avg.	Daily Max.	Measurement Frequency	Sample Type	Sample Location
Flow (MGD)	-	-	-	-	Continuous	Recorder	Influent or Effluent
BOD_5							
May 1 - November 30	22,300	33,450	-	-	Daily	Composite	Effluent
December 1 - April 30	32,000	48,000	-	-	"	"	"
TSS	42,010	77,600	-	-	Daily	Composite	Effluent
BOD_{120}	-	-	-	-	Annual	Composite	Effluent
Color	-	-	-	-	Weekly	Composite	Effluent
Dioxin (2,3,7,8-TCDD)*	-	-	0.000153 µg/l	-	Quarterly	24-Hour Composite	Effluent
Beryllium**	-	-	-	-	Monthly	Composite	Effluent

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored daily by a grab sample at the final effluent.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

The effluent sample location shall be defined as the discharge stream after treatment, but prior to mixing with any other waters.

The pollutant limitations above represent the sum of the pollutants from Outfall 001, added to the pollutants for Outfall 002.

Monitoring results for pollutants requiring annual analysis shall be submitted with the June Operation Monitoring Report. Monitoring results for pollutants requiring quarterly analysis shall be submitted with the March, June, September, and December Operation Monitoring Reports.

* The permittee shall adhere to the analytical protocol described in Appendix C of the U. S. EPA/Paper Industry Cooperative Dioxin Screening Study (EPA 440/1-88-025, March 1988) when analyzing wastewater effluent samples for 2,3,7,8-TCDD.

** See Part III.B.5. for details regarding limited monitoring for this parameter.

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B. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

N/A

2. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

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Note: EPD as used herein means the Environmental Protection Division of the Department of Natural Resources.

C. MONITORING AND REPORTING

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Reporting

Monitoring results obtained during the previous one month shall be summarized for each month and reported on an Operation Monitoring Report (Form WQ 1.45). Forms other than Form WQ 1.45 may be used upon approval by EPD. These forms and any other required reports and information shall be completed, signed and certified by a principal executive officer or ranking elected official, or by a duly authorized representative of that person, and submitted to the Division, postmarked no later than the 15th day of the month following the reporting period. Signed copies of these and all other reports required herein shall be submitted to the following address:

Georgia Environmental Protection Division
Industrial Wastewater Program
205 Butler Street, S. E.
Suite 1070, Floyd Towers East
Atlanta, Georgia 30334

All instances of noncompliance not reported under Part I. B. and C. and Part II. A. shall be reported at the time the operation monitoring report is submitted.

3. Definitions

a. The "daily average" discharge means the total discharge by weight during a calendar month divided by the number of days in the month that the production or commercial facility was operating. Where less than daily sampling is required by this permit, the daily average discharge shall be determined by the summation of all the measured daily discharges by weight divided by the number of days sampled during the calendar month when the measurements were made.

b. The "daily maximum" discharge means the total discharge by weight during any calendar day.

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c. The "daily average" concentration means the arithmetic average of all the daily determinations of concentrations made during a calendar month. Daily determinations of concentration made using a composite sample shall be the concentration of the composite sample.

d. The "daily maximum" concentration means the daily determination of concentration for any calendar day.

e. For the purpose of this permit, a calendar day is defined as any consecutive 24-hour period.

f. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

g. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

4. Test Procedures

Monitoring must be conducted according to test procedures approved pursuant to 40 CFR Part 136 unless other test procedures have been specified in this permit.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The exact place, date, and time of sampling or measurements, and the person(s) performing the sampling or the measurements;

b. The dates the analyses were performed, and the person(s) who performed the analyses;

c. The analytical techniques or methods used; and

d. The results of all required analyses.

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6. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Operation Monitoring Report Form (WQ 1.45). Such increased monitoring frequency shall also be indicated. The Division may require by written notification more frequent monitoring of other pollutants not required in this permit.

7. Records Retention

The permittee shall retain records of all monitoring information, including all records of analyses performed, calibration and maintenance of instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Division at any time.

8. Penalties

The Federal Clean Water Act and the Georgia Water Quality Control Act provide that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit, makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine or by imprisonment, or by both. The Federal Clean Water Act and the Georgia Water Quality Control Act also provide procedures for imposing civil penalties which may be levied for violations of the Act, any permit condition or limitation established pursuant to the Act, or negligently or intentionally failing or refusing to comply with any final or emergency order of the Director of the Division.

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A. MANAGEMENT REQUIREMENTS

1. Change in Discharge

a. Advance notice to the Division shall be given of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. Any anticipated facility expansions, production increases, or process modifications must be reported by submission of a new NPDES permit application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the Division of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

b. All existing manufacturing, commercial, mining, and silviculture dischargers shall notify the Division as soon as it is known or there is reason to believe that any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant not limited in the permit, if that discharge will exceed (i) 100 µg/l, (ii) five times the maximum concentration reported for that pollutant in the permit application, or (iii) 200 µg/l for acrolein and acrylonitrile, 500 µg/l for 2,4 dinitrophenol and for 2-methyl-4-6-dinitrophenol, or 1 mg/l antimony.

c. All existing manufacturing, commercial, mining, and silvicultural dischargers shall notify the Division as soon as it is known or there is reason to believe that any activity has occurred or will occur which would result in any discharge on a nonroutine or infrequent basis, of any toxic pollutant not limited in the permit, if that discharge will exceed (i) 500 µg/l, (ii) ten times the maximum concentration reported for that pollutant in the permit application, or (iii) 1 mg/l antimony.

2. Noncompliance Notification

If, for any reason, the permittee does not comply with, or will be unable to comply with any effluent limitation specified in this permit, the permittee shall provide the Division with an oral report within 24 hours from the time the permittee becomes aware of the circumstances followed by a written report within five (5) days of becoming aware of such condition. The written submission shall contain the following information:

a. A description of the discharge and cause of noncompliance; and

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b. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

3. Facilities Operation

The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

4. Adverse Impact

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

5. Bypassing

a. If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Division at least 10 days (if possible) before the date of the bypass. The permittee shall submit notice of any unanticipated bypass with an oral report within 24 hours from the time the permittee becomes aware of the circumstances followed by a written report within five (5) days of becoming aware of such condition. The written submission shall contain the following information:

1. A description of the discharge and cause of noncompliance; and

2. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

DRAFT

b. Any diversion or bypass of facilities covered by this permit is prohibited, except (i) where unavoidable to prevent loss of life, personal injury, or severe property damage; (ii) there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime (this condition is not satisfied if the permittee could have installed adequate back-up equipment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance); and (iii) the permittee submitted a notice as required above. The permittee shall operate the treatment works, including the treatment plant and total sewer system, to minimize discharge of the pollutants listed in Part I of this permit from combined sewer overflows or bypasses. Upon written notification by the Division, the permittee may be required to submit a plan and schedule for reducing bypasses, overflows, and infiltration in the system.

6. Sludge Disposal Requirements

Hazardous sludge shall be disposed of in accordance with the regulations and guidelines established by the Division pursuant to the Federal Clean Water Act (CWA) and the Resource Conservation and Recovery Act (RCRA). For land application of nonhazardous sludge, the permittee shall comply with any applicable criteria outlined in the Division's "Guidelines for Land Application of Municipal Sludges." Prior to disposal of sludge by land application, the permittee shall submit a proposal to the Division for approval in accordance with applicable criteria in the Division's "Guidelines for Land Application of Municipal Sludges." Upon evaluation of the permittee's proposal, the Division may require that more stringent control of this activity is required. Upon written notification, the permittee shall submit to the Division for approval, a detailed plan of operation for land application of sludge. Upon approval, the plan will become a part of the NPDES permit. Disposal of nonhazardous sludge by other means, such as landfilling, must be approved by the Division.

7. Sludge Monitoring Requirements

The permittee shall develop and implement procedures to insure adequate year-round sludge disposal. The permittee shall monitor the volume and concentration of solids removed from the plant. Records shall be maintained which document the quantity of solids removed from the plant. The ultimate disposal of solids shall be reported monthly (in the unit of lbs/day) to the Division with the Operation Monitoring Report Forms required under Part I (C)(2) of this permit.

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8. Power Failures

Upon the reduction, loss, or failure of the primary source of power to said water pollution control facilities, the permittee shall use an alternative source of power if available to reduce or otherwise control production and/or all discharges in order to maintain compliance with the effluent limitations and prohibitions of this permit.

If such alternative power source is not in existence, and no date for its implementation appears in Part I, the permittee shall halt, reduce or otherwise control production and/or all discharges from wastewater control facilities upon the reduction, loss, or failure of the primary source of power to said wastewater control facilities.

B. RESPONSIBILITIES

1. Right of Entry

The permittee shall allow the Director of the Division, the Regional Administrator of EPA, and/or their authorized representatives, agents, or employees, upon the presentation of credentials:

a. To enter upon the permittee's premises where a regulated activity or facility is located or conducted or where any records are required to be kept under the terms and conditions of this permit; and

b. At reasonable times, to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and to sample any substance or parameters in any location.

2. Transfer of Ownership or Control

A permit may be transferred to another person by a permittee if:

a. The permittee notifies the Director in writing of the proposed transfer at least thirty (30) days in advance of the proposed transfer;

b. A written agreement containing a specific date for transfer of permit responsibility and coverage between the current and new permittee (including acknowledgement that the existing permittee is liable for violations up to that date, and that the new permittee is liable for violations from that date on) is submitted to the Director at least thirty (30) days in advance of the proposed transfer; and

DRAFT

c. The Director, within thirty (30) days, does not notify the current permittee and the new permittee of the Division's intent to modify, revoke and reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit.

3. Availability of Reports

Except for data deemed to be confidential under O.C.G.A. § 12-5-26 or by the Regional Administrator of the EPA under the Code of Federal Regulations, Title 40, Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at an office of the Division. Effluent data, permit applications, permittee's names and addresses, and permits shall not be considered confidential.

4. Permit Modification

After written notice and opportunity for a hearing, this permit may be modified, suspended, revoked or reissued in whole or in part during its term for cause including, but not limited to, the following:

a. Violation of any conditions of this permit;

b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge; or

d. To comply with any applicable effluent limitation issued pursuant to the order the United States District Court for the District of Columbia issued on June 8, 1976, in Natural Resources Defense Council, Inc. et.al. v. Russell E. Train, 8 ERC 2120(D.D.C. 1976), if the effluent limitation so issued:

(1) is different in conditions or more stringent than any effluent limitation in the permit; or

(2) controls any pollutant not limited in the permit.

5. Toxic Pollutants

The permittee shall comply with effluent standards or prohibitions established pursuant to Section 307(a) of the Federal Clean Water Act for toxic pollutants, which are present in the discharge within the time provided in the regulations

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that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

6. Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

7. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Federal Clean Water Act.

8. Water Quality Standards

Nothing in this permit shall be construed to preclude the modification of any condition of this permit when it is determined that the effluent limitations specified herein fail to achieve the applicable State water quality standards.

9. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

10. Expiration of Permit

Permittee shall not discharge after the expiration date. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit such information, forms, and fees as are required by the agency authorized to issue permits no later than 180 days prior to the expiration date.

11. Contested Hearings

Any person who is aggrieved or adversely affected by an action of the Director of the Division shall petition the Director for a hearing within thirty (30) days of notice of such action.

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12. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

13. Best Management Practices

The permittee will implement best management practices to control the discharge of hazardous and/or toxic materials from ancillary manufacturing activities. Such activities include, but are not limited to, materials storage areas, in-plant transfer, process and material handling areas; loading and unloading operations; plant site runoff; and sludge and waste disposal areas.

14. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

15. Duty to Provide Information

a. The permittee shall furnish to the Director of the Division, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish upon request copies of records required to be kept by this permit.

b. When the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or any report to the Director, it shall promptly submit such facts and information.

16. Upset Provisions

Provisions of 40 CFR 122.41(n)(1)-(4), regarding "Upset" shall be applicable to any civil, criminal, or administrative proceeding brought to enforce this permit.

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A. PREVIOUS PERMITS

1. All previous State water quality permits issued to this facility, whether for construction or operation, are hereby revoked by the issuance of this permit. This action is taken to assure compliance with the Georgia Water Quality Control Act, as amended, and the Federal Clean Water Act, as amended. Receipt of the permit constitutes notice of such action. The conditions, requirements, terms and provisions of this permit authorizing discharge under the National Pollutant Discharge Elimination System govern discharges from this facility.

B. SPECIAL REQUIREMENTS

1. River samples shall be collected and analyzed twice a month during the months, May through November. Samples shall be taken from the U. S. 301 Highway bridge, the Rayonier marker just upstream from the confluence of Penholloway Creek and the Altamaha River, and the monitoring station at Everett City. Sampling shall be done near midstream or at a point which is judged to be representative of the river. Collection of samples shall be taken when flows are less than 10,000 cfs and when the river is at steady flow conditions. The time of collection at the various points shall coincide with time of travel for the river. Samples shall be analyzed for the following:

   a. BOD_5 and BOD_{40}

   b. Dissolved Oxygen

   c. pH

   d. Temperature

   Also, river stage and associated flow at Doctortown should be reported during periods scheduled for sampling whether or not sampling is actually conducted during that time.

2. The data from the river sampling program described above will be used by the Environmental Protection Division to refine and update the current stream model. If water quality violations are documented, limitations in Part I, Section A.1. will be adjusted accordingly.

3. The permittee shall monitor all seventeen congeners of dioxin (2,3,7,8-TCDD) and furan (2,3,7,8-TCDF) in ambient fish fillet tissue in the facility's receiving stream. The dioxin monitoring program shall be conducted in accordance with the Study Plan To Conduct Dioxin Monitoring In Fish Tissue From The Vicinity Of Five Georgia Bleached Kraft Mills, March 31, 1989. The first sampling/testing program shall be conducted in 1998 with the report submitted to the Director. The intent is to have this program repeated every three years.

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4. Substances or parameters to be sampled in Part II.B.1.b. shall apply only to those which are required to assure permit compliance or as otherwise authorized by the Clean Water Act.

5. The permittee shall monitor beryllium for at least twelve months on a monthly basis. If the results of at least ten out of twelve monthly samples indicate that this substance is less than EPD's minimum detection level of 10 µg/l, then the EPD may terminate or lessen the monitoring requirement. If the results indicate that the substance is equal to or greater than 10 µg/l in at least ten out of twelve monthly samples, the permit shall be modified to include a WET (Whole Effluent Toxicity) limit, chronic biomonitoring, and further monthly monitoring for this substance.

C. BIOMONITORING AND TOXICITY REDUCTION REQUIREMENTS

The permittee may not discharge toxic wastes in concentrations or combinations which are harmful to humans, fish or aquatic life. The permittee shall ensure that the effluent being discharged does not kill 10% or more of the exposed test organisms in 96 hours or less, when the test solution contains volumes of effluent and stream water proportional to the plant design flow and the 7Q10 flow of the receiving stream.

1. If toxicity is suspected in the permittee's effluent, the Division may require the permittee to develop a program for whole effluent biomonitoring. The schedule will be as follows:

   a. Within 90 days of Division notification, a study plan detailing the test methodology and test organisms shall be submitted for conducting forty-eight hour acute static renewal tests of the final effluent. If residual chlorine is present in the final effluent from treatment and/or disinfection processes, a prechlorinated or dechlorinated sample will also be tested.

   b. Within 90 days of Division approval of the study plan, the permittee will conduct and submit the results of the forty-eight hour static renewal tests.

2. If toxicity is found in the permittee's effluent, the permittee shall, within 90 days of written notification by the Division, submit a Toxicity Reduction Evaluation (TRE) plan to the Division. The TRE plan shall detail the action the permittee will implement to eliminate toxicity. Within 270 days of Division approval of the TRE plan, the permittee shall complete implementation of the TRE plan and conduct follow-up biomonitoring of the effluent in accordance with the approved TRE plan. If toxicity is still indicated, the permittee shall continue the TRE plan. The TRE plan shall not be complete until the permittee has eliminated the toxicity in its effluent. On a case specific basis, chronic toxicity testing procedures may be required for the definitive determination that toxicity has been eliminated.

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3. If toxicity is not indicated initially, or if there are substantial changes in the effluent composition, the permittee may be required to repeat the forty-eight hour static renewal test upon notification by the Division. On a case specific basis, chronic toxicity testing procedures may also be required.

Upon approval by the Division, all study plans and TRE plans will become part of the requirements of this permit.

DRAFT

Removed from 304(1)

GEORGIA

FISCAL YEAR 1990 NPDES PERMIT REVIEW

FACILITY: ITT Rayonier, Inc.

NPDES No: GA 0003620

APPLICATION _____ DRAFT (20 days) _____ FINAL (15 working days) X

_____ NEW (10 days)

_____ MAJOR INDUSTRIAL

_____ MAJOR MUNICIPAL

_____ MINOR PRIMARY

X MODIFICATION (circle one: Major Ind/Mun. or Minor Pri)

ROUTING:
1. DATE RECEIVED 2/13/90
2. UNIT CHIEF
3. ASSIGNED TO _____ DUE 3/5/90
4. UNIT CHIEF (If Problems)
5. PERMITS CLERK
6. FILES

COMMENTS:

Same as draft modification

Drafted: 2/20/90

ACTION TO BE TAKEN: No objections

Mailed: 2/21/90

K Martin

COMPLETED BY

2/21/90

DATE

Georgia Department of Natural Resources
205 Butler Street, S.E., Suite 1252, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
404/656-3500

February 2, 1990

Mr. Robert A. McCrary
Manager - Environmental Control
ITT Rayonier, Inc.
P. O. Box 2070
Jesup, Georgia 31545

Re: NPDES Permit No. GA 0003620

Dear Mr. McCrary:

Pursuant to the Georgia Water Quality Control Act, as amended, the Federal Clean Water Act, as amended, and the Rules and Regulations promulgated thereunder, we have today modified the referenced National Pollutant Discharge Elimination System (NPDES) permit for the specified wastewater treatment facility. Under the provisions of the 1987 amendments to the Clean Water Act, the Georgia Environmental Protection Division is required to issue this modification prior to February 4, 1990.

Based on your most recent NPDES application or other information available to the Division, we have determined that certain modifications to your NPDES permit are required to assure compliance with the water quality standards. The modifications are given in the attached pages 2a and 12a which are to be inserted as additions to your current permit. All other terms and conditions of the NPDES permit remain unchanged.

Sincerely,

J. Leonard Ledbetter
Commissioner

JLL:azk
Enclosure

cc: Mr. John T. Marlar (w/enclosure)
U. S. Environmental Protection Agency

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

1. During the period beginning effective date and lasting through December 1, 1992, the permittee is authorized to discharge from outfall(s) serial number(s) 001 and 002 - Process wastewater, sanitary wastes, and stormwater runoff.

   Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations				Monitoring Requirements		
	Mass Based		Concentration Based				
	Daily Avg.	Daily Max.	Daily Avg.	Daily Max.	Measurement Frequency	Sample Type	Sample Location
Dioxin (2,3,7,8-TCDD)[1]	-	-	-	.00103 µg/l	Quarterly	24-Hour Composite	Effluent
Bis(2 Ethyl-hexyl)Phthalate	-	-	-	-	Annual	24-Hour Composite	Effluent
Chloroform	-	-	-	-	Annual	24-Hour Composite	Effluent

1. The permittee shall adhere to the analytical protocol described in Appendix C of the U. S. EPA/Paper Industry Cooperative Dioxin Screening Study (EPA 440/1-88-025, March 1988) when analyzing wastewater effluent samples for 2,3,7,8-TCDD.

   The effluent sample location shall be defined as the discharge stream after treatment, but prior to mixing with any other waters.

6. The permittee shall monitor for dioxin (2,3,7,8-TCDD) and furan (2,3,7,8-TCDF) in ambient fish tissue in the facility's receiving stream. The dioxin monitoring program shall be conducted in accordance with the Study Plan To Conduct Dioxin Monitoring In Fish Tissue From The Vicinity Of Five Georgia Bleached Kraft Mills, March 31, 1989. The sampling/testing program shall be conducted on an annual basis, with annual reports submitted to the Director.

7. The Director recommends that the permittee develop and implement Best Management Practices (BMP's) for chlorine minimization in the pulp bleach plant and for total suspended solids minimization in the final effluent. Furthermore, the Director recommends that such BMP's include the necessary studies to determine if process modifications to the bleach plant and/or additional effluent controls are feasible for the permittee's facility. Should the permittee decide that such studies are warranted, these studies shall be conducted and a report of their findings submitted to the Director by December 31, 1990. To the maximum extent practicable, the permittee shall implement the findings of the chlorine minimization and total suspended solids minimization studies by no later than June 4, 1992.

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION
270 Washington Street, S. W.
Atlanta, Georgia 30334

FACT SHEET

APPLICATION FOR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT TO DISCHARGE TREATED WASTEWATER TO WATERS OF THE STATE OF GEORGIA

Application No. GA 0003620 Date January 4, 1990

1. SYNOPSIS OF APPLICATION

a. Name and Address of Applicant

ITT Rayonier, Inc.
P. O. Box 207
Jesup, Georgia 31545

b. Description of Applicant's Operation

Pulp and Paper Mill, produces market bleached kraft and dissolving kraft.

c. Production Capacity of Facility

1740 ADT/day, may be increased to 1940 ADT/day by 1990.

d. Applicant's Receiving Waters

Altamaha River

For a sketch showing the location of the discharge(s), see Attachment A.

e. Description of Existing Pollution Abatement Facilities

Screening
Primary Clarification
Nutrient Addition
Aeration Basin

f. Description of Discharges (as reported by applicant)

Serial 001 and 002 Combined

Average Flow	-	62 mgd
Average Winter Temperature	-	22°C
Average Summer Temperature	-	34°C
pH Range (std. units)	-	7.0 to 8.4

Pollutants which are present in significant quantities or which are subject to effluent limitation are as follows:

Effluent Characteristic	Reported Load
BOD_5	32 mg/l
Total Suspended Solids	57 mg/l

Stormwater Runoff Point Sources

Average Flow	-	Varies
Average Winter Temperature	-	N/A
Average Summer Temperature	-	N/A
pH Range (std. units)	-	7.1

Pollutants which are present in significant quantities or which are subject to effluent limitation are as follows:

Effluent Characteristic	Reported Load
BOD_5	5 mg/l
Total Suspended Solids	2 mg/l

2. PROPOSED EFFLUENT LIMITATIONS

Serial 001 and 002 - Combined

Permitted Maximum Temperature - N/A
Permitted pH Range (std. units) - 6.0 - 9.0

Effluent Characteristic	Discharge Limitation
BOD_5	
May 1 - November 30	22,300 lbs/day Avg.Daily 33,450 lbs/day Max.Daily
December 1 - April 30	32,000 lbs/day Avg.Daily 48,000 lbs/day Max.Daily

BOD_5 limitations may be increased to 35,000 lbs/day average daily and 52,500 lbs/day maximum daily during wintertime months (December 1 - April 30) if anticipated production in 1990 is reached.

Total Suspended Solids	42,010 lbs/day Avg.Daily 77,600 lbs/day Max.Daily

Serial - N/A

Permitted Maximum Temperature -
Permitted pH Range (std. units) -

Effluent Characteristic	Discharge Limitation

3. MONITORING REQUIREMENTS

The applicant will be required to monitor regularly for flow and those parameters limited in Section 2 above with sufficient frequency to ensure compliance with the permit conditions. Frequency, methods of sampling, and reporting dates will be specified in the final permit.

4. PROPOSED COMPLIANCE SCHEDULE FOR ATTAINING EFFLUENT LIMITATIONS

N/A

5. PROPOSED SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE DISCHARGE

See Part III, Special Requirements of NPDES permit, attached.

6. WATER QUALITY STANDARDS AND EFFLUENT STANDARDS APPLIED TO THE DISCHARGE

The Altamaha River is classified as fishing. The effluent limitations were derived to meet this classification.

7. PROCEDURES FOR THE FORMULATION OF FINAL DETERMINATIONS

a. Comment Period

The Georgia Environmental Protection Division (EPD) proposes to issue an NPDES permit to this applicant subject to the effluent limitations and special conditions outlined above. These determinations are tentative.

Interested persons are invited to submit written comments on the permit application or on EPD's proposed determinations to the following address:

Georgia Environmental Protection Division
205 Butler Street, S.E.
Floyd Towers East, Room 1070
Atlanta, Georgia 30334

All comments received prior to
will be considered in the formulation of final determinations with regard to this application.

b. Public Hearings

Any applicant, affected state or interstate agency, the Regional Administrator of the U. S. Environmental Protection Agency (EPA) or any other interested agency, person or group of persons may request a public hearing with respect to an NPDES permit application if such request is filed within thirty (30) days following the date of the public notice for such application. Such request must indicate the interest of the party filing the request, the reasons why a hearing is requested, and those specific portions of the application or other NPDES form or information to be considered at the public hearing. The Director shall hold a hearing if he determines that there is sufficient public interest in holding such a hearing. If a public hearing is held, notice of same shall be provided at least thirty (30) days in advance of the hearing date.

In the event that a public hearing is held, both oral and written comments will be accepted; however, for the accuracy of the record, written comments are encouraged. The Director or his designee reserves the right to fix reasonable limits on the time allowed for oral statements and such other procedural requirements as he deems appropriate.

Following a public hearing, the Director, unless he should decide to deny the permit, may make such modifications in the terms and conditions of the proposed permit as may be appropriate and shall issue the permit. Notice of issuance or denial will be circulated to those persons or groups who participated in the hearing; to those persons or groups who submitted written comments to the Director on the proposed permit within thirty (30) days from the date of the public notice of the application for permit; and to all persons or groups included on the EPD mailing list.

c. Contested Hearings

Any person who is aggrieved or adversely affected by the issuance or denial of a permit by the Director of EPD may petition the Director for a hearing if such petition is filed in the office of the Director within thirty (30) days from the date of notice of such permit issuance or denial. Such hearing shall be held in accordance with the EPD Rules, Water Quality Control, subparagraph 391-3-6-.01.

Petitions for a contested hearing must include the following:

1. The name and address of the petitioner;

2. The grounds under which petitioner alleges to be aggrieved or adversely affected by the issuance or denial of a permit;

3. The reason or reasons why petitioner takes issue with the action of the Director;

4. All other matters asserted by petitioner which are relevant to the action in question.

d. Issuance of the Permit When No Public Hearing is Held

If no public hearing is held, and, after review of the written comments received, the Director determines that a permit should be issued and that his determinations as set forth in the proposed permit are substantially unchanged, the permit will be issued and will become final in the absence of a request for a Contested Hearing. Notice of issuance or denial will be circulated to those persons who submitted written comments to the Director on the proposed permit within thirty (30) days from the date of the public notice of such proposed permit; and to all persons or groups included on the EPD mailing list.

If no public hearing is held, but the Director determines, after a review of the written comments received, that a permit should be issued but that substantial changes in the proposed permit are warranted, public notice of the revised determinations will be given and written comments accepted in the same manner as the initial notice of application was given and written comments accepted pursuant to EPD Rules, Water Quality Control, subparagraph 391-3-6-.06(7)(b). The Director shall provide an opportunity for public hearing on the revised determinations. Such opportunity for public hearing and the issuance or denial of a permit thereafter shall be in accordance with the procedures as set forth above.

8. DIOXIN MONITORING AND EFFLUENT LIMITATIONS

The NPDES permit for this bleached kraft pulp and paper mill was reopened on June 1, 1989 to incorporate water quality-based effluent limitations for dioxin (2,3,7,8-TCDD). The present permit modification contains a daily maximum effluent limitation for dioxin that is based upon the 10^{-5} human health risk factor. The effluent limitation was derived as shown below:

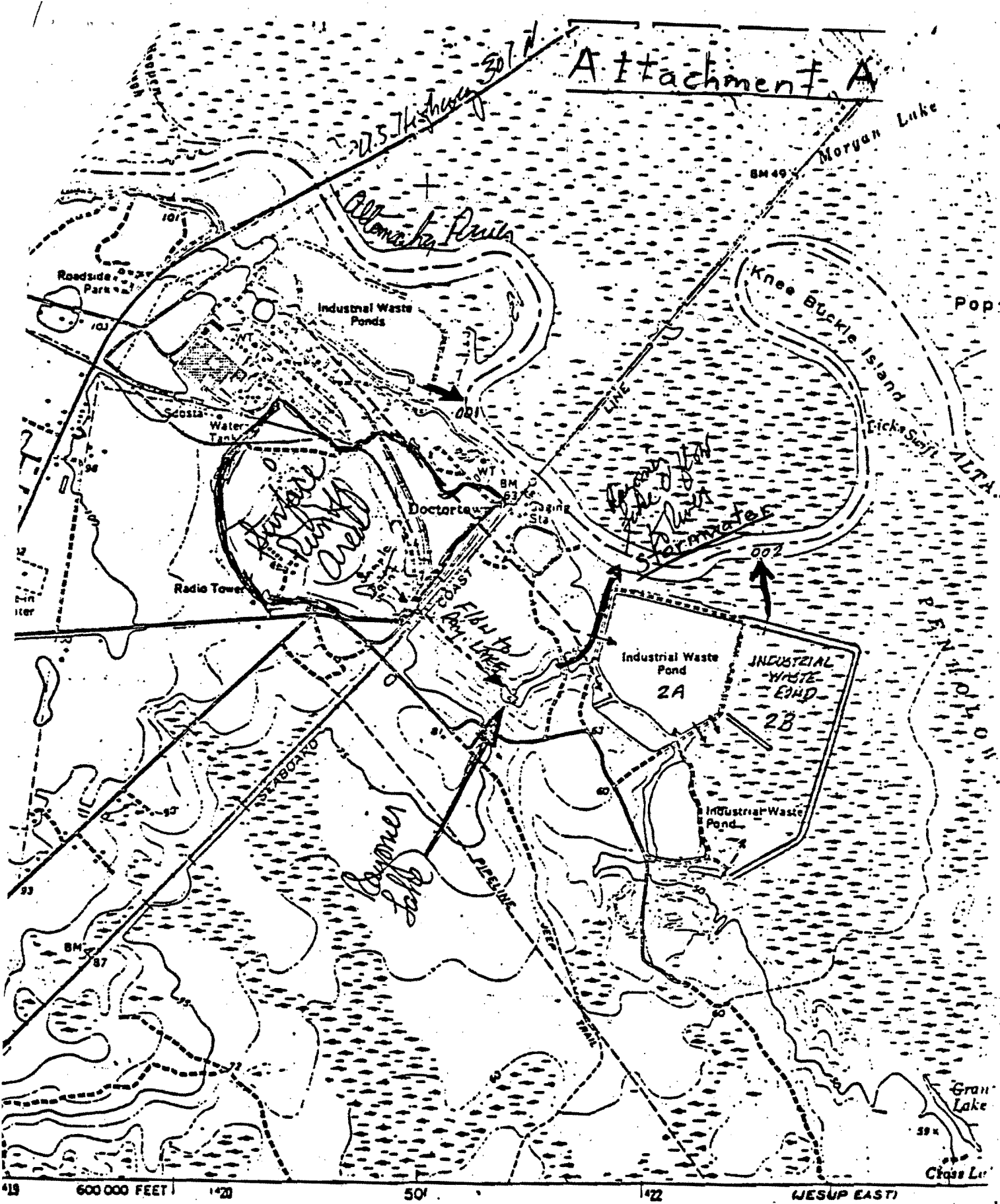
Design Discharge Flow (cfs)	Annual Average Stream Flow (cfs)	Dilution Factor	10^{-5} Human Health Criteria (µg/l)	Daily Maximum Effluent Limit (µg/l)
95.5	13,567	143	0.0000072	0.00103

In addition, the permittee shall conduct annual monitoring for dioxin and for furan (2,3,7,8-TCDF) in fish tissue in the mill's receiving stream. This monitoring program shall be conducted in accordance with the Study Plan To Conduct Dioxin Monitoring In Fish Tissue From The Vicinity Of Five Georgia Bleached Kraft Mills, March 31, 1989.

9. Bis(2-Ethyl-hexyl)Phthalate and Chloroform Monitoring Requirements

10^{-6} human health criterion for chloroform and Bis(2-Ethyl-hexyl) Phthalate has been established at 100 µg/l and 5.92 µg/l respectively. Calculated instream waste concentrations are less than 50 percent of the established human health criteria using average flow. Therefore, only monitoring is required.

Attachment A



12/10/80

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

FEB 21 1990

REF: 4WM-FP

Mr. Jack C. Dozier, P.E., Chief
Water Protection Branch
Environmental Protection Division
Georgia Department of Natural Resources
Floyd Towers East - Room 1058
205 Butler Street, S.E.
Atlanta, Georgia 30334

RE: NPDES Overview

Dear Mr. Dozier:

In accordance with the EPA/EPD MOA, we have completed review of the following final permit modifications and have no objections to the proposed permit conditions.

NPDES Number	Facility Name
GA0003620	ITT Rayonier, Inc.
GA0003654	Federal Paper Board Company, Inc.

If you have any questions, please call Ms. Yvonne Martin at 347-3012.

Sincerely yours,

John T. Marlar, Chief
Facilities Performance Branch
Water Management Division

MARTIN 2/20 CHILDRESS 2/21 PATRICK 2/21

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

JAN 17 1990

REF: 4WM-FP

Mr. Jack C. Dozier, P.E., Chief
Water Protection Branch
Environmental Protection Division
Georgia Department of Natural Resources
Floyd Towers East - Room 1058
205 Butler Street, S.E.
Atlanta, Georgia 30334

RE: ITT Rayonier, Inc.
NPDES Permit Number GA0003620

Dear Mr. Dozier:

We have completed our review of the draft permit modification for the referenced facility and wish to offer the following comments:

1. There are no specific best management practices (BMP's) written into the permit. BMP's directed at control of 2,3,7,8-TCDD found in the facility's effluent and sludge should be included in the permit. These sources indicated detectable quantities of the pollutant during the recent U.S. EPA/Paper Industry Cooperative Dioxin Study.

2. The study plan to conduct dioxin monitoring, referenced on Page 12a of the proposed permit, has been evaluated by the Environmental Services Division, Ecological Support Branch. It is recommended that this plan should be revised to correct several deficiencies noted during that review. (For your information, a copy of the internal memorandum of review is enclosed.) As indicated in our July 31, 1989, correspondence concerning this facility, it is requested that a copy of the final report of the 1989 dioxin monitoring program be submitted to this office as soon as available.

If you have any questions concerning these comments, please contact Ms. Yvonne Martin at 347-3012.

Sincerely yours,

John T. Marlar, Chief
Facilities Performance Branch
Water Management Division

Enclosure

Response dated 1/31/9

MARTIN 1/15 CHILDRESS MHfor 1/16 PATRICK PP 1/16

Georgia Department of Natural Resources
205 Butler Street, S.E., Suite 1252, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
404/656-3500

January 31, 1990

Send this to Patrick

Mr. Greer C. Tidwell
Regional Administrator
U. S. Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, Georgia 30365

Dear Mr. Tidwell:

As you are aware, the Department of Natural Resources is in the process of modifying the NPDES permits of five Georgia pulp and paper mills to add water quality limitations for 2,3,7,8-TCDD (dioxin). Based on available information, all of these mills are in full compliance with Georgia's water quality standard for dioxin. These dioxin limitations are being added to address the dioxin issue and to reassure the public rather than to correct any identified water quality problems. None of these mills should be included on the 304(1) list for dioxin, and we are officially withdrawing our earlier recommendation that they should be added to that list. Please refer to the attached copies of the latest guidance from EPA headquarters on this subject.

Copies of Mr. Marlar's comment letters on these draft modifications are enclosed for reference. Considering that the five mills are in compliance, there is no need to include specific best management practices in the permits, and the study plan to conduct dioxin monitoring is fully adequate. The dilution factor used to calculate effluent limits in the Georgia Pacific modification was derived from the mathematical model of the Turtle River. Although we would be happy to discuss the modeling procedure with your staff, there is no simple data set that would allow them to reproduce the dilution factor derivation.

Greenfield call Roy

Regarding Mr. Marlar's statement that the proposed modification for Georgia Pacific Corporation is not a valid action and that EPD must submit a draft permit "in its entirety," I would point out that EPD has been trying to reissue this permit for years. Most recently, we devoted a great deal of time and effort developing a use attainability analysis of the Turtle River. The study, which included recommendations for permit changes to assure compliance with dissolved oxygen standards in the Turtle River, was submitted for EPA review on June 9, 1989. We have not yet received any response. We will be happy to submit a draft permit in its entirety to EPA once you have approved recommendations of the use attainability analysis.

Sincerely,

J. Leonard Ledbetter

J. Leonard Ledbetter
Commissioner

JLL:mck
Enclosure

cc: Mr. Ray Cunningham

GEORGIA

FISCAL YEAR 1990 NPDES PERMIT REVIEW

FACILITY: ITT Rayonier, Inc.

NPDES No: GA 0003620

APPLICATION DRAFT (20 days) X FINAL (15 working days)

____ NEW (10 days)

X MAJOR INDUSTRIAL

____ MAJOR MUNICIPAL

____ MINOR PRIMARY

X MODIFICATION (circle one: Major Ind/Mun. or Minor Pri)

ROUTING:
1. DATE RECEIVED 1/11/90
2. UNIT CHIEF
3. ASSIGNED TO _____ DUE 1/30/90
4. UNIT CHIEF (If Problems)
5. PERMITS CLERK
6. FILES

COMMENTS: Request recent supplemental data to the permit application } Request to Secretary to L. Kloet on 1/12/90

Verify Ann. Avg. = WQ - Request to WQ 1/12/90 & Rec. 1/12/90 Per L. Kloet 1/1 Use 1987 appl.

Comments: Two from previous letter - No specific BMP's
Study plan problems

ACTION TO BE TAKEN: Comment letter Drafted: 1/15/90 Mailed: 1/17/90

J. Martin 1/17/90
COMPLETED BY DATE

001 Max 30 Day Flow = 22.9 MGD

Ann. Avg. Stream Flow = 13,567 MGD

7Q10 = Assume 0 but Know is greater

$Q_r + Q_w$ = 13589.9

Eff. Conc.		IWC	WQS
Phenols, ug/l	70	70	300
Chloroform, ug/l	280	.47	470.8
Bis (2-ethyl hexyl) phthalate	23	.04	5.92

002 Max 30 Day Flow = 55.1 MGD

$Q_r + Q_w$ = 13622.1

Chloroform, ug/l	280	1.13	470.8
Bis (2-ethyl hexyl) phthalate, ug/l	23	.09	5.92

Per WQ 1/12/90

001 Plant Flow = 22.9 MGD = 35.4 cfs

7Q10 = 2250 cfs $Q_r + Q_w$ = 2285.4

Ann. Avg. = 5000 cfs = 5035.4

Eff. Parameter	Conc.	IWC	WQS	
Phenols, ug/l	70	1.08	300	↓
Chloroform, ug/l	280	1.97	470.8	↓
Bis (2-ethyl hexyl) phthalate, ug/l	23	.16	5.92	↓

002 Plant Flow = 55.1 MGD = 85.3 cfs

7Q10 = 2250 cfs $Q_r + Q_w$ = 2335.3

Ann Avg = 5000 cfs = 5085.3

Chloroform, ug/l	280	10.2	470.8	↓
Bis (2-ethylhexyl) Phthalate, ug/l	23	.84	5.92	↓

Georgia Department of Natural Resources
205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

January 4, 1990

Mr. Robert A. McCrary
Manager - Environmental Control
ITT Rayonier, Inc.
P. O. Box 2070
Jesup, Georgia 31545

Re: NPDES Permit No. GA 0003620

Dear Mr. McCrary:

On December 6, 1989, the Board of Natural Resources adopted extensive amendments to Georgia's water quality regulations. These amendments added numerical instream criteria for numerous additional toxic pollutants. The Environmental Protection Division is now in the process of screening effluent data from all dischargers and modifying NPDES discharge permits where necessary to assure compliance with the water quality standards. A copy of the amended regulations is enclosed.

Generally, annual monitoring will be required for all toxic pollutants for which Georgia has adopted a standard if they are believed to be present in the discharge above the analytical detection limit. For any pollutant which is believed to be present at 50% or more of the concentration allowed by the instream criteria, a permit limitation will be established and more frequent monitoring may be required. If necessary, a schedule extending no later than December 31, 1991 can be allowed for attaining compliance with new permit limitations. Permit modifications for all discharges which are believed to be exceeding concentrations allowed by the criteria must be completed by February 4, 1990.

Based on your most recent data supplementing the NPDES application, we have determined that certain modifications to your draft NPDES permit are required to assure compliance with the water quality standards. The proposed modifications are given in the attached pages 2a and 12a which are to be inserted as additions to your current permit.

If you have any comments or questions regarding this proposed change, please contact Mr. Larry Kloet at 404-656-4887.

Sincerely,

Michael S. Creason

Michael S. Creason, P.E.
South Unit Coordinator
Industrial Wastewater Program

MSC:lkk:023
Enclosures

cc: Mr. John T. Marlar (w/enclosures)
U. S. Environmental Protection Agency

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Revised - was 6/3/92

1. During the period beginning effective date and lasting through December 1, 1992, the permittee is authorized to discharge from outfall(s) serial number(s) 001 and 002 - Process wastewater, sanitary wastes, and stormwater runoff.

   Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations				Monitoring Requirements		
	Mass Based		Concentration Based				
	Daily Avg.	Daily Max.	Daily Avg.	Daily Max.	Measurement Frequency	Sample Type	Sample Location
Dioxin (2,3,7,8-TCDD)[1]	-	-	- Revised from 1.1 ppq	.00103 µg/l	Quarterly	24-Hour Composite	Effluent
Add Bis(2 Ethyl-hexyl)Phthalate	-	-	-	-	Annual	24-Hour Composite	Effluent
Chloroform	-	-	-	-	Annual	24-Hour Composite	Effluent

1. The permittee shall adhere to the analytical protocol described in Appendix C of the U. S. EPA/Paper Industry Cooperative Dioxin Screening Study (EPA 440/1-88-025, March 1988) when analyzing wastewater effluent samples for 2,3,7,8-TCDD.

   The effluent sample location shall be defined as the discharge stream after treatment, but prior to mixing with any other waters.

DRAFT

6. The permittee shall monitor for dioxin (2,3,7,8-TCDD) and furan (2,3,7,8-TCDF) in ambient fish tissue in the facility's receiving stream. The dioxin monitoring program shall be conducted in accordance with the Study Plan To Conduct Dioxin Monitoring In Fish Tissue From The Vicinity Of Five Georgia Bleached Kraft Mills, March 31, 1989. The sampling/testing program shall be conducted on an annual basis, with annual reports submitted to the Director.

7. The Director recommends that the permittee develop and implement Best Management Practices (BMP's) for chlorine minimization in the pulp bleach plant and for total suspended solids minimization in the final effluent. Furthermore, the Director recommends that such BMP's include the necessary studies to determine if process modifications to the bleach plant and/or additional effluent controls are feasible for the permittee's facility. Should the permittee decide that such studies are warranted, these studies shall be conducted and a report of their findings submitted to the Director by December 31, 1990. To the maximum extent practicable, the permittee shall implement the findings of the chlorine minimization and total suspended solids minimization studies by no later than June 4, 1992.

Same as June 1989 draft mod.

DRAFT

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION
270 Washington Street, S. W.
Atlanta, Georgia 30334

FACT SHEET

APPLICATION FOR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT TO DISCHARGE TREATED WASTEWATER TO WATERS OF THE STATE OF GEORGIA

Application No. GA 0003620 Date January 4, 1990

1. SYNOPSIS OF APPLICATION

a. Name and Address of Applicant

ITT Rayonier, Inc.
P. O. Box 207
Jesup, Georgia 31545

b. Description of Applicant's Operation

Pulp and Paper Mill, produces market bleached kraft and dissolving kraft.

c. Production Capacity of Facility

1740 ADT/day, may be increased to 1940 ADT/day by 1990.

d. Applicant's Receiving Waters

Altamaha River

For a sketch showing the location of the discharge(s), see Attachment A.

e. Description of Existing Pollution Abatement Facilities

Screening
Primary Clarification
Nutrient Addition
Aeration Basin

f. Description of Discharges (as reported by applicant)

Serial 001 and 002 Combined

Average Flow	-	62 mgd
Average Winter Temperature	-	22°C
Average Summer Temperature	-	34°C
pH Range (std. units)	-	7.0 to 8.4

Pollutants which are present in significant quantities or which are subject to effluent limitation are as follows:

Effluent Characteristic	Reported Load
BOD_5	32 mg/l
Total Suspended Solids	57 mg/l

Stormwater Runoff Point Sources

Average Flow	-	Varies
Average Winter Temperature	-	N/A
Average Summer Temperature	-	N/A
pH Range (std. units)	-	7.1

Pollutants which are present in significant quantities or which are subject to effluent limitation are as follows:

Effluent Characteristic	Reported Load
BOD_5	5 mg/l
Total Suspended Solids	2 mg/l

2. PROPOSED EFFLUENT LIMITATIONS

Serial 001 and 002 - Combined

Permitted Maximum Temperature - N/A
Permitted pH Range (std. units) - 6.0 - 9.0

Effluent Characteristic	Discharge Limitation
BOD_5	
May 1 - November 30	22,300 lbs/day Avg.Daily 33,450 lbs/day Max.Daily
December 1 - April 30	32,000 lbs/day Avg.Daily 48,000 lbs/day Max.Daily

BOD_5 limitations may be increased to 35,000 lbs/day average daily and 52,500 lbs/day maximum daily during wintertime months (December 1 - April 30) if anticipated production in 1990 is reached.

Total Suspended Solids	42,010 lbs/day Avg.Daily 77,600 lbs/day Max.Daily

Serial _____ - N/A

Permitted Maximum Temperature -
Permitted pH Range (std. units) -

Effluent Characteristic	Discharge Limitation

3. MONITORING REQUIREMENTS

The applicant will be required to monitor regularly for flow and those parameters limited in Section 2 above with sufficient frequency to ensure compliance with the permit conditions. Frequency, methods of sampling, and reporting dates will be specified in the final permit.

4. PROPOSED COMPLIANCE SCHEDULE FOR ATTAINING EFFLUENT LIMITATIONS

N/A

5. PROPOSED SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE DISCHARGE

See Part III, Special Requirements of NPDES permit, attached.

6. WATER QUALITY STANDARDS AND EFFLUENT STANDARDS APPLIED TO THE DISCHARGE

The Altamaha River is classified as fishing. The effluent limitations were derived to meet this classification.

7. PROCEDURES FOR THE FORMULATION OF FINAL DETERMINATIONS

a. Comment Period

The Georgia Environmental Protection Division (EPD) proposes to issue an NPDES permit to this applicant subject to the effluent limitations and special conditions outlined above. These determinations are tentative.

Interested persons are invited to submit written comments on the permit application or on EPD's proposed determinations to the following address:

Georgia Environmental Protection Division
205 Butler Street, S.E.
Floyd Towers East, Room 1070
Atlanta, Georgia 30334

All comments received prior to
will be considered in the formulation of final determinations with regard to this application.

b. Public Hearings

Any applicant, affected state or interstate agency, the Regional Administrator of the U. S. Environmental Protection Agency (EPA) or any other interested agency, person or group of persons may request a public hearing with respect to an NPDES permit application if such request is filed within thirty (30) days following the date of the public notice for such application. Such request must indicate the interest of the party filing the request, the reasons why a hearing is requested, and those specific portions of the application or other NPDES form or information to be considered at the public hearing. The Director shall hold a hearing if he determines that there is sufficient public interest in holding such a hearing. If a public hearing is held, notice of same shall be provided at least thirty (30) days in advance of the hearing date.

In the event that a public hearing is held, both oral and written comments will be accepted; however, for the accuracy of the record, written comments are encouraged. The Director or his designee reserves the right to fix reasonable limits on the time allowed for oral statements and such other procedural requirements as he deems appropriate.

Following a public hearing, the Director, unless he should decide to deny the permit, may make such modifications in the terms and conditions of the proposed permit as may be appropriate and shall issue the permit. Notice of issuance or denial will be circulated to those persons or groups who participated in the hearing; to those persons or groups who submitted written comments to the Director on the proposed permit within thirty (30) days from the date of the public notice of the application for permit; and to all persons or groups included on the EPD mailing list.

c. Contested Hearings

Any person who is aggrieved or adversely affected by the issuance or denial of a permit by the Director of EPD may petition the Director for a hearing if such petition is filed in the office of the Director within thirty (30) days from the date of notice of such permit issuance or denial. Such hearing shall be held in accordance with the EPD Rules, Water Quality Control, subparagraph 391-3-6-.01.

Petitions for a contested hearing must include the following:

1. The name and address of the petitioner;

2. The grounds under which petitioner alleges to be aggrieved or adversely affected by the issuance or denial of a permit;

3. The reason or reasons why petitioner takes issue with the action of the Director;

4. All other matters asserted by petitioner which are relevant to the action in question.

d. Issuance of the Permit When No Public Hearing is Held

If no public hearing is held, and, after review of the written comments received, the Director determines that a permit should be issued and that his determinations as set forth in the proposed permit are substantially unchanged, the permit will be issued and will become final in the absence of a request for a Contested Hearing. Notice of issuance or denial will be circulated to those persons who submitted written comments to the Director on the proposed permit within thirty (30) days from the date of the public notice of such proposed permit; and to all persons or groups included on the EPD mailing list.

If no public hearing is held, but the Director determines, after a review of the written comments received, that a permit should be issued but that substantial changes in the proposed permit are warranted, public notice of the revised determinations will be given and written comments accepted in the same manner as the initial notice of application was given and written comments accepted pursuant to EPD Rules, Water Quality Control, subparagraph 391-3-6-.06(7)(b). The Director shall provide an opportunity for public hearing on the revised determinations. Such opportunity for public hearing and the issuance or denial of a permit thereafter shall be in accordance with the procedures as set forth above.

8. DIOXIN MONITORING AND EFFLUENT LIMITATIONS

The NPDES permit for this bleached kraft pulp and paper mill was reopened on June 1, 1989 to incorporate water quality-based effluent limitations for dioxin (2,3,7,8-TCDD). The present permit modification contains a daily maximum effluent limitation for dioxin that is based upon the 10^{-5} human health risk factor. The effluent limitation was derived as shown below:

Design Discharge Flow (mgd)	Annual Average Stream Flow (mgd)	Dilution Factor	10^{-5} Human Health Criteria (µg/l)	Daily Maximum Effluent Limit (µg/l)
	(Increased considerably)			
95.5	13,567	143 ↑	0.0000072	0.00103 calc
		But still less than our check		

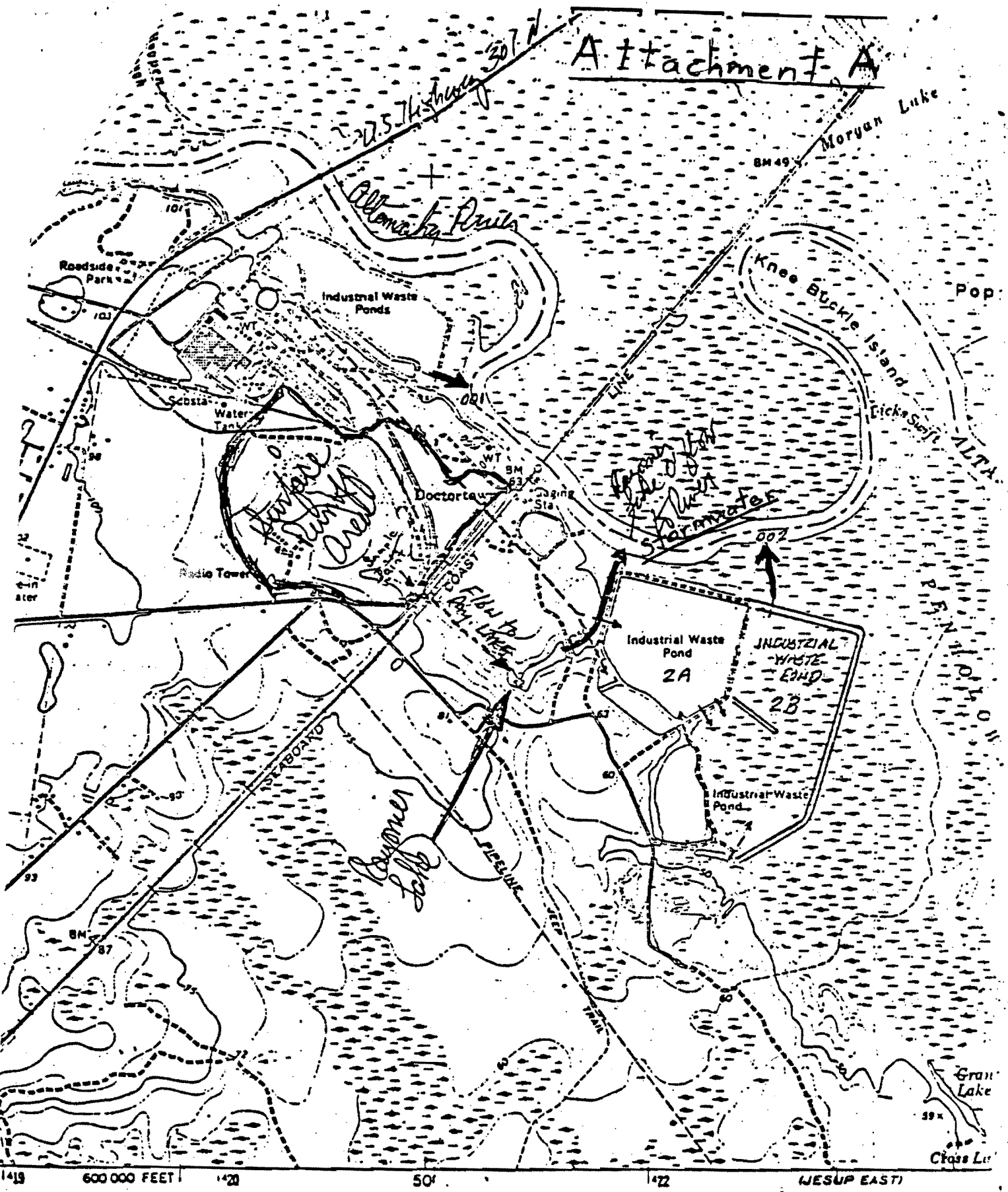
In addition, the permittee shall conduct annual monitoring for dioxin and for furan (2,3,7,8-TCDF) in fish tissue in the mill's receiving stream. This monitoring program shall be conducted in accordance with the Study Plan To Conduct Dioxin Monitoring In Fish Tissue From The Vicinity Of Five Georgia Bleached Kraft Mills, March 31, 1989.

9. Bis(2-Ethyl-hexyl)Phthalate and Chloroform Monitoring Requirements

1 sample for each

10^{-6} human health criterion for chloroform and Bis(2-Ethyl-hexyl) Phthalate has been established at 100 µg/l and 5.92 µg/l respectively. Calculated instream waste concentrations are less than 50 percent of the established human health criteria using average flow. Therefore, only monitoring is required.

Attachment A



12/10/80

B. SPECIAL REQUIREMENTS

1. River samples shall be collected and analyzed twice a month during the months, May through November. Samples shall be taken from the U.S. 301 Highway bridge, the ITT Rayonier marker just upstream from the confluence of Penholloway Creek and the Altamaha River, and the monitoring station at Everett City. Sampling shall be done near midstream or at a point which is judged to be representative of the river. Collection of samples shall be taken when flows are less than 10,000 cfs and when the river is at steady flow conditions. The time of collection at the various points shall coincide with time of travel for the river. Samples shall be analyzed for the following:

   a. BOD_5 and BOD_{40}

   b. Dissolved Oxygen

   c. pH

   d. Temperature

   Also, river stage and associated flow at Doctortown should be reported during periods scheduled for sampling whether or not sampling is actually conducted during that time.

2. The data from the river sampling program described above will be used by the Environmental Protection Division to refine and update the current stream model. If water quality violations are documented, limitations in Part I, Section A.1. will be adjusted accordingly.

3. The effluent limitations for BOD_5 for the December through April period may be modified to equal the limitations for the May through November period. The Director will provide written notification to the permittee 180 days prior to this permit modification.

4. Limits on page 2 are based on the permittee's anticipated production rate of 1740 ADTPD in 1988. This assumes that 38 percent of production is dissolving kraft and 62 percent of production is bleached kraft. The permittee anticipates that production will be increased to 1940 ADTPD in 1990 and is requesting a corresponding increase in the wintertime (December 1 - April 30) BOD_5 limitation from 32,000 lbs. per day to 35,000 lbs. per day on a daily average basis.

B. SPECIAL REQUIREMENTS (continued)

By December 1, 1989, the Division will be provided with the expected projected production for the following calendar year and with a summary of the actual production for the previous twelve month period. The effluent limitations will be adjusted in proportion to the projected production and shall not exceed the effluent limits commensurate with the 1940 ADTPD under this permit. This assumes approximately the same ratio of dissolving kraft to market bleached kraft production. These limitations will then remain in effect for the duration of the permit.

If the ratio of dissolving kraft to market bleached kraft changes, certain adjustments may have to be made in the limitations, but in no case will the daily allowable BOD_5 exceed 35,000 lbs. per day.

5. Any discharge point sources of stormwater runoff shall not cause any water quality violations in the stream.

NOI → 8/10 TO: LPK
Review within 30d
Thank
JLY

ITT

RECEIVED
AUG - 6 1987
ENVIRONMENTAL PROTECTION DIV.
WATER PROTECTION BRANCH

ITT Rayonier Inc.
Jesup Division
Post Office Box 207
Jesup, Georgia 31545-0207
[912] 427-8651

July 31, 1987

AUG 1987

Mr. Leonard Ledbetter, Director
Environmental Protection Division
Department of Natural Resources
Floyd Towers East
205 Butler Street, S.E.
Atlanta, Georgia 30334

Dear Mr. Ledbetter:

Enclosed is the Jesup Division's application to renew its NPDES permit for an additional five years. The current permit is to expire on 5 December 1987.

As discussed with your Mr. Larry Kloet, we have in some cases tested only one of our outfalls since this is permitted for similar outfalls under the instructions on page 2C-2.

As discussed and confirmed by letter to your former employee Mr. William Jernigan on 19 December 1980, we again do not propose to have permitted as a point source uncontaminated surface runoff into ditches at the rear of the mill. Copies of the correspondence regarding this situation are attached. We realize that the forthcoming NPDES Storm Water Runoff Regulation may require a more detailed evaluation of the surface runoff from the mill site.

Enclosed is a summary sheet of Altamaha River data submitted to the GEPD over the past few years. Also enclosed are copies of the U. S. Geological Survey D. O. data sheets for information gathered on the Altamaha at Everett City for the water years 1983, 1984, and 1985. The minimum D. O. detected by Rayonier during the survey period was 6.0 mg/l. The minimum D. O. detected by the U. S. Geologic Survey instruments at Everett City was also 6.0 mg/l. The flows when the minimum D. O.'s were experienced were seasonally high, thus affording a substantial amount of oxygen to assimilate a small amount of BOD_5 from Rayonier's effluent discharge.

The above data is provided as discussed with the GEPD when our allowable BOD_5 discharge was increased to 30,000 ppd during the cold weather months under our existing permit. In negotiating this increase it

continued...

was agreed that additional cold weather BOD_5 data would be provided as a basis to consider raising the BOD_5 by another increment during cold weather months.

Based on the good BOD_5 data presented, we would propose that the BOD limit during the cold weather months be increased to 32,000 ppd until the mill expansion is completed and to 35,000 ppd after the expansion. These proposals are still less than would be allowed under BPT.

These permit modifications would make possible a savings in power that could amount to $20,000 per year or $100,000 over the 5-year permit period.

Should additional information be needed, please let me know.

Very truly yours,

ITT RAYONIER INC.

R. A. McCrary

R. A. McCrary
Manager, Environmental
Affairs/Pulp Products
Southeastern Operations

RAM:cvt

cc: J. R. Bland (w/o attach.)

Attachments

PROJ

C130 STRP FILE

TO: LPK

ITT Rayonier Inc.

Jesup Division

Post Office Box 207
Jesup, Georgia 31545-0207
[912] 427-8651

September 18, 1987

Mr. Nolton G. Johnson, Assistant Chief
Water Protection Branch
Georgia Environmental Protection Division
Floyd Towers East
205 Butler Street, S. E.
Atlanta, Georgia 30334

Dear Mr. Johnson:

In your letter of 4 September you ask that we certify that we do not use pentachlorophenol or trichlorophenol in lieu of testing for the Jesup Division NPDES permit.

By copy of this letter we would advise you that to our knowledge no pentachlorophenol or trichlorophenol is in use at the Jesup Division.

Should you need additional information, please let us know.

Yours truly,

ITT RAYONIER INC.

R. A. McCrary

R. A. McCrary
Manager, Environmental Control

RAM:cvt

cc: J. R. Bland
J. C. Swingle
E. F. Button
P. A. Hamlin

Please print or type in the unshaded areas only
(fill—in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved. OMB No. 2000-0474. Expires 3-31-84

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F GA0003620

LABEL ITEMS

I. EPA I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

JESUP DIVISION
ITT RAYONIER INC
P. O. BOX 2070
U.S. HWY. 301 NORTH
JESUP, GA 31545

PLEASE PLACE LABEL IN THIS SPACE

RECEIVED
OCT 2 1987
ENVIRONMENTAL PROTECTION DIVISION
NATURAL RESOURCES

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill—in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill—in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of **bold—faced terms.**

SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED	SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge** to **waters of the U.S.**? (FORM 2A)		X		B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a **discharge** to **waters of the U.S.**? (FORM 2B)		X	
C. Is this a facility which currently results in **discharges** to **waters of the U.S.** other than those described in A or B above? (FORM 2C)	X			D. Is this a proposed facility *(other than those described in A or B above)* which will result in a **discharge** to **waters of the U.S.**? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of **hazardous wastes**? (FORM 3)		X		F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)		X		J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP JESUP DIVISION ITT RAYONIER INC

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
2 McCRARY, ROBERT A. MGR. ENV. CNTL	912 427 8651

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 P.O. BOX 2070

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 JESUP	GA	31545

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 US HWY 301 NORTH

B. COUNTY NAME

WAYNE

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE *(if known)*
6 JESUP	GA	31545	

Please print or type in the unshaded areas only
(FRI—in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved. OMB No. 2000-0474. Expires 3-31-84

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

FGA000362 0

LABEL ITEMS

I. EPA I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

JESUP DIVISION
ITT RAYONIER INC.
P. O. BOX 2070
U.S. HWY. 301 NORTH
JESUP, GA 31545

PLEASE PLACE LABEL IN THIS SPACE

RECEIVED
OCT 2 1987
ENVIRONMENTAL PROTECTION DIVISION
NATURAL RESOURCES

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross it through and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK 'X' YES	MARK 'X' NO	MARK 'X' FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge** to **waters of the U.S.**? (FORM 2A)		X	
B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a **discharge** to **waters of the U.S.**? (FORM 2B)		X	
C. Is this a facility which currently results in **discharges** to **waters of the U.S.** other than those described in A or B above? (FORM 2C)	X		
D. Is this a proposed facility *(other than those described in A or B above)* which will result in a **discharge** to **waters of the U.S.**? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of **hazardous wastes**? (FORM 3)		X	
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)		X	
J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP JESUP DIVISION ITT RAYONIER INC.

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
2 McCRARY, ROBERT A. MGR. ENV. CNTL	912 427 8651

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 P.O. BOX 2070

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 JESUP	GA	31545

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 US HWY 301 NORTH

B. COUNTY NAME

WAYNE

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE *(if known)*
6 JESUP	GA	31545	

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST	B. SECOND
2611 (specify) Mfr. of Chemical Cellulose	(specify)
C. THIRD	**D. FOURTH**
(specify)	(specify)

VIII. OPERATOR INFORMATION

A. NAME: ITT RAYONIER INC

B. Is the name listed in Item VIII-A also the owner? ☒ YES ☐ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)
F = FEDERAL, S = STATE, P = PRIVATE, M = PUBLIC (other than federal or state), O = OTHER (specify)
P (specify)

D. PHONE (area code & no.): A 912 427 8651

E. STREET OR P.O. BOX: P. O. BOX 2070

F. CITY OR TOWN: JESUP **G. STATE**: GA **H. ZIP CODE**: 31545

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☒ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)	N	GA 0003620	
D. PSD (Air Emissions from Proposed Sources)	P		
B. UIC (Underground Injection of Fluids)	U		
E. OTHER (specify)			(specify)
C. RCRA (Hazardous Wastes)	R		
E. OTHER (specify)			(specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

Manufacturer of dissolving pulp and bleached kraft pulp manufactured by the prehydrolyzed kraft and kraft processes respectively.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
James R. Bland; Vice President, General Manager - Jesup Division	J R Bland	10/1/87

COMMENTS FOR OFFICIAL USE ONLY

PROJ _____

C130 _____ STAP ___ FILE _____

9/21
TO: LPK

ITT Rayonier Inc.

Jesup Division

Post Office Box 207
Jesup, Georgia 31545-0207
[912] 427-8651

September 18, 1987

Mr. Nolton G. Johnson, Assistant Chief
Water Protection Branch
Georgia Environmental Protection Division
Floyd Towers East
205 Butler Street, S. E.
Atlanta, Georgia 30334

Dear Mr. Johnson:

In your letter of 4 September you ask that we certify that we do not use pentachlorophenol or trichlorophenol in lieu of testing for the Jesup Division NPDES permit.

By copy of this letter we would advise you that to our knowledge no pentachlorophenol or trichlorophenol is in use at the Jesup Division.

Should you need additional information, please let us know.

Yours truly,

ITT RAYONIER INC.

R. A. McCrary

R. A. McCrary
Manager, Environmental Control

RAM:cvt

cc: J. R. Bland
J. C. Swingle
E. F. Button
P. A. Hamlin

Please print or type in the unshaded areas only.

EPA I.D. NUMBER (copy from Item 1 of Form 1)
GA 0003620

Form Approved.
OMB No. 2000-0059
Approval expires 12-31-85

FORM 2C NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER
EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS
Consolidated Permits Program

I. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER (list)	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER (name)
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.	
001	31	39	14	81	50	11	Altamaha River
002	31	39	03	81	49	24	Altamaha River

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined *(e.g., for certain mining activities)*, provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUTFALL NO. (list)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT		
	a. OPERATION (list)	b. AVERAGE FLOW (include units)	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
001	1) Process water associated with the production of dissolving & bleached market Kraft pulp. (Excluding bleaching operation)	7.93 MGD	1 & 2) This effluent receives primary clarification, neutralization & aerated stabilization prior to being discharged to receiving water. Primary sludge to vacuum filter & landfill.	1U, 3B, 5U, 5T	2K, 4A, 5P,
	2) Sanitary Waste	.03 MGD			
*	3) Process water associated with the bleaching of the above listed pulp.	4.97 MGD	3) As above but there is no need for primary clarification and sludge handling.	2K,	3B, 4A
	4) Surface Runoff.	0.17 MGD	4) As above.	2K,3B,	4A
002	1) Process water associated with the production of dissolving & bleached market Kraft pulp. (Excluding bleaching operation).	1 & 29.68 MGD	2) This effluent receives primary clarification, neutralization & aerated stabilization prior to being discharged to receiving water. Primary sludge to vacuum filter & landfill.	1U, 3B, 5U,	2K 4A, 5P, 5T
	2) Sanitary Waste.	0.08 MGD			
*	3) Process water associated with the bleaching of the above listed pulp.	18.47 MGD	3) As above but there is no need for primary clarification & sludge handling.	2K, 4A	3B,
	4) Surface runoff.	0.67 MGD	4) As above.	2K,3B,	4A

OFFICIAL USE ONLY *(effluent guidelines sub-categories)*

CONTINUE ON REVERSE

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

☐ YES *(complete the following table)* ☒ NO *(go to Section III)*

1. OUTFALL NUMBER *(list)*	2. OPERATION(s) CONTRIBUTING FLOW *(list)*	3. FREQUENCY		4. FLOW				
		a. DAYS PER WEEK *(specify average)*	b. MONTHS PER YEAR *(specify average)*	a. FLOW RATE *(in mgd)*		b. TOTAL VOLUME *(specify with units)*		c. DURATION *(in days)*
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	

III. PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☒ YES *(complete Item III-B)* ☐ NO *(to to Section IV)*

B. Are the limitations in the applicable effluent guideline expressed in terms of production *(or other measure of operation)*?

☒ YES *(complete Item III-C)* ☐ NO *(go to Section IV)*

C. If you answered "yes" to Item III-B; list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION			2. AFFECTED OUTFALLS *(list outfall numbers)*
a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*	
1740	Air Dry Tons	Manufacturer of bleached market kraft and dissolving pulp by the kraft and prehydrolyzed kraft processes respectively. * Note: Attachment	001 & 002

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☐ YES *(complete the following table)* ☒ NO *(go to Item IV-B)*

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	a. NO.	b. SOURCE OF DISCHARGE		a. REQUIRED	b. PROJECTED

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs *(or other environmental projects which may affect your discharges)* you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction. ☐ MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

 CONTINUE ON PAGE 3

EPA I.D. NUMBER (copy from Item 1 of Form 1) GA 0003620

Form Approved.
OMB No. 2000-0059
Approval expires 12-31-85

V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding — Complete one set of tables for each outfall — Annotate the outfall number in the space provided.
NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

D. Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
Formaldehyde	Incidental to the pulping process & may be found in the mill effluent on occasion.	Other pollutants	Any other chemical substances which are or may be associated with the production of dissolving kraft or bleach market kraft pulp.
Methylmercaptan	Incidental to the pulping process & may be found in the mill effluent on occasion.		
Asbestos	Present insulation used in the pulp mill; it may be detected in mill effluent on occasion.		
Vanadium Zirconium Strontium	Trace contaminates in raw materials may be detected in effluent on occasion.		

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☐ YES *(list all such pollutants below)* ☒ NO *(go to Item VI-B)*

CONTINUED FROM THE FRONT

VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☐ YES *(identify the test(s) and describe their purposes below)* ☒ NO *(go to Section VIII)*

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

☒ YES *(list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)* ☐ NO *(go to Section IX)*

A. NAME	B. ADDRESS	C. TELEPHONE *(area code & no.)*	D. POLLUTANTS ANALYZED *(list)*
Savannah Laboratories & Environmental Services, Inc.	P. O. Box 13548 Savannah, Ga. 31416-0548	(912)-354-7858	V Part A le V Part B d-i, K-p, s,T,V V Part Cl 1M-15M 1V-31V 1A-11A 1B-46B 1P-25P
Environmental Testing & Certification Laboratory	284 Raritan Center Parkway Edison, N. J. 08837	(201) 225-5600	Dioxin Only

IX. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. NAME & OFFICIAL TITLE *(type or print)*	B. PHONE NO. *(area code & no.)*
J. R. Bland Vice President & General Manager Jesup Division	(912)-427-8651
C. SIGNATURE J R Bland	D. DATE SIGNED 7-31-87

Jesup Division
ITT Rayonier Inc.
GA 0003620

Additional Comments for Section III C

The current permit is not based on a guideline determination. If the new permit is to be calculated using the EPA effluent guidelines, the production figure given in this Section III C should be used.

Capital improvements have been budgeted that will increase production as follows:

1988 & 1989 52,500 ADT per year or 150 ADT per day

1990 17,500 ADT per year or 50 ADT per day

Capital improvements associated with these production increases include the following:

Unit C: - Extend fourdrinier wire on machine
- Replace machine headbox and fan pump
- Replace 2nd press on machine

Unit A: - Increase drying capacity of A Machine

473-868 O - 85 - 2

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*: GA 0003620

Form Approved. OMB No. 2000-0059 Approval expires 12-31-85

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL NO. 001

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	3. UNITS (specify if blank) a. CONCENTRATION	b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Biochemical Oxygen Demand *(BOD)*	43	5.21	62	3.24	32	1.88	357	mg/l	tons/day			
b. Chemical Oxygen Demand *(COD)*	118	14.12	—	—	—	—	1	mg/l	tons/day			
c. Total Organic Carbon *(TOC)*	134	16.0	—	—	—	—	1	mg/l	tons/day			
d. Total Suspended Solids *(TSS)*	86	3.45	27	1.70	57	3.41	353	mg/l	tons/day			
e. Ammonia *(as N)*	0.56	134	—	—	—	—	1	mg/l	lbs/day			
f. Flow	VALUE 28.7		VALUE 12.9		VALUE 14.3		357	—	MGD	VALUE		
g. Temperature *(winter)*	VALUE 29		VALUE 25		VALUE 22		90	°C		VALUE		
h. Temperature *(summer)*	VALUE 37		VALUE 35		VALUE 34		90	°C		VALUE		
i. pH	MINIMUM 7.0	MAXIMUM 8.4	MINIMUM 7.4	MAXIMUM 7.8			357	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X' a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residual		X	BADL*											
c. Color	X		2500	—	1850	—	1645	—	51	COLOR UNITS				
d. Fecal Coliform	X		0	0	—	—	—	—	1	MF Col./100ml				
e. Fluoride (16984-48-8)	X		0.57	136					1	mg/l	lbs/day			
f. Nitrate-Nitrite *(as N)*	X		BADL	—					1	—	—			

*BADL: BELOW ANALYTICAL DETECTION LIMIT

CONTINUE ON REVERSE

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (if available)	2. MARK 'X' a. BELIEVED PRESENT	2. MARK 'X' b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
g. Nitrogen, Total Organic (as N)	X		2.5	598	—	—	—	—	1	mg/l	lbs/day			
h. Oil and Grease	X		BADL						1					
i. Phosphorus (as P), Total (7723-14-0)	X		1.4	335	—	—	—	—	1	mg/l	lbs/day			
j. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total		X												
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (as SO_4) (14808-79-8)	X		340	40.7	—	—	—	—	1	mg/l	tons/day			
l. Sulfide (as S)		X	BADL						1					
m. Sulfite (as SO_3) (14265-45-3)		X	"						1					
n. Surfactants	X		"						1					
o. Aluminum, Total (7429-90-5)	X		0.40	95.7					1	mg/l	lbs/day			
p. Barium, Total (7440-39-3)	X		0.13	31.1					1	mg/l	lbs/day			
q. Boron, Total (7440-42-8)		X												
r. Cobalt, Total (7440-48-4)		X												
s. Iron, Total (7439-89-6)	X		0.32	76.6	—	—	—	—	1	mg/l	lbs/day			
t. Magnesium, Total (7439-95-4)	X		16	3830	—	—	—	—	1	mg/l	lbs/day			
u. Molybdenum, Total (7439-98-7)		X												
v. Manganese, Total (7439-96-5)	X		0.41	98	—	—	—	—	1	mg/l	lbs/day			
w. Tin, Total (7440-31-5)		X												
x. Titanium, Total (7440-32-6)		X												

CONTINUE ON PAGE V-3

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
GA 0003620	001

CONTINUED FROM PAGE 3 OF FORM 2-C

Form Approved.
OMB No. 2000-0059
Approval expires 12-31-85

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a *(secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions)*, mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table *(all 7 pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)	X			BADL*											
2M. Arsenic, Total (7440-38-2)	X			"											
3M. Beryllium, Total (7440-41-7)	X			"											
4M. Cadmium, Total (7440-43-9)	X			"											
5M. Chromium, Total (7440-47-3)	X			"											
6M. Copper, Total (7440-50-8)	X			"											
7M. Lead, Total (7439-92-1)	X			"											
8M. Mercury, Total (7439-97-6)	X			"											
9M. Nickel, Total (7440-02-0)	X			"											
10M. Selenium, Total (7782-49-2)	X			"											
11M. Silver, Total (7440-22-4)	X			"											
12M. Thallium, Total (7440-28-0)	X			"											
13M. Zinc, Total (7440-66-6)	X			"											
14M. Cyanide, Total (57-12-5)	X			"											
15M. Phenols, Total	X			0.07	16.8	—	—	—	—	1	mg/l	lbs/day			
DIOXIN															
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)	X			DESCRIBE RESULTS BADL - TEST RESULTS OF ENVIRONMENTAL TESTING & CERTIFICATION LABORATORY ATTACHED											

*BADL: BELOW ANALYTICAL DETECTION LIMITS

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	X			BADL *						1					
2V. Acrylonitrile (107-13-1)	X			"						32,000					
3V. Benzene (71-43-2)	X			"						↓ 1990					
4V. Bis (Chloromethyl) Ether (542-88-1)	X			"						35,000					
5V. Bromoform (75-25-2)	X			"											
6V. Carbon Tetrachloride (56-23-5)	X			"						1					
7V. Chlorobenzene (108-90-7)	X			"						1					
8V. Chlorodibromomethane (124-48-1)	X			"						1					
9V. Chloroethane (75-00-3)	X			"						1					
10V. 2-Chloroethylvinyl Ether (110-75-8)	X			"						1					
11V. Chloroform (67-66-3)	X			280	67.0	—	—	—	—	1	ug/l	lbs/day			
12V. Dichlorobromomethane (75-27-4)	X			BADL						1					
13V. Dichlorodifluoromethane (75-71-8)	X			"						1					
14V. 1,1-Dichloroethane (75-34-3)	X			"						1					
15V. 1,2-Dichloroethane (107-06-2)	X			"						1					
16V. 1,1-Dichloroethylene (75-35-4)	X			"						1					
17V. 1,2-Dichloropropane (78-87-5)	X			"						1					
18V. 1,3-Dichloropropylene (542-75-6)	X			"						1					
19V. Ethylbenzene (100-41-4)	X			"						1					
20V. Methyl Bromide (74-83-9)	X			"						1					
21V. Methyl Chloride (74-87-3)	X			"						1					

*BADL - BELOW ANALYTICAL DETECTION LIMITS

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EPA I.D. NUMBER (copy from Item 1 of Form 1): GA 0003620

OUTFALL NUMBER: 001

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1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – VOLATILE COMPOUNDS *(continued)*															
22V. Methylene Chloride (75-09-2)	X			BADL*						1					
23V. 1,1,2,2-Tetrachloroethane (79-34-5)	X			"						1					
24V. Tetrachloroethylene (127-18-4)	X			"						1					
25V. Toluene (108-88-3)	X			"						1					
26V. 1,2-Trans-Dichloroethylene (156-60-5)	X			"						1					
27V. 1,1,1-Trichloroethane (71-55-6)	X			"						1					
28V. 1,1,2-Trichloroethane (79-00-5)	X			"						1					
29V. Trichloroethylene (79-01-6)	X			"						1					
30V. Trichlorofluoromethane (75-69-4)	X			"						1					
31V. Vinyl Chloride (75-01-4)	X			"						1					
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)	X			"						1					
2A. 2,4-Dichlorophenol (120-83-2)	X			"						1					
3A. 2,4-Dimethylphenol (105-67-9)	X			"						1					
4A. 4,6-Dinitro-O-Cresol (534-52-1)	X			"						1					
5A. 2,4-Dinitrophenol (51-28-5)	X			"						1					
6A. 2-Nitrophenol (88-75-5)	X			"						1					
7A. 4-Nitrophenol (100-02-7)	X			"						1					
8A. P-Chloro-M-Cresol (59-50-7)	X			"						1					
9A. Pentachlorophenol (87-86-5)	X			"						1					
10A. Phenol (108-95-2)	X			"						1					
11A. 2,4,6-Trichlorophenol (88-06-2)	X			"						1					

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)	X			BADL*						1					
2B. Acenaphtylene (208-96-8)	X									1					
3B. Anthracene (120-12-7)	X									1					
4B. Benzidine (92-87-5)	X									1					
5B. Benzo (a) Anthracene (56-55-3)	X									1					
6B. Benzo (a) Pyrene (50-32-8)	X									1					
7B. 3,4-Benzo-fluoranthene (205-99-2)	X									1					
8B. Benzo (ghi) Perylene (191-24-2)	X									1					
9B. Benzo (k) Fluoranthene (207-08-9)	X									1					
10B. Bis (2-Chloro-ethoxy) Methane (111-91-1)	X									1					
11B. Bis (2-Chloro-ethyl) Ether (111-44-4)	X									1					
12B. Bis (2-Chloroiso-propyl) Ether (102-60-1)	X									1					
13B. Bis (2-Ethyl-hexyl) Phthalate (117-81-7)	X			23	5.5	—	—	—	—	1	ug/l	lbs/day			
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)	X									1					
15B. Butyl Benzyl Phthalate (85-68-7)	X									1					
16B. 2-Chloro-naphthalene (91-58-7)	X									1					
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)	X									1					
18B. Chrysene (218-01-9)	X									1					
19B. Dibenzo (a,h) Anthracene (53-70-3)	X									1					
20B. 1,2-Dichloro-benzene (95-50-1)	X									1					
21B. 1,3-Dichloro-benzene (541-73-1)	X									1					

*BADL - BELOW ANALYTICAL DETECTION LIMITS

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EPA I.D. NUMBER (copy from Item 1 of Form 1): GA 0003620

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1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
22B. 1,4-Dichlorobenzene (106-46-7)	X			BADL*						1					
23B. 3,3'-Dichlorobenzidine (91-94-1)	X			"						1					
24B. Diethyl Phthalate (84-66-2)	X			"						1					
25B. Dimethyl Phthalate (131-11-3)	X			"						1					
26B. Di-N-Butyl Phthalate (84-74-2)	X			"						1					
27B. 2,4-Dinitrotoluene (121-14-2)	X			"						1					
28B. 2,6-Dinitrotoluene (606-20-2)	X			"						1					
29B. Di-N-Octyl Phthalate (117-84-0)	X			"						1					
30B. 1,2-Diphenylhydrazine *(as Azobenzene)* (122-66-7)	X			"						1					
31B. Fluoranthene (206-44-0)	X			"						1					
32B. Fluorene (86-73-7)	X			"						1					
33B. Hexachlorobenzene (118-74-1)	X			"						1					
34B. Hexachlorobutadiene (87-68-3)	X			"						1					
35B. Hexachlorocyclopentadiene (77-47-4)	X			"						1					
36B. Hexachloroethane (67-72-1)	X			"						1					
37B. Indeno *(1,2,3-cd)* Pyrene (193-39-5)	X			"						1					
38B. Isophorone (78-59-1)	X			"						1					
39B. Naphthalene (91-20-3)	X			"						1					
40B. Nitrobenzene (98-95-3)	X			"						1					
41B. N-Nitrosodimethylamine (62-75-9)	X			"						1					
42B. N-Nitrosodi-N-Propylamine (621-64-7)	X			"						1					

*BADL – BELOW ANALYTICAL DETECTION LIMIT

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
43B. N-Nitrosodiphenylamine (86-30-6)	X			BADL*						1					
44B. Phenanthrene (85-01-8)	X			"						1					
45B. Pyrene (129-00-0)	X			"						1					
46B. 1,2,4 - Trichlorobenzene (120-82-1)	X			"						1					
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)	X			"						1					
2P. α-BHC (319-84-6)	X			"						1					
3P. β-BHC (319-85-7)	X			"						1					
4P. γ-BHC (58-89-9)	X			"						1					
5P. δ-BHC (319-86-8)	X			"						1					
6P. Chlordane (57-74-9)	X			"						1					
7P. 4,4'-DDT (50-29-3)	X			"						1					
8P. 4,4'-DDE (72-55-9)	X			"						1					
9P. 4,4'-DDD (72-54-8)	X			"						1					
10P. Dieldrin (60-57-1)	X			"						1					
11P. α-Endosulfan (115-29-7)	X			"						1					
12P. β-Endosulfan (115-29-7)	X			"						1					
13P. Endosulfan Sulfate (1031-07-8)	X			"						1					
14P. Endrin (72-20-8)	X			"						1					
15P. Endrin Aldehyde (7421-93-4)	X			"						1					
16P. Heptachlor (76-44-8)	X			"						1					

*BADL - BELOW ANALYTICAL DETECTION LIMITS

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EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
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1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION — PESTICIDES *(continued)*															
17P. Heptachlor Epoxide (1024-57-3)	X			BADL						1					
18P. PCB-1242 (53469-21-9)	X			"						1					
19P. PCB-1254 (11097-69-1)	X			"						1					
20P. PCB-1221 (11104-28-2)	X			"						1					
21P. PCB-1232 (11141-16-5)	X			"						1					
22P. PCB-1248 (12672-29-6)	X			"						1					
23P. PCB-1260 (11096-82-5)	X			"						1					
24P. PCB-1016 (12674-11-2)	X			"						1					
25P. Toxaphene (8001-35-2)	X			"						1					

*BADL - BELOW ANALYTICAL DETECTION LIMITS

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*: GA 0003620

Form Approved. OMB No. 2000-0059 Approval expires 12-31-85

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL NO. 002

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	3. UNITS (specify if blank) a. CONCENTRATION	b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Biochemical Oxygen Demand *(BOD)*	51	13.75	48	9.47	28	5.66	354	mg/l	tons/day			
b. Chemical Oxygen Demand *(COD)*	118	36.07	—	—	—	—	1	mg/l	tons/day			
c. Total Organic Carbon *(TOC)*	134	41.0	—	—	—	—	1	mg/l	tons/day			
d. Total Suspended Solids *(TSS)*	93	24.74	65	12.40	39	7.79	353	mg/l	tons/day			
e. Ammonia *(as N)*	0.56	342	—	—	—	—	1	mg/l	lbs/day			
f. Flow	VALUE 73.2		VALUE 55.1		VALUE 47.7		354	—	MGD	VALUE		
g. Temperature *(winter)*	VALUE 28		VALUE 25		VALUE 22		90	°C		VALUE		
h. Temperature *(summer)*	VALUE 37		VALUE 35		VALUE 34		90	°C		VALUE		
i. pH	MINIMUM 6.9	MAXIMUM 7.9	MINIMUM 7.3	MAXIMUM 7.7			354	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X' a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Bromide (24959-67-9)		✓												
b. Chlorine, Total Residual		✓	BADL*						1	—	—			
c. Color	✓		2500	—	1975	—	1736		50	COLOR UNITS	—			
d. Fecal Coliform	✓		0	0	—	—	—	—	1	MF COL./100ml				
e. Fluoride (16984-48-8)	✓		0.57	348	—	—	—	—	1	mg/l	lbs/day			
f. Nitrate-Nitrite *(as N)*	✓		BADL	—					1	—	—			

*BADL: BELOW ANALYTICAL DETECTION LIMITS

CONTINUE ON REVERSE

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (if available)	2. MARK 'X' a. BELIEVED PRESENT	2. MARK 'X' b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) b. NO. OF ANALYSES
g. Nitrogen, Total Organic (as N)	✓		2.5	1528	—	—	—	—	1	mg/l	lbs/day			
h. Oil and Grease	✓		BADL	—					1	—	—			
i. Phosphorus (as P), Total (7723-14-0)	✓		1.4	856	—	—	—	—	1	mg/l	lbs/day			
j. Radioactivity														
(1) Alpha, Total		✓												
(2) Beta, Total		✓												
(3) Radium, Total		✓												
(4) Radium 226, Total		✓												
k. Sulfate (as SO_4) (14808-79-8)	✓		340	104	—	—	—	—	1	mg/l	tons/day			
l. Sulfide (as S)		✓	BADL						1	—	—			
m. Sulfite (as SO_3) (14265-45-3)		✓	BADL						1	—	—			
n. Surfactants	✓		BADL						1	—	—			
o. Aluminum, Total (7429-90-5)	✓		0.40	245	—	—	—	—	1	mg/l	lbs/day			
p. Barium, Total (7440-39-3)	✓		0.13	79	—	—	—	—	1	mg/l	lbs/day			
q. Boron, Total (7440-42-8)		✓												
r. Cobalt, Total (7440-48-4)		✓												
s. Iron, Total (7439-89-6)	✓		0.32	196	—	—	—	—	1	mg/l	lbs/day			
t. Magnesium, Total (7439-95-4)	✓		16	4.89	—	—	—	—	1	mg/l	tons/day			
u. Molybdenum, Total (7439-98-7)		✓												
v. Manganese, Total (7439-96-5)	✓		0.41	251	—	—	—	—	1	mg/l	lbs/day			
w. Tin, Total (7440-31-5)		✓												
x. Titanium, Total (7440-32-6)		✓												

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EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
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CONTINUED FROM PAGE 3 OF FORM 2-C

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PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a *(secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions)*, mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table *(all 7 pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)	✓			BADL*						1					
2M. Arsenic, Total (7440-38-2)	✓			"						1					
3M. Beryllium, Total, 7440-41-7)	✓			"						1					
4M. Cadmium, Total (7440-43-9)	✓			"						1					
5M. Chromium, Total (7440-47-3)	✓			"						1					
6M. Copper, Total (7440-50-8)	✓			"						1					
7M. Lead, Total (7439-92-1)	✓			"						1					
8M. Mercury, Total (7439-97-6)	✓			"						1					
9M. Nickel, Total (7440-02-0)	✓			"						1					
10M. Selenium, Total (7782-49-2)	✓			"						1					
11M. Silver, Total (7440-22-4)	✓			"						1					
12M. Thallium, Total (7440-28-0)	✓			"						1					
13M. Zinc, Total (7440-66-6)	✓			"						1					
14M. Cyanide, Total (57-12-5)	✓			"						1					
15M. Phenols, Total	✓			"						1					
DIOXIN															
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)	✓			DESCRIBE RESULTS BADL-Test results of Environmental Testing & Certification Attached											

*BADL: BELOW ANALYTICAL DETECTION LIMITS

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	✓			BADL*						1					
2V. Acrylonitrile (107-13-1)	✓			"						1					
3V. Benzene (71-43-2)	✓			"						1					
4V. Bis (Chloromethyl) Ether (542-88-1)	✓			"						1					
5V. Bromoform (75-25-2)	✓			"						1					
6V. Carbon Tetrachloride (56-23-5)	✓			"						1					
7V. Chlorobenzene (108-90-7)	✓			"						1					
8V. Chlorodibromomethane (124-48-1)	✓			"						1					
9V. Chloroethane (75-00-3)	✓			"						1					
10V. 2-Chloroethylvinyl Ether (110-75-8)	✓			"						1					
11V. Chloroform (67-66-3)	✓	✓		280	171	—	—	—	—	1	ug/l	lbs./day			
12V. Dichlorobromomethane (75-27-4)	✓			BADL						1					
13V. Dichlorodifluoromethane (75-71-8)	✓			"						1					
14V. 1,1-Dichloroethane (75-34-3)	✓			"						1					
15V. 1,2-Dichloroethane (107-06-2)	✓			"						1					
16V. 1,1-Dichloroethylene (75-35-4)	✓			"						1					
17V. 1,2-Dichloropropane (78-87-5)	✓			"						1					
18V. 1,3-Dichloropropylene (542-75-6)	✓			"						1					
19V. Ethylbenzene (100-41-4)	✓			"						1					
20V. Methyl Bromide (74-83-9)	✓			"						1					
21V. Methyl Chloride (74-87-3)	✓			"						1					

 *BADL: BELOW ANALYTICAL DETECTION LIMITS

CONTINUE ON PAGE V-5

CONTINUED FROM PAGE V-4

EPA I.D. NUMBER (copy from Item 1 of Form 1): GA 0003620

OUTFALL NUMBER: 002

Form Approved.
OMB No. 2000-0059
Approval expires 12-31-85

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride (75-09-2)	✓			BADL*						1					
23V. 1,1,2,2-Tetrachloroethane (79-34-5)	✓			"						1					
24V. Tetrachloroethylene (127-18-4)	✓			"						1					
25V. Toluene (108-88-3)	✓			"						1					
26V. 1,2-Trans-Dichloroethylene (156-60-5)	✓			"						1					
27V. 1,1,1-Trichloroethane (71-55-6)	✓			"						1					
28V. 1,1,2-Trichloroethane (79-00-5)	✓			"						1					
29V. Trichloroethylene (79-01-6)	✓			"						1					
30V. Trichlorofluoromethane (75-69-4)	✓			"						1					
31V. Vinyl Chloride (75-01-4)	✓			"						1					
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)	✓			"						1					
2A. 2,4-Dichlorophenol (120-83-2)	✓			"						1					
3A. 2,4-Dimethylphenol (105-67-9)	✓			"						1					
4A. 4,6-Dinitro-O-Cresol (534-52-1)	✓			"						1					
5A. 2,4-Dinitrophenol (51-28-5)	✓			"						1					
6A. 2-Nitrophenol (88-75-5)	✓			"						1					
7A. 4-Nitrophenol (100-02-7)	✓			"						1					
8A. P-Chloro-M-Cresol (59-50-7)	✓			"						1					
9A. Pentachlorophenol (87-86-5)	✓			"						1					
10A. Phenol (108-95-2)	✓			"						1					
11A. 2,4,6-Trichlorophenol (88-06-2)	✓			"						1					

*BADL = BELOW DETECTION LIMIT

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)	✓			BADL*						1					
2B. Acenaphtylene (208-96-8)	✓			"						1					
3B. Anthracene (120-12-7)	✓			"						1					
4B. Benzidine (92-87-5)	✓			"						1					
5B. Benzo *(a)* Anthracene (56-55-3)	✓			"						1					
6B. Benzo *(a)* Pyrene (50-32-8)	✓			"						1					
7B. 3,4-Benzo-fluoranthene (205-99-2)	✓			"						1					
8B. Benzo *(ghi)* Perylene (191-24-2)	✓			"						1					
9B. Benzo *(k)* Fluoranthene (207-08-9)	✓			"						1					
10B. Bis *(2-Chloro-ethoxy)* Methane (111-91-1)	✓			"						1					
11B. Bis *(2-Chloro-ethyl)* Ether (111-44-4)	✓			"						1					
12B. Bis *(2-Chloroiso-propyl)* Ether (102-60-1)	✓			"						1					
13B. Bis *(2-Ethyl-hexyl)* Phthalate (117-81-7)	✓			23	5.5					1	ug/l	lbs/day			
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)	✓			BADL						1					
15B. Butyl Benzyl Phthalate (85-68-7)	✓			"						1					
16B. 2-Chloro-naphthalene (91-58-7)	✓			"						1					
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)	✓			"						1					
18B. Chrysene (218-01-9)	✓			"						1					
19B. Dibenzo *(a,h)* Anthracene (53-70-3)	✓			"						1					
20B. 1,2-Dichloro-benzene (95-50-1)	✓			"						1					
21B. 1,3-Dichloro-benzene (541-73-1)	✓			"						1					

 *BADL: BELOW ANALYTICAL DETECTION LIMITS

CONTINUE ON PAGE V-7

CONTINUED FROM PAGE V-6

EPA I.D. NUMBER (copy from Item 1 of Form 1): GA 0003620

OUTFALL NUMBER: 002

Form Approved.
OMB No. 2000-0059
Approval expires 12-31-85

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GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
22B. 1,4-Dichlorobenzene (106-46-7)	✓			BADL*						1					
23B. 3,3'-Dichlorobenzidine (91-94-1)	✓			"						1					
24B. Diethyl Phthalate (84-66-2)	✓			"						1					
25B. Dimethyl Phthalate (131-11-3)	✓			"						1					
26B. Di-N-Butyl Phthalate (84-74-2)	✓			"						1					
27B. 2,4-Dinitrotoluene (121-14-2)	✓			"						1					
28B. 2,6-Dinitrotoluene (606-20-2)	✓			"						1					
29B. Di-N-Octyl Phthalate (117-84-0)	✓			"						1					
30B. 1,2-Diphenylhydrazine *(as Azobenzene)* (122-66-7)	✓			"						1					
31B. Fluoranthene (206-44-0)	✓			"						1					
32B. Fluorene (86-73-7)	✓			"						1					
33B. Hexachlorobenzene (118-74-1)	✓			"						1					
34B. Hexachlorobutadiene (87-68-3)	✓			"						1					
35B. Hexachlorocyclopentadiene (77-47-4)	✓			"						1					
36B. Hexachloroethane (67-72-1)	✓			"						1					
37B. Indeno *(1,2,3-cd)* Pyrene (193-39-5)	✓			"						1					
38B. Isophorone (78-59-1)	✓			"						1					
39B. Naphthalene (91-20-3)	✓			"						1					
40B. Nitrobenzene (98-95-3)	✓			"						1					
41B. N-Nitrosodimethylamine (62-75-9)	✓			"						1					
42B. N-Nitrosodi-N-Propylamine (621-64-7)	✓			"						1					

*BADL: BELOW ANALYTICAL DETECTION LIMITS

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
43B. N-Nitrosodiphenylamine (86-30-6)	✓			BADL*						1					
44B. Phenanthrene (85-01-8)	✓			"						1					
45B. Pyrene (129-00-0)	✓			"						1					
46B. 1,2,4-Trichlorobenzene (120-82-1)	✓			"						1					
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)	✓			"						1					
2P. α-BHC (319-84-6)	✓			"						1					
3P. β-BHC (319-85-7)	✓			"						1					
4P. γ-BHC (58-89-9)	✓			"						1					
5P. δ-BHC (319-86-8)	✓			"						1					
6P. Chlordane (57-74-9)	✓			"						1					
7P. 4,4'-DDT (50-29-3)	✓			"						1					
8P. 4,4'-DDE (72-55-9)	✓			"						1					
9P. 4,4'-DDD (72-54-8)	✓			"						1					
10P. Dieldrin (60-57-1)	✓			"						1					
11P. α-Endosulfan (115-29-7)	✓			"						1					
12P. β-Endosulfan (115-29-7)	✓			"						1					
13P. Endosulfan Sulfate (1031-07-8)	✓			"						1					
14P. Endrin (72-20-8)	✓			"						1					
15P. Endrin Aldehyde (7421-93-4)	✓			"						1					
16P. Heptachlor (76-44-8)	✓			"						1					

 * BADL = BELOW ANALYTICAL DETECTION LIMITS

CONTINUE ON PAGE V-9

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICIDES *(continued)*															
17P. Heptachlor Epoxide (1024-57-3)	✓			BADL*						1					
18P. PCB-1242 (53469-21-9)	✓			"						1					
19P. PCB-1254 (11097-69-1)	✓			"						1					
20P. PCB-1221 (11104-28-2)	✓			"						1					
21P. PCB-1232 (11141-16-5)	✓			"						1					
22P. PCB-1248 (12672-29-6)	✓			"						1					
23P. PCB-1260 (11096-82-5)	✓			"						1					
24P. PCB-1016 (12674-11-2)	✓			"						1					
25P. Toxaphene (8001-35-2)	✓			"						1					

BADL*: BELOW ANALYTICAL DETECTION LIMITS

James W. Andrews, Ph.D.
President

Janette M. Davis
Vice-President

SAVANNAH LABORATORIES AND ENVIRONMENTAL SERVICES, INC.

P. O. Box 13548 • Savannah, GA 31416-0548
Whitfield Avenue at Shipyard Road (31406)
(912) 354-7858

LOG NO: 87-1956

Received: 23 JUN 87

Mr. R. A. McCrary
ITT Rayonier Inc., Jesup Division
P. O. Box 207
Jesup, GA 31545-0207

Purchase Order: C-174-12336

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	SAMPLED BY
1956-1	No. 2 AB Outfall	Client

PARAMETER	1956-1
Ammonia-N, mg/l as N	0.56
Fecal Coliform MF, col/100ml	0
Fluoride, mg/l	0.57
Nitrate+Nitrite, mg/l as N	ND
Nitrogen(Organic), mg/l	2.5
Total Organic Carbon, mg/l	134
Oil & Grease (Gravimetric), mg/l	ND
Total Phosphorus, mg/l	1.4
Sulfate as SO4, mg/l	340
Sulfide , mg/l	ND
Surfactants (MBAS-EPA 425.1), mg/l	ND
Aluminum, mg/l	0.40
Barium, mg/l	0.13
Iron, mg/l	0.32
Magnesium, mg/l	16
Manganese, mg/l	0.41

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LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	SAMPLED BY
1956-1	No. 2 AB Outfall	Client

PARAMETER	1956-1
Volatile Organic Compounds	
Acrolein, ug/l	ND
Acrylonitrile, ug/l	ND
Benzene, ug/l	ND
Bis(chloromethyl)Ether, ug/l	ND
Bromoform, ug/l	ND
Carbon Tetrachloride, ug/l	ND
Chlorobenzene, ug/l	ND
Chlorodibromomethane, ug/l	ND
Chloroethane, ug/l	ND
2-Chloroethylvinyl Ether, ug/l	ND
Chloroform, ug/l	280
Dichlorobromomethane, ug/l	ND
Dichlorodifluoromethane, ug/l	ND
1,1-Dichloroethane, ug/l	ND
1,2-Dichloroethane, ug/l	ND
1,1-Dichloroethylene, ug/l	ND
1,2-Dichloropropane, ug/l	ND
1,3-Dichloropropylene, ug/l	ND
Ethylbenzene, ug/l	ND
Methyl Bromide, ug/l	ND
Methyl Chloride, ug/l	ND
Methylene Chloride, ug/l	ND

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LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	SAMPLED BY
1956-1	No. 2 AB Outfall	Client

PARAMETER	1956-1
1,1,2,2-Tetrachloroethane, ug/l	ND
Tetrachloroethylene, ug/l	ND
Toluene, ug/l	ND
1,2-Trans-Dichloroethylene, ug/l	ND
1,1,1-Trichloroethane, ug/l	ND
1,1,2-Trichloroethane, ug/l	ND
Trichloroethylene, ug/l	ND
Trichlorofluoromethane, ug/l	ND
Vinyl Chloride, ug/l	ND
Acid Extractable Organics	
2-Chlorophenol, ug/l	ND
2,4-Dichlorophenol, ug/l	ND
2,4-Dimethylphenol, ug/l	ND
4,6-Dinitro-o-cresol, ug/l	ND
2,4-Dinitrophenol, ug/l	ND
2-Nitrophenol, ug/l	ND
4-Nitrophenol, ug/l	ND
p-Chloro-m-cresol, ug/l	ND
Pentachlorophenol, ug/l	ND
Phenol, ug/l	ND
2,4,6-Trichlorophenol, ug/l	ND

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	SAMPLED BY
1956-1	No. 2 AB Outfall	Client

PARAMETER	1956-1
Base Neutral Compounds	
Acenaphthene, ug/l	ND
Acenaphythlene, ug/l	ND
Anthracene, ug/l	ND
Benzidine, ug/l	ND
Benzo(a)Anthracene, ug/l	ND
Benzo(a)pyrene, ug/l	ND
3,4-Benzofluoranthene, ug/l	ND
Benzo (g,h,i) Perylene, ug/l	ND
Benzo (k) Fluoranthene, ug/l	ND
Bis (2-Chloroethoxy) Methane, ug/l	ND
Bis (2-Chloroethyl) Ether, ug/l	ND
Bis (2-Chloroisopropyl) Ether, ug/l	ND
Bis (2-Ethylhexyl) Phthalate, ug/l	23
4-Bromophenyl Phenyl Ether, ug/l	ND
Butyl Benzyl Phthalate, ug/l	ND
2-Chloronaphthalene, ug/l	ND
4-Chlorophenyl Phenyl Ether, ug/l	ND
Chrysene, ug/l	ND
Dibenzo (a,h) Anthracene, ug/l	ND
1,2-Dichlorobenzene, ug/l	ND
1,3-Dichlorobenzene, ug/l	ND
1,4-Dichlorobenzene, ug/l	ND

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	SAMPLED BY
1956-1	No. 2 AB Outfall	Client

PARAMETER	1956-1
3,3-Dichlorobenzidine, ug/l	ND
Diethyl Phthalate, ug/l	ND
Dimethyl Phthalate, ug/l	ND
Di-N-Butyl Phthalate, ug/l	ND
2,4-Dinitrotoluene, ug/l	ND
2,6-Dinitrotoluene, ug/l	ND
Di-N-Octyl Phthalate, ug/l	ND
1,2-Diphenylhydrazine, ug/l	ND
Fluoranthene, ug/l	ND
Fluorene, ug/l	ND
Hexachlorobenzene, ug/l	ND
Hexachlorobutadiene, ug/l	ND
Hexachlorocyclopentadiene, ug/l	ND
Hexachloroethane, ug/l	ND
Indeno (1,2,3-cd) Pyrene, ug/l	ND
Isophorone, ug/l	ND
Naphthalene, ug/l	ND
Nitrobenzene, ug/l	ND
N-Nitrosodimethylamine, ug/l	ND
N-Nitrosodi-N-Propylamine, ug/l	ND
N-Nitrosodiphenylamine, ug/l	ND
Phenanthrene, ug/l	ND
Pyrene, ug/l	ND
1,2,4-Trichlorobenzene, ug/l	ND

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LOG NO: 87-1956

Received: 23 JUN 87

Mr. R. A. McCrary
ITT Rayonier Inc., Jesup Division
P. O. Box 207
Jesup, GA 31545-0207

Purchase Order: C-174-12336

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	SAMPLED BY
1956-1	No. 2 AB Outfall	Client

PARAMETER	1956-1
Pesticides/PCB's	
Aldrin, ug/l	ND
Alpha-BHC, ug/l	ND
Beta-BHC, ug/l	ND
Gamma-BHC, ug/l	ND
Delta-BHC, ug/l	ND
Chlordane, ug/l	ND
4,4'-DDT, ug/l	ND
4,4'-DDE, ug/l	ND
4,4'-DDD, ug/l	ND
Dieldrin, ug/l	ND
Alpha-Endosulfan, ug/l	ND
Beta-Endosulfan, ug/l	ND
Endosulfan Sulfate, ug/l	ND
Endrin, ug/l	ND
Endrin Aldehyde, ug/l	ND
Heptachlor, ug/l	ND
Heptachlor Epoxide, ug/l	ND
PCB-1242, ug/l	ND
PCB-1254, ug/l	ND
PCB-1221, ug/l	ND
PCB-1232, ug/l	ND
PCB-1248, ug/l	ND
PCB-1260, ug/l	ND
PCB-1016, ug/l	ND
Toxaphene, ug/l	ND

James W. Andrews, Ph.D.
President

Janette M. Davis
Vice-President

SAVANNAH LABORATORIES AND ENVIRONMENTAL SERVICES, INC.

P. O. Box 13548 • Savannah, GA 31416-0548
Whitfield Avenue at Shipyard Road (31406)
(912) 354-7858

LOG NO: 87-1956

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ITT Rayonier Inc., Jesup Division
P. O. Box 207
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Purchase Order: C-174-12336

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	SAMPLED BY
1956-1	No. 2 AB Outfall	Client

PARAMETER	1956-1
Antimony, mg/l	ND
Arsenic, mg/l	ND
Beryllium, mg/l	ND
Cadmium, mg/l	ND
Chromium, mg/l	ND
Copper, mg/l	ND
Lead, mg/l	ND
Mercury, mg/l	ND
Nickel, mg/l	ND
Selenium, mg/l	ND
Silver, mg/l	ND
Thallium, mg/l	ND
Zinc, mg/l	ND
Phenolics,Total Recoverable, mg/l	0.07
Cyanide, mg/l	ND

Methods: EPA 40 CFR Part 136 and Standard Methods, 16th Edition
ND = None Detected

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION , QUALITY CONTROL SAMPLES	SAMPLED BY
1956-5	Detection Limit	Client
1956-6	Accuracy (mean % recovery)	
1956-7	Precision (mean % RSD)	

PARAMETER	1956-5	1956-6	1956-7
Ammonia-N, mg/l as N	0.03	120 %	6.8 %
Fecal Coliform MF, col/100ml	1	NA	NA
Fluoride, mg/l	0.2	99 %	3.6 %
Nitrate+Nitrite, mg/l as N	0.05	115 %	6.1 %
Nitrogen(Organic), mg/l	0.04	120 %	6.8 %
Total Organic Carbon, mg/l	1.0	98 %	1.7 %
Oil & Grease (Gravimetric), mg/l	5	105 %	5.4 %
Total Phosphorus, mg/l	0.5	78 %	0.16 %
Sulfate as SO4, mg/l	1.0	97 %	2.2 %
Sulfide , mg/l	1.0	70 %	0 %
Surfactants (MBAS-EPA 425.1), mg/l	0.10	99 %	7.0 %
Aluminum, mg/l	0.1	99 %	0.95 %
Barium, mg/l	0.05	106 %	0.70 %
Iron, mg/l	0.05	108 %	0.80 %
Magnesium, mg/l	0.05	86 %	1.5 %
Manganese, mg/l	0.05	93 %	1.4 %

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1956-5	Detection Limit	Client
1956-6	Accuracy (mean % recovery)	
1956-7	Precision (mean % RSD)	

PARAMETER	1956-5	1956-6	1956-7
Volatile Organic Compounds			
Acrolein, ug/l	50	---	---
Acrylonitrile, ug/l	50	---	---
Benzene, ug/l	1	116 %	5.5 %
Bis(chloromethyl)Ether, ug/l	1	---	---
Bromoform, ug/l	1	---	---
Carbon Tetrachloride, ug/l	1	---	---
Chlorobenzene, ug/l	1	123 %	4.6 %
Chlorodibromomethane, ug/l	1	---	---
Chloroethane, ug/l	1	---	---
2-Chloroethylvinyl Ether, ug/l	1	---	---
Chloroform, ug/l	1	---	---
Dichlorobromomethane, ug/l	1	---	---
Dichlorodifluoromethane, ug/l	1	---	---
1,1-Dichloroethane, ug/l	1	---	---
1,2-Dichloroethane, ug/l	1	---	---
1,1-Dichloroethylene, ug/l	1	106 %	2.2 %
1,2-Dichloropropane, ug/l	1	---	---
1,3-Dichloropropylene, ug/l	1	---	---
Ethylbenzene, ug/l	1	---	---
Methyl Bromide, ug/l	1	---	---

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1956-5	Detection Limit	Client
1956-6	Accuracy (mean % recovery)	
1956-7	Precision (mean % RSD)	

PARAMETER			1956-5	1956-6	1956-7
Methyl Chloride, ug/l			1	---	---
Methylene Chloride, ug/l			1	---	---
1,1,2,2-Tetrachloroethane, ug/l			1	---	---
Tetrachloroethylene, ug/l			1	---	---
Toluene, ug/l			1	156 %	6.8 %
1,2-Trans-Dichloroethylene, ug/l			1	---	---
1,1,1-Trichloroethane, ug/l			1	---	---
1,1,2-Trichloroethane, ug/l			1	---	---
Trichloroethylene, ug/l			1	95 %	1.1 %
Trichlorofluoromethane, ug/l			1	---	---
Vinyl Chloride, ug/l			1	---	---

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LOG NO	SAMPLE DESCRIPTION , QUALITY CONTROL SAMPLES	SAMPLED BY
1956-5	Detection Limit	Client
1956-6	Accuracy (mean % recovery)	
1956-7	Precision (mean % RSD)	

PARAMETER	1956-5	1956-6	1956-7
Acid Extractable Organics			
2-Chlorophenol, ug/l	10	121 %	5.8 %
2,4-Dichlorophenol, ug/l	10	---	---
2,4-Dimethylphenol, ug/l	10	---	---
4,6-Dinitro-o-cresol, ug/l	20	---	---
2,4-Dinitrophenol, ug/l	50	---	---
2-Nitrophenol, ug/l	20	---	---
4-Nitrophenol, ug/l	30	39 %	7.3 %
p-Chloro-m-cresol, ug/l	10	53 %	9.4 %
Pentachlorophenol, ug/l	10	34 %	19 %
Phenol, ug/l	10	49 %	2.2 %
2,4,6-Trichlorophenol, ug/l	10	---	---

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LOG NO	SAMPLE DESCRIPTION , QUALITY CONTROL SAMPLES	SAMPLED BY
1956-5	Detection Limit	Client
1956-6	Accuracy (mean % recovery)	
1956-7	Precision (mean % RSD)	

PARAMETER	1956-5	1956-6	1956-7
Base Neutral Compounds			
Acenaphthene, ug/l	10	64 %	2.2 %
Acenaphythlene, ug/l	10	---	---
Anthracene, ug/l	10	---	---
Benzidine, ug/l	10	---	---
Benzo(a)Anthracene, ug/l	10	---	---
Benzo(a)pyrene, ug/l	10	---	---
3,4-Benzofluoranthene, ug/l	10	---	---
Benzo (g,h,i) Perylene, ug/l	10	---	---
Benzo (k) Fluoranthene, ug/l	10	---	---
Bis (2-Chloroethoxy) Methane, ug/l	10	---	---
Bis (2-Chloroethyl) Ether, ug/l	10	---	---
Bis (2-Chloroisopropyl) Ether, ug/l	10	---	---
Bis (2-Ethylhexyl) Phthalate, ug/l	10	---	---
4-Bromophenyl Phenyl Ether, ug/l	10	---	---
Butyl Benzyl Phthalate, ug/l	10	---	---
2-Chloronaphthalene, ug/l	10	---	---
4-Chlorophenyl Phenyl Ether, ug/l	10	---	---
Chrysene, ug/l	10	---	---
Dibenzo (a,h) Anthracene, ug/l	10	---	---
1,2-Dichlorobenzene, ug/l	10	---	---

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LOG NO	SAMPLE DESCRIPTION , QUALITY CONTROL SAMPLES	SAMPLED BY
1956-5	Detection Limit	Client
1956-6	Accuracy (mean % recovery)	
1956-7	Precision (mean % RSD)	

PARAMETER	1956-5	1956-6	1956-7
1,3-Dichlorobenzene, ug/l	10	---	---
1,4-Dichlorobenzene, ug/l	10	54 %	3.9 %
3,3-Dichlorobenzidine, ug/l	20	---	---
Diethyl Phthalate, ug/l	10	---	---
Dimethyl Phthalate, ug/l	10	---	---
Di-N-Butyl Phthalate, ug/l	10	---	---
2,4-Dinitrotoluene, ug/l	10	46 %	43 %
2,6-Dinitrotoluene, ug/l	10	---	---
Di-N-Octyl Phthalate, ug/l	10	---	---
1,2-Diphenylhydrazine, ug/l	10	---	---
Fluoranthene, ug/l	10	---	---
Fluorene, ug/l	10	---	---
Hexachlorobenzene, ug/l	10	---	---
Hexachlorobutadiene, ug/l	10	---	---
Hexachlorocyclopentadiene, ug/l	10	---	---
Hexachloroethane, ug/l	10	---	---
Indeno (1,2,3-cd) Pyrene, ug/l	10	---	---
Isophorone, ug/l	10	---	---
Naphthalene, ug/l	10	---	---
Nitrobenzene, ug/l	10	---	---
N-Nitrosodimethylamine, ug/l	20	---	---
N-Nitrosodi-N-Propylamine, ug/l	10	23 %	22 %
N-Nitrosodiphenylamine, ug/l	10	---	---
Phenanthrene, ug/l	10	---	---
Pyrene, ug/l	10	66 %	16 %
1,2,4-Trichlorobenzene, ug/l	10	53 %	2.7 %

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1956-5	Detection Limit	Client
1956-6	Accuracy (mean % recovery)	
1956-7	Precision (mean % RSD)	

PARAMETER	1956-5	1956-6	1956-7
Pesticides/PCB's			
Aldrin, ug/l	0.01	87 %	22 %
Alpha-BHC, ug/l	0.01	---	---
Beta-BHC, ug/l	0.04	---	---
Gamma-BHC, ug/l	0.01	118 %	24 %
Delta-BHC, ug/l	0.01	---	---
Chlordane, ug/l	0.20	---	---
4,4'-DDT, ug/l	0.05	111 %	5.2 %
4,4'-DDE, ug/l	0.02	---	---
4,4'-DDD, ug/l	0.02	---	---
Dieldrin, ug/l	0.02	131 %	17 %
Alpha-Endosulfan, ug/l	0.02	---	---
Beta-Endosulfan, ug/l	0.05	---	---
Endosulfan Sulfate, ug/l	0.10	---	---
Endrin, ug/l	0.02	113 %	14 %
Endrin Aldehyde, ug/l	0.10	---	---
Heptachlor, ug/l	0.02	80 %	25 %
Heptachlor Epoxide, ug/l	0.02	---	---
PCB-1242, ug/l	0.50	---	---
PCB-1254, ug/l	0.50	---	---
PCB-1221, ug/l	0.50	---	---
PCB-1232, ug/l	0.50	---	---
PCB-1248, ug/l	0.50	---	---
PCB-1260, ug/l	0.50	---	---
PCB-1016, ug/l	0.50	---	---
Toxaphene, ug/l	1.0	---	---

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LOG NO	SAMPLE DESCRIPTION , QUALITY CONTROL SAMPLES	SAMPLED BY
1956-5	Detection Limit	Client
1956-6	Accuracy (mean % recovery)	
1956-7	Precision (mean % RSD)	

PARAMETER	1956-5	1956-6	1956-7
Antimony, mg/l	0.05	93 %	4.0 %
Arsenic, mg/l	0.01	100 %	15 %
Beryllium, mg/l	0.01	110 %	1.8 %
Cadmium, mg/l	0.01	108 %	0.7 %
Chromium, mg/l	0.05	108 %	1.8 %
Copper, mg/l	0.05	104 %	1.2 %
Lead, mg/l	0.01	90 %	5.5 %
Mercury, mg/l	0.0002	100 %	0 %
Nickel, mg/l	0.05	89 %	1.0 %
Selenium, mg/l	0.01	100 %	4 %
Silver, mg/l	0.02	88 %	4.6 %
Thallium, mg/l	0.01	102 %	3.3 %
Zinc, mg/l	0.05	105 %	0.7 %
Phenolics,Total Recoverable, mg/l	0.01	92 %	3.1 %
Cyanide, mg/l	0.02	93 %	5 %

J. W. Andrews

J. W. Andrews, Ph. D.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

APR 29, 1987

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

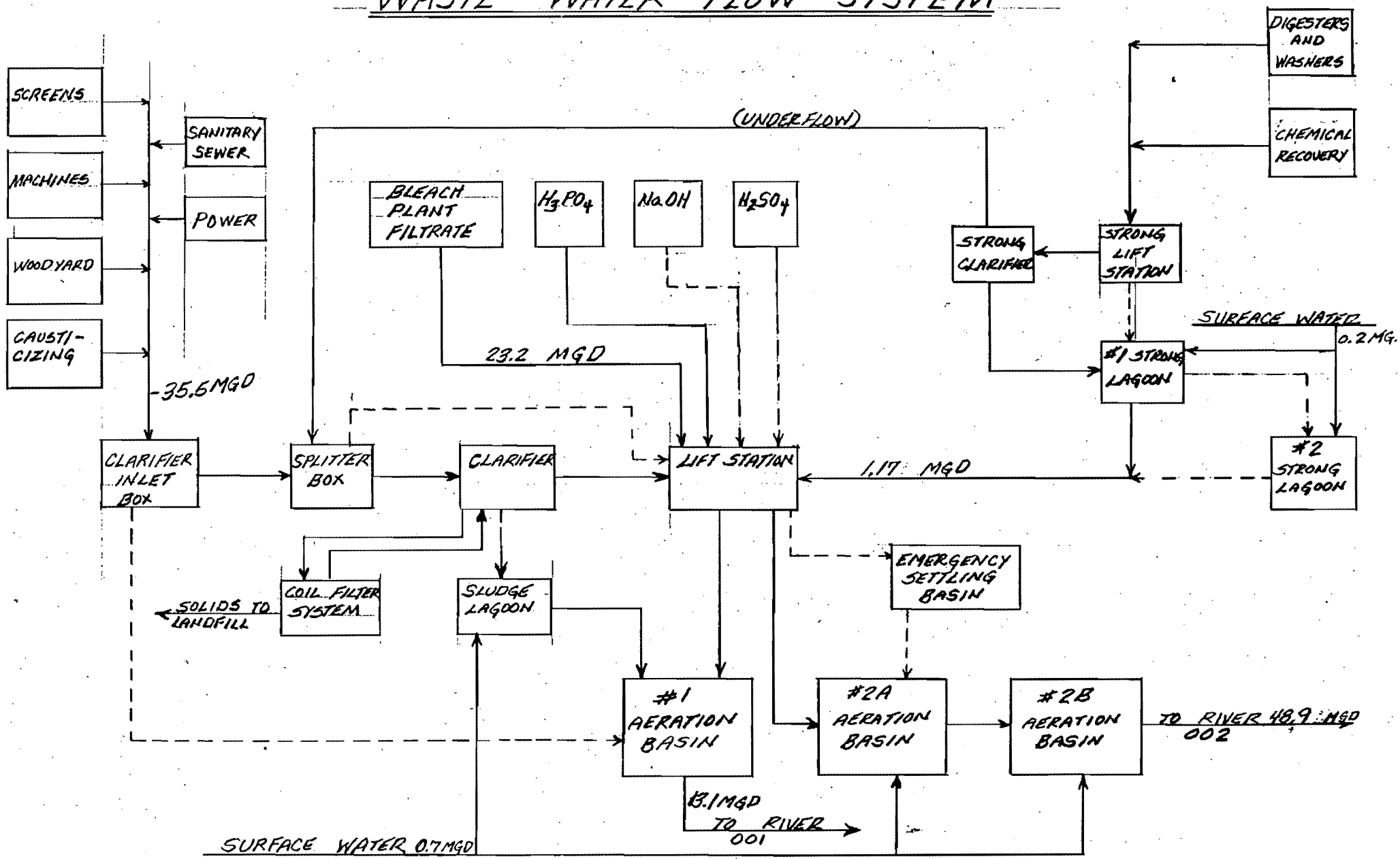
Total Polychlorinated Dibenzo Dioxins/Furans GC/MS Analysis Data (QR61)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
R1142	ITT RAYONIER	ITTJESPCDX	0#2 OUTFALL	870203	1000	

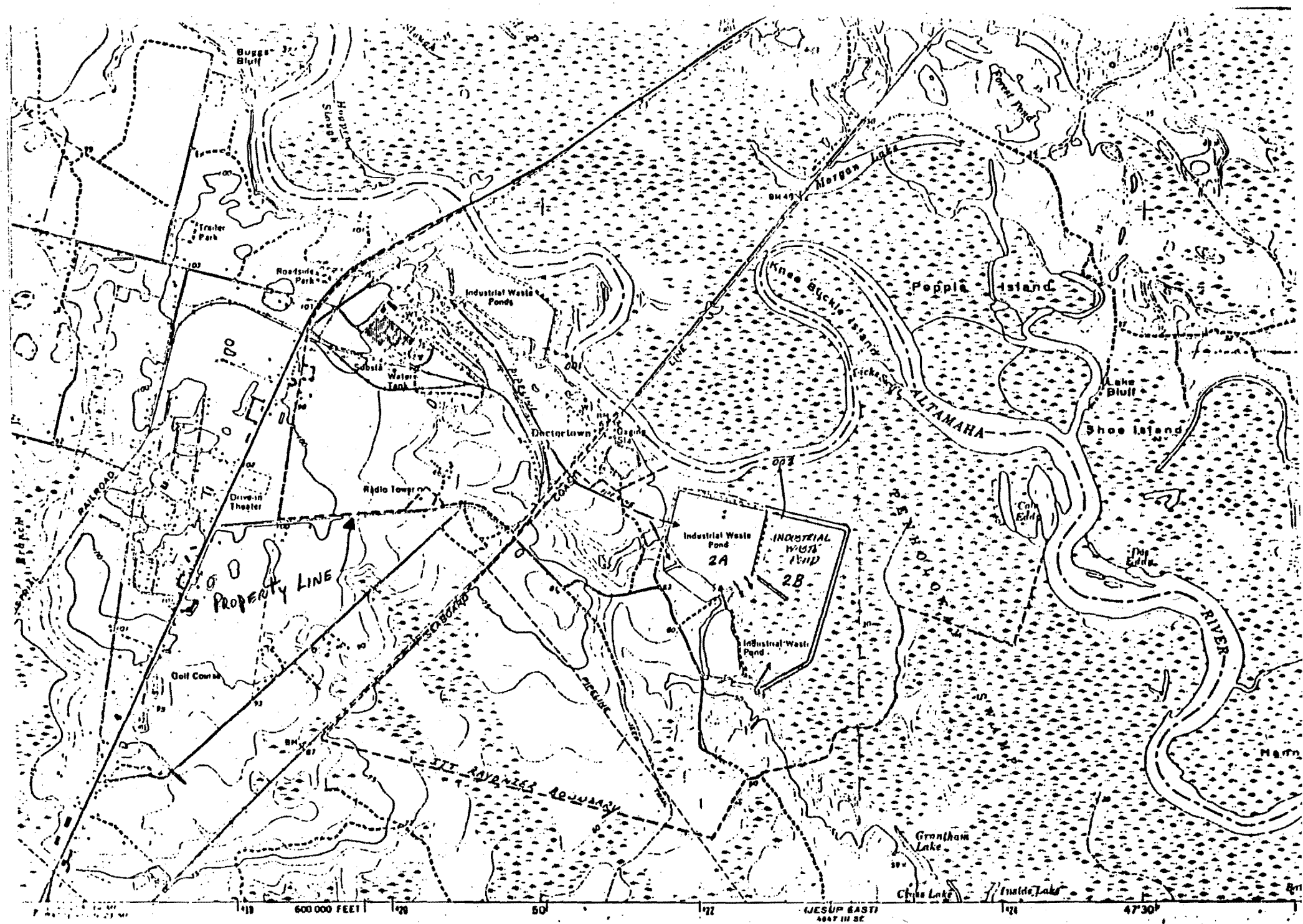
Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ppt	MDL ppt	First ppt	Second ppt	Blank Data ppt	Concen. Added ppt	% Recov	Unspiked Sample ppt	Concen. Added ppt	% Recov
TCDD	ND	.45	ND	ND	ND	10	103	ND	10	104
PCDD	ND	.15	ND	ND	ND	10	101	ND	10	100
HxCDD	ND	.41	ND	ND	ND	10	104	ND	10	106
HpCDD	ND	.18	ND	ND	ND	10	103	ND	10	100
OCDD	ND	1.1	ND	ND	ND	10	93	ND	10	115
TCDF	ND	.36	ND	ND	ND	10	104	ND	10	103
PCDF	ND	.09	ND	ND	ND	10	101	ND	10	102
HxCDF	ND	.10	ND	ND	ND	10	101	ND	10	99
HpCDF	ND	.12	ND	ND	ND	10	103	ND	10	104
OCDF	ND	1.3	ND	ND	ND	10	98	ND	10	97
2,3,7,8-TCDD	ND	.45	ND	ND	ND	10	103	ND	10	104
2,3,7,8-TCDF	ND	.36	ND	ND	ND	10	104	ND	10	103

WASTE WATER FLOW SYSTEM



JESUP DIVISION JESUP GEORGIA

REV. 7-6-87



and published by the Geological Survey
USC&GS
metric methods from aerial photographs
1970
licks: Georgia coordinate

JOE D. TANNER
Commissioner

J. LEONARD LEDBETTER
Division Director

Department of Natural Resources

ENVIRONMENTAL PROTECTION DIVISION
270 WASHINGTON STREET, S.W.
ATLANTA, GEORGIA 30334

December 19, 1980

Mr. R. A. McCrary
Manager of Environmental Affairs
ITT Rayonier, Inc.
P. O. Box 207
Jesup, GA 31545

Dear Mr. McCrary:

Based on the information provided in your December 11 letter, we concur that the uncontaminated surface runoff into ditches at the rear of your mill site should not be considered a point source discharge requiring an NPDES permit at this time. This runoff discharge does not need to be listed in the NPDES permit application.

If you have any questions, please give me a call.

Sincerely,

William M. Jernigan, P.E.
Program Manager
Industrial Wastewater Program

WMJ:mck

AN AFFIRMATIVE ACTION/EQUAL EMPLOYMENT OPPORTUNITY EMPLOYER

Rayonier Lake is used as a recreational area and there are fish in the Lake. When the lake overflows it drains into the Altamaha River. Due to the apparent good condition of this lake it is not anticipated that the runoff from the area in question poses a dishcarge problem to warrent it being listed as a problem to the environment.

If you concur that the discharge does not need to be listed as a point source, we propose to list only the discharge of process water from our two effluent treatment systems. A response to this proposal will be appreciated.

Very truly yours,

ITT RAYONIER INC.

R. A. McCrary

R. A. McCrary
Manager of Environmental
Affairs/Pulp Products
Southeastern Operations

RAM:rsb

RAM

ITT Rayonier Inc.
Jesup Division
Post Office Box 207
Jesup, Georgia 31545
(912) 427-2061

December 11, 1980

Mr. William Jernigan
Program Manager
Industrial Waterwaste Program
Environmental Protection Division
280 Washington St., S.W.
Atlanta, Georgia 30334

Dear Mr. Jernigan:

As we discussed with you today, we are concerned about the possibility of surface runoff into ditches on the rear of our mill site being considered a point source requiring NPDES permitting. This runoff develops over an area exposed to the following:

1) Mainly a grassed sandhill with one hardwood stand.

2) Various types of equipment are stored in the area of runoff.

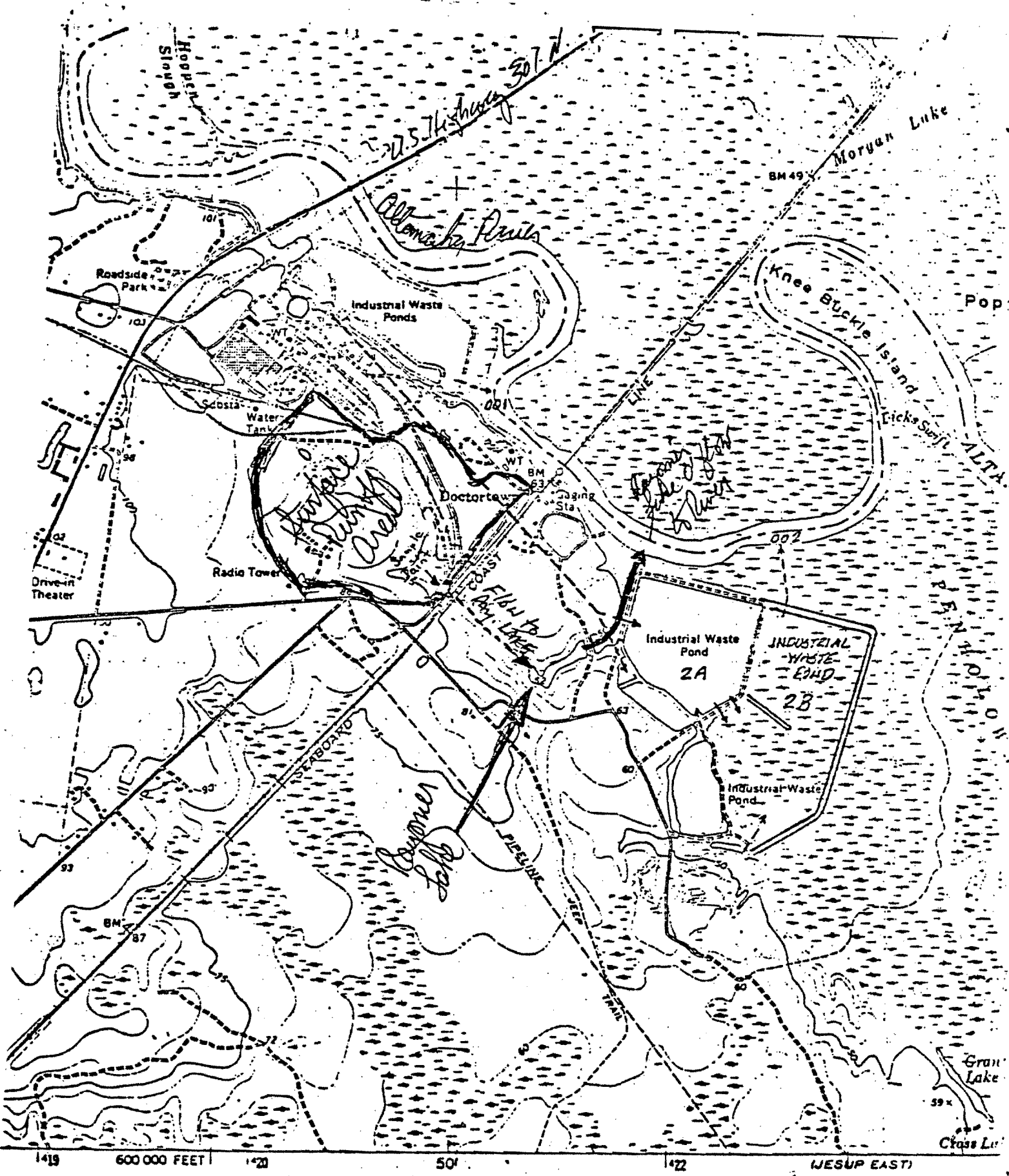
3) Some bark, knots, lime and flume dirt were stored on this area some years ago. With the exception of the disposal of flume dirt the area has been inactive for years as a disposal site.

You will find attached a map indicating the basic site under consideration.

We have obtained limited tests on this area. The tests show the following results. The sample was taken at the point the flow comes together prior to going under the public county road and railroad as it flows toward Rayonier Lake.

	December 1, 1980	December 4, 1980
BOD (mg/l)	4	6
TSS (mg/l)	2	1
pH	7.1	7.1
Temperature (°C)	19	19
Estimated Flow (gpm)	40	40

Continued.....



SCALE 1:24 000

1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 5 FEET
DATUM IS MEAN SEA LEVEL

12/10/80

SUMMARY OF COLD WEATHER ALTAMAHA RIVER TESTING

DATE(S)	RIVER FLOW (CFS)	RIVER STATION "D"		RIVER STATION "E"		RIVER STATION "F"		TEMP.
		DO (mg/l)	BOD_5 (mg/l)	DO (mg/l)	BOD_5 (mg/l)	DO (mg/l)	BOD_5 (mg/l)	°C
3/16,17/82	54,000	8.4	1.2	8.3	1.7	7.9	2.3	14
4/12,13/83	50,000	7.4	0.1	8.4	0.5	7.9	0.4	18
11/17,18,19/83	3100	9.8	0.5	9.3	0.9	9.4	1.2	14
1/19/84	19,500	6.2	1.7	6.3	1.5	6.0	1.8	9
2/10/84	30,250	6.5	1.1	6.6	1.3	6.7	1.2	9
2/29/84	29,000	8.7	0.7	8.9	1.2	9.0	1.0	11
3/7/84	43,000	8.7	0.9	8.6	1.2	7.6	1.4	14
3/26,27/84	51,500	7.2	1.6	6.8	2.6	6.3	2.4	18
4/12,13/84	38,500	6.6	0.3	6.7	1.3	6.2	1.6	17
11/6,7,8/84	4150	8.4	0.8	8.1	2.0	7.7	1.0	19
11/27,28/84	2900	7.8	1.1	7.3	1.5	6.7	1.6	14

STATION "D" - U.S. HIGHWAY BRIDGE NORTH OF JESUP

STATION "E" - 20.1 MILES DOWNSTREAM OF STATION "D"

STATION "F" - 37.7 MILES DOWNSTREAM OF STATION "D"

02226160 ALTAMAHA RIVER NEAR EVERETT CITY, GA.—Continued

OXYGEN, DISSOLVED (OO), MG/L, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.4	6.6	8.5	8.2	8.3	7.7	8.5	7.6	10.3	9.7	9.3	8.6
2	7.3	6.5	8.6	8.3	8.2	7.6	8.7	8.1	9.8	9.3	9.5	8.4
3	7.3	6.6	8.7	8.4	8.1	7.4	8.8	8.1	9.3	8.2	9.3	8.3
4	7.6	6.5	8.6	8.3	8.1	7.2	8.5	8.1	9.5	8.2	9.2	8.3
5	7.2	6.5	8.6	8.3	8.0	7.4	8.8	8.4	9.5	8.6	9.0	8.3
6	7.1	6.3	8.5	8.3	7.8	7.4	8.9	8.3	9.6	9.0	8.5	7.2
7	7.2	6.4	9.0	8.7	8.0	7.7	9.1	8.2	9.1	8.4	8.3	7.3
8	7.1	6.4	9.1	8.9	8.1	8.0	9.3	8.6	9.3	8.1	8.0	7.1
9	7.0	6.3	9.2	9.0	8.2	7.9	9.3	9.1	9.5	8.4	7.9	7.2
10	6.5	6.0	9.2	9.0	8.1	7.9	9.4	9.0	9.6	8.9	7.8	7.0
11	6.6	5.9	9.5	8.7	8.3	8.0	9.6	9.1	9.4	8.9	8.3	7.1
12	6.2	5.8	9.2	8.6	8.3	7.8	9.6	9.2	9.4	8.9	8.8	7.2
13	6.4	5.7	9.2	8.1	8.2	7.5	10.1	9.1	9.8	9.3	8.9	7.3
14	6.8	6.0	9.1	8.0	8.9	7.8	10.5	9.5	10.1	9.5	8.9	7.4
15	7.2	6.3	9.2	8.2	9.3	8.8	10.7	10.2	10.0	9.2	8.7	7.6
16	7.4	6.5	9.1	8.0	9.0	8.4	10.8	9.9	9.9	9.3	8.3	7.6
17	7.8	6.8	9.1	8.4	8.8	8.0	10.9	10.0	9.6	8.8	8.4	7.4
18	8.1	7.1	9.1	8.4	9.3	8.0	11.0	10.0	9.5	8.7	8.2	7.3
19	7.9	7.2	9.0	8.3	9.4	8.3	11.1	10.2	9.5	8.6	8.3	7.2
20	7.8	7.4	8.9	8.2	9.0	8.3	11.1	10.8	9.3	8.7	8.4	7.3
21	7.9	7.4	9.0	8.1	9.5	8.9	11.5	11.0	9.1	8.6	8.1	7.3
22	8.0	7.6	8.9	8.0	10.0	8.7	11.5	11.0	9.1	8.7	8.6	7.4
23	7.8	7.7	8.7	8.0	10.3	9.3	11.3	10.7	8.8	8.4	9.0	7.6
24	---	---	8.6	8.0	10.1	9.5	11.3	10.4	8.9	8.4	---	---
25	8.1	7.3	8.4	8.0	9.7	9.1	11.2	10.4	9.0	8.3	---	---
26	8.2	7.9	8.4	8.1	9.5	8.9	11.1	10.1	9.0	8.2	---	---
27	8.4	8.0	8.5	8.2	9.0	8.6	10.9	10.5	9.2	8.6	---	---
28	8.2	8.0	8.4	8.2	8.7	8.0	10.8	10.2	9.4	8.8	8.7	8.2
29	8.3	8.0	8.4	7.9	8.2	7.6	10.9	10.1	---	---	9.1	7.9
30	8.2	8.0	8.3	7.8	8.0	7.7	10.8	10.2	---	---	9.0	8.2
31	8.3	8.0	---	---	8.1	7.7	10.5	10.0	---	---	8.8	8.1
MONTH	8.4	5.7	9.5	7.8	10.3	7.2	11.5	7.6	10.3	8.1	9.5	7.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.6	7.8	7.1	6.4	7.1	6.4	6.2	5.5	6.5	6.3	5.4	5.0
2	8.4	7.3	7.0	6.2	7.7	6.5	6.3	5.4	6.9	6.3	5.2	5.0
3	8.8	7.0	6.9	6.3	7.5	6.8	6.2	5.6	6.5	5.1	5.5	5.1
4	8.7	7.4	6.6	6.0	7.5	6.9	6.3	5.1	6.4	6.0	5.6	4.9
5	8.2	7.5	6.5	5.9	7.5	6.5	6.0	5.3	6.7	6.1	5.7	5.0
6	7.8	7.3	6.7	5.9	7.4	6.7	6.6	6.0	6.3	5.7	5.9	5.1
7	7.4	6.7	6.8	6.0	7.1	6.7	6.5	6.0	6.0	5.5	6.5	5.3
8	6.9	6.5	6.7	6.2	7.1	6.3	6.2	5.8	6.0	5.3	---	---
9	6.6	6.3	6.6	5.7	7.4	6.4	6.2	5.8	5.9	5.2	---	---
10	7.2	6.1	6.1	5.7	8.3	6.8	6.1	5.7	6.0	5.3	---	---
11	7.5	6.5	6.4	5.8	7.7	6.8	6.3	5.8	6.5	5.3	---	---
12	7.5	6.7	6.6	6.0	7.4	7.0	6.1	5.7	6.2	5.2	---	---
13	7.3	6.6	6.7	6.1	7.3	6.9	6.2	5.8	6.0	5.1	---	---
14	7.1	6.4	6.8	6.1	7.3	6.7	6.0	5.5	5.4	5.2	---	---
15	6.8	6.1	6.9	6.3	8.0	6.7	6.1	5.6	---	---	---	---
16	7.0	6.0	6.8	6.3	7.3	6.7	6.2	5.7	---	---	---	---
17	7.2	6.3	6.8	6.5	7.2	6.6	6.1	5.6	---	---	---	---
18	7.1	6.6	7.2	6.7	7.3	6.6	6.1	5.6	---	---	---	---
19	7.2	6.5	7.3	6.8	7.2	6.7	6.0	5.4	---	---	6.3	5.7
20	7.6	6.7	7.0	6.5	7.1	6.7	6.0	5.2	---	---	6.3	5.6
21	7.8	6.9	7.2	6.5	7.4	6.7	5.7	5.1	---	---	6.3	5.5
22	7.9	7.2	7.2	6.6	7.1	6.5	6.0	5.1	---	---	6.6	5.6
23	7.8	7.2	7.0	6.6	6.7	6.3	6.3	5.5	---	---	6.9	5.7
24	7.4	7.2	7.1	6.5	7.0	6.2	5.9	5.4	6.9	5.5	7.0	5.8
25	7.5	6.6	7.1	6.4	7.1	6.3	6.0	5.1	7.1	5.8	7.0	5.9
26	7.4	6.5	7.0	6.4	---	---	6.0	5.1	6.4	5.8	6.8	5.8
27	7.3	6.6	7.1	6.3	---	---	6.1	5.1	6.3	5.3	7.0	5.8
28	7.4	6.6	7.1	6.4	---	---	6.2	5.3	6.1	5.2	6.9	6.0
29	7.2	6.5	7.2	6.4	---	---	6.0	5.3	6.2	5.2	6.7	6.0
30	7.1	6.4	7.1	6.5	5.9	5.4	---	---	5.6	5.2	6.9	6.0
31	---	---	7.1	6.4	---	---	---	---	5.4	5.0	---	---
MONTH	8.8	6.0	7.3	5.7	8.3	5.4	6.6	5.1	7.1	5.0	7.0	4.9
YEAR	11.5	4.9										

ALTAMAHA RIVER AT EVERETT CITY, GA—Continued

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	6.5	6.0	8.0	7.5	—	—	11.0	10.6	9.1	8.8	9.2	8.4
2	6.6	6.0	8.3	7.5	—	—	11.1	10.6	9.2	9.0	9.4	9.0
3	6.6	6.0	8.1	7.3	8.1	7.9	11.2	10.6	9.1	8.8	9.4	9.1
4	6.8	6.1	8.0	7.2	7.9	7.5	11.0	10.4	9.0	8.6	9.2	8.9
5	6.8	6.0	8.0	7.3	7.5	7.1	10.7	10.2	8.7	8.3	8.9	8.7
6	6.8	6.0	7.8	7.1	7.4	6.9	10.6	10.2	—	—	8.8	7.9
7	7.1	6.1	7.9	7.2	7.0	6.6	10.5	10.0	—	—	8.0	7.1
8	7.2	6.1	8.2	7.6	7.2	6.7	10.4	10.0	—	—	7.6	6.7
9	7.1	6.3	8.2	7.2	7.4	7.0	10.4	9.9	—	—	7.8	7.2
10	7.6	6.4	8.1	7.2	7.6	7.2	10.2	9.8	—	—	7.9	7.5
11	7.6	6.6	8.1	7.5	7.8	7.3	9.8	9.0	—	—	8.1	7.6
12	7.6	6.6	8.1	7.7	7.6	7.1	9.5	9.0	—	—	8.2	7.6
13	7.6	7.0	8.4	7.9	7.2	6.5	9.7	9.2	—	—	8.0	7.6
14	7.3	6.8	8.4	7.9	7.2	6.6	9.8	9.3	8.7	8.1	8.2	7.6
15	7.7	7.0	8.4	7.8	7.4	7.0	9.8	9.4	8.3	7.9	8.1	7.3
16	7.7	7.1	8.3	7.9	7.7	7.1	9.7	9.3	8.3	7.8	7.8	7.4
17	8.0	7.4	8.5	8.0	8.0	7.5	9.5	9.1	8.3	7.9	7.7	6.8
18	8.0	7.5	8.5	7.9	8.3	7.8	9.5	9.2	8.1	7.8	7.7	6.8
19	8.3	7.5	8.7	8.0	8.5	8.2	9.3	8.7	8.0	7.7	8.0	7.1
20	8.1	7.4	8.5	8.0	8.7	8.4	8.8	8.6	7.8	7.4	7.8	7.2
21	7.6	7.0	8.7	7.9	9.1	8.1	9.2	8.6	7.6	7.2	7.1	6.8
22	7.5	6.9	8.7	8.1	9.0	8.5	9.6	9.0	7.7	7.3	7.4	6.9
23	7.9	6.8	8.9	8.3	9.0	8.6	9.8	9.3	7.6	7.2	7.4	7.0
24	7.7	7.1	—	—	9.1	8.6	9.8	9.4	8.0	7.3	7.2	6.9
25	7.8	6.9	—	—	9.4	8.8	9.5	8.9	8.4	7.9	7.0	6.7
26	7.7	6.9	—	—	10.2	9.6	9.1	8.8	8.5	8.1	6.7	6.5
27	7.7	6.9	—	—	10.7	10.1	9.1	8.5	8.7	7.7	6.6	6.3
28	7.8	7.0	—	—	10.8	10.5	9.1	8.5	8.1	7.5	6.5	5.9
29	7.8	7.3	—	—	10.8	10.3	8.9	8.2	8.6	7.8	6.1	5.8
30	7.8	7.4	—	—	10.4	10.1	8.6	8.1	—	—	6.6	6.0
31	7.9	7.5	—	—	10.7	10.2	8.8	8.5	—	—	7.0	6.5
MONTH	8.3	6.0	8.9	7.1	10.8	6.5	11.2	8.1	9.2	7.2	9.4	5.8

26,600 CFS

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.2	6.9	6.5	5.7	6.7	6.2	6.4	5.3	—	—	6.5	6.0
2	7.3	7.0	6.1	5.4	6.9	6.3	6.5	5.3	5.2	4.8	6.7	6.2
3	7.5	7.3	5.7	5.2	6.7	5.9	7.3	5.3	5.2	4.7	7.0	6.4
4	7.4	6.7	5.9	5.3	6.5	5.2	7.1	5.2	5.7	4.9	7.2	6.6
5	7.0	6.5	5.7	5.1	6.2	5.4	5.9	4.8	5.7	5.2	6.8	6.6
6	6.9	6.6	6.6	5.2	6.6	5.7	5.5	4.8	5.5	5.1	7.3	6.6
7	7.0	6.7	6.3	5.4	7.1	5.8	5.4	4.7	5.6	5.1	7.7	7.0
8	7.2	7.0	6.5	5.5	6.8	6.0	5.3	4.8	5.3	4.6	7.7	7.2
9	7.2	6.8	6.4	5.7	6.8	6.1	5.4	4.9	5.4	4.9	7.6	7.3
10	7.0	6.7	6.4	5.7	6.6	6.0	5.9	5.2	5.4	5.0	7.5	7.1
11	7.1	6.8	6.5	5.7	6.9	6.0	5.9	4.9	5.4	5.0	7.6	7.1
12	7.4	6.8	7.8	5.4	6.5	6.2	6.0	4.8	5.5	5.2	7.7	7.0
13	7.4	7.1	8.7	5.8	6.2	5.8	6.3	5.3	5.5	5.0	8.0	7.0
14	7.4	6.8	6.2	5.9	6.3	5.8	6.3	5.2	5.3	5.0	8.2	7.1
15	6.9	6.6	6.2	6.0	6.8	5.6	6.2	5.4	5.6	5.0	8.0	7.0
16	6.8	6.5	6.3	5.6	5.8	5.3	6.2	5.4	5.6	5.2	7.1	6.8
17	7.2	6.5	6.1	5.6	5.9	5.1	6.3	5.2	5.5	5.2	7.3	6.9
18	7.2	6.9	6.2	5.6	5.5	5.0	6.3	5.4	—	—	7.7	7.2
19	7.3	7.0	6.2	5.3	5.3	4.9	6.2	5.6	—	—	8.2	7.6
20	7.3	6.9	5.7	5.1	5.5	4.8	6.0	5.7	5.5	5.0	8.0	7.7
21	7.2	6.8	5.7	4.8	6.0	4.9	6.3	5.8	5.7	5.4	7.8	7.5
22	7.0	6.7	5.6	5.0	5.9	5.4	6.7	5.9	5.7	5.0	7.8	7.4
23	6.7	6.3	5.7	5.1	5.8	5.4	6.3	5.1	5.8	5.5	7.7	7.3
24	6.6	6.1	5.7	5.3	6.7	5.3	5.5	5.1	5.9	5.7	7.7	7.2
25	6.7	6.3	6.4	5.3	5.9	5.0	5.6	5.0	5.9	5.7	7.9	7.3
26	6.8	6.4	6.3	5.0	5.7	4.9	5.5	5.0	6.0	5.7	7.9	7.2
27	6.9	6.2	5.2	4.8	5.6	5.0	5.6	5.0	6.0	5.8	7.9	7.2
28	7.3	6.0	5.1	4.8	6.4	5.2	5.7	5.3	6.2	5.9	8.3	7.4
29	8.1	6.6	5.3	4.9	5.7	5.0	5.8	5.4	6.3	6.0	8.3	7.6
30	7.3	6.2	5.6	5.4	5.8	5.1	6.3	5.6	6.3	5.9	8.2	7.7
31	---	---	6.2	5.7	---	---	---	---	6.4	6.0	---	---
MONTH	8.1	6.0	8.7	4.8	7.1	4.8	7.3	4.7	6.4	4.6	8.3	6.0
YEAR	11.2	4.6										

02226160 ALTAMAHA RIVER AT EVERETT CITY, GA.--Continued

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.0	7.3	6.1	5.7	8.3	8.0	---	---	11.5	11.1	6.8	6.6
2	7.7	7.3	6.0	5.8	8.4	7.9	---	---	11.0	10.6	6.8	6.5
3	7.9	7.4	6.4	5.7	8.2	7.8	---	---	10.6	10.2	7.0	6.7
4	7.8	7.5	6.2	6.0	8.2	7.8	---	---	10.3	10.1	7.1	6.9
5	7.7	7.4	6.4	6.0	8.4	8.0	---	---	10.2	9.9	7.1	6.7
6	7.6	7.3	6.7	6.1	8.5	8.1	---	---	10.1	9.7	7.0	6.8
7	7.6	7.2	7.0	6.4	8.9	8.3	9.2	8.8	10.1	9.6	7.4	7.0
8	7.5	7.1	7.4	6.7	9.3	8.6	9.6	9.1	10.2	9.8	7.5	7.3
9	7.6	6.9	7.9	6.9	9.6	9.1	10.1	9.6	10.2	9.7	7.5	6.9
10	7.6	6.9	8.0	7.4	9.8	9.3	10.2	9.8	10.0	9.7	7.2	7.0
11	7.8	7.0	8.1	7.4	9.6	9.3	10.1	9.7	9.7	9.5	7.3	7.1
12	7.6	6.9	8.0	7.5	9.3	8.9	10.1	9.6	9.4	9.1	7.4	6.9
13	7.5	6.6	8.0	7.5	9.1	8.6	10.1	9.7	9.6	9.0	7.1	6.9
14	7.5	6.7	8.0	7.4	9.0	8.6	10.2	9.9	9.5	9.3	7.2	6.9
15	7.1	6.6	8.0	7.5	8.9	8.6	10.4	10.1	9.6	9.2	7.1	6.8
16	7.1	6.6	8.9	7.8	8.8	8.3	10.6	10.1	9.5	9.1	7.1	6.8
17	6.9	6.4	8.7	8.3	8.7	8.3	10.7	10.3	9.6	9.3	7.2	6.9
18	6.7	6.3	8.4	8.1	8.8	8.3	10.6	10.3	9.6	9.3	7.6	7.1
19	6.5	6.2	8.5	8.1	8.9	8.4	10.7	10.2	9.7	9.4	7.8	7.3
20	6.4	5.9	8.3	8.0	8.8	8.3	10.7	10.2	9.5	8.9	8.1	7.7
21	6.4	6.0	8.3	7.8	8.7	8.2	10.8	10.3	9.3	8.9	8.1	7.8
22	6.5	5.8	8.4	8.1	8.6	8.1	11.6	10.8	9.1	8.6	7.8	7.3
23	6.6	5.9	8.7	8.0	8.8	8.1	11.7	11.3	8.9	8.4	7.6	7.3
24	6.8	5.9	8.5	8.0	8.5	8.1	11.8	11.3	8.7	8.1	7.7	7.3
25	6.8	6.0	8.5	7.8	---	---	12.1	11.7	8.2	7.8	7.6	7.2
26	6.8	6.1	8.5	7.9	---	---	12.2	11.8	7.8	7.2	7.6	7.2
27	6.4	5.9	8.9	7.9	---	---	12.4	11.8	7.4	6.7	7.7	7.3
28	6.2	5.5	8.8	8.2	---	---	12.5	11.9	6.9	6.5	7.6	7.2
29	6.2	5.6	8.4	7.9	---	---	12.2	11.6	---	---	7.5	7.1
30	6.5	5.6	8.3	7.9	---	---	12.0	11.7	---	---	7.3	7.1
31	6.1	5.7	---	---	---	---	11.9	11.5	---	---	7.3	7.0
MONTH	8.0	5.5	8.9	5.7	9.8	7.8	12.5	8.8	11.5	6.5	8.1	6.5

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.1	6.4	7.4	6.7	7.0	6.6	5.6	5.2	6.1	5.2	6.0	5.4
2	7.0	6.4	7.2	6.7	7.0	5.7	5.9	5.0	6.2	5.8	5.6	5.2
3	7.3	6.6	7.1	6.6	5.5	4.9	6.0	5.0	6.0	5.6	5.5	5.0
4	7.6	6.9	7.1	6.4	5.2	4.7	6.9	5.3	6.0	5.5	5.4	4.7
5	7.7	7.0	6.9	6.5	5.1	4.5	6.7	5.4	6.0	5.7	5.2	4.8
6	7.4	7.0	6.9	6.5	---	---	---	---	6.1	5.8	5.0	4.8
7	7.4	6.8	6.9	6.5	---	---	---	---	6.1	5.8	5.2	4.5
8	7.4	6.9	6.8	6.4	---	---	6.3	5.3	6.1	5.8	5.4	4.5
9	7.5	6.9	6.8	6.4	---	---	6.8	5.7	6.1	5.8	5.2	4.9
10	7.7	7.1	6.6	6.4	5.4	4.8	6.7	6.0	6.0	5.7	5.1	4.6
11	7.7	7.3	6.6	6.2	5.0	4.7	6.9	6.4	5.9	5.5	4.9	4.6
12	7.6	7.4	6.3	6.0	---	---	7.0	6.2	5.6	5.2	5.4	5.0
13	7.6	7.4	6.2	5.9	---	---	6.8	6.3	5.4	5.2	6.0	5.3
14	7.4	7.3	6.1	5.8	---	---	6.6	5.5	5.4	5.2	5.9	5.3
15	7.3	6.9	6.1	5.8	---	---	6.0	5.1	5.4	5.2	6.3	5.8
16	7.2	6.8	6.1	5.8	---	---	6.4	5.4	5.5	5.0	6.2	5.9
17	7.2	6.8	6.2	5.9	---	---	6.3	5.5	5.6	5.2	6.2	5.8
18	7.2	6.8	6.4	5.8	6.2	5.4	6.3	5.6	5.8	5.3	6.3	5.8
19	7.1	6.6	6.5	6.0	5.9	5.4	6.6	5.7	5.8	5.0	6.3	5.8
20	6.9	6.6	6.3	6.1	5.6	5.2	6.7	6.1	5.7	5.0	6.3	5.8
21	6.9	6.5	6.3	5.8	5.6	5.0	7.3	6.0	5.6	5.2	6.0	5.7
22	6.9	6.5	6.3	5.9	6.1	5.2	6.9	5.5	5.9	5.3	6.1	5.7
23	6.9	6.5	6.3	5.9	5.9	5.3	6.4	5.2	5.7	5.2	6.2	5.6
24	7.1	6.6	6.4	5.9	6.1	5.2	6.1	5.2	5.8	5.2	6.3	5.7
25	7.1	6.6	6.4	6.0	6.5	5.6	5.9	5.4	---	---	6.2	5.9
26	7.0	6.6	6.5	6.1	6.5	5.4	6.3	5.6	5.6	5.4	6.5	6.0
27	7.0	6.5	6.5	6.0	6.3	5.6	6.3	5.7	6.5	5.5	6.4	5.9
28	6.9	6.5	6.8	6.1	6.0	5.4	6.0	5.6	6.6	5.9	6.4	5.9
29	7.1	6.5	6.9	6.5	6.3	5.2	5.8	5.4	6.1	5.7	6.7	6.2
30	7.2	6.6	7.0	6.5	5.9	5.3	5.5	5.1	6.3	5.4	6.4	5.9
31	---	---	7.0	6.6	---	---	5.6	5.1	6.1	5.8	---	---
MONTH	7.7	6.4	7.4	5.8	7.0	4.5	7.3	5.0	6.6	5.0	6.7	4.5
YEAR	12.5	4.5										

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

JUL 31 1989

REF: 4WM-FP

Mr. Jack C. Dozier, P.E., Chief
Water Protection Branch
Environmental Protection Division
Georgia Department of Natural Resources
Floyd Towers East - Room 1058
205 Butler Street, S.E.
Atlanta, Georgia 30334

RE: ITT Rayonier, Inc.
NPDES Permit Number GA0003620

Dear Mr. Dozier:

We have completed our review of the draft permit modification and the June 29, 1989, supplemental information for the referenced facility. Because this facility has been included, in accordance with Section 304(l) of the Clean Water Act, on a list of point sources causing toxic impact on its receiving waters, and because the permit modification relates only to requirements for control of 2,3,7,8-TCDD, our review was generally restricted to approvability as an individual control strategy (ICS).

This is to advise you that the proposed modification does <u>not</u> appear to be an approvable ICS. Our determination is based on the following:

1. The statement, found on page 2b of the permit modification, concerning 2,3,7,8-TCDD's generally accepted level of detection and its usage as the threshold for determining compliance/noncompliance with the permit's discharge limitation is not acceptable because it fails to allow reporting of quantifiable concentrations of 2,3,7,8-TCDD at levels less than a stated minimum. This determination is based on the fact that the methodology of analysis is, in certain cases, capable of determining the presence of the pollutant of concern in a quantity less than that generally accepted as the least detectable.

   It is recommended that the language be modified. The following has been used in an NPDES permit proposed by EPA and may be considered:

   If the results for a given sample are such that a parameter is not detected at or above the minimum quantitation level for the test method used, a value of zero will be used for that sample in calculating an average arithmetic effluent value for that parameter.

No formal response
Revised draft mod. dated 1/4/90
received 1/11/90

A final decision concerning approval/disapproval will be made after issuance of the permit modification, and no later than February 4, 1990. If the final permit is disapproved as an ICS, EPA will exercise its authority under Section 304(l)(3) to issue the required permit.

In addition to comments concerning the matter of approvability as an ICS, the following are offered:

* 1. There are no specific best management practices (BMP's) written into the permit. Of particular recommendation would be BMP's directed at control of 2,3,7,8-TCDD found in the facility's effluent and sludge. These point sources indicating detectable quantities of the pollutant during the recent U.S. EPA/Paper Industry Cooperative Dioxin Study.

2. The 2,3,7,8-TCDD limitation to be met by the facility in the future should be mentioned in Section 2 of the fact sheet.

* 3. The study plan to conduct dioxin monitoring, referenced on Page 12a of the permit, has been evaluated by the Environmental Services Division, Ecological Support Branch. It is recommended that this plan should be revised to correct several deficiencies noted during that review. (For your information, a copy of the internal memorandum of review is enclosed.) It is requested that a copy of the final report of the 1989 dioxin monitoring program be submitted to this office as soon as available.

If you have any questions, please call Yvonne Martin at 347-3012.

Sincerely yours,

JTM

John T. Marlar, Chief
Facilities Performance Branch
Water Management Division

Enclosure

Martin JTM 7/31 Childress KC 7/31 Patrick MP 7/31

GEORGIA

FISCAL YEAR 1989 NPDES PERMIT REVIEW

FACILITY: ITT Rayonier, Inc.

NPDES No: GA 0003620

APPLICATION DRAFT (20 days) X FINAL (15 working days)

____ NEW (10 days)

____ MAJOR INDUSTRIAL

____ MAJOR MUNICIPAL

____ MINOR PRIMARY

X MODIFICATION (circle one: Major Ind/Mun. or Minor Pri)

ROUTING:
1. DATE RECEIVED 6/12/89
2. UNIT CHIEF
3. ASSIGNED TO JYM DUE 6/30/89 8/1/89
4. UNIT CHIEF (If Problems)
5. PERMITS CLERK
6. FILES

Permit expires 12/1/92.

COMMENTS: Copy to WQ 6/13/89 & returned 6/13/89
have annual avg. flow data dilution factor in documentation
Request rationale for modification, Study Plan referenced on pg 12a; Ann. Avg. flow
Received 6/30/89

Numerous questions in guidances.

Questions: Per data on chart, limit is 8.666 ppq. (This is annual avg. data)

* Put dioxin in Section 2 of F.S.

* Strongly recommend specific BMPs be made part of permit - Study shows eff. & sludge det. quantities & pulp WD. FS

** OBJECTION: Putting 10 ppq as "threshold" value on pg 2b

ACTION TO BE TAKEN: ~~OBJECTION~~ Not approvable ICS LETTER Drafted: 7/17 Mailed: 7/31

Y Martin
COMPLETED BY

7/31/89
DATE

Georgia Department of Natural Resources
205 Butler Street, S.E., Suite 1252, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
404/656-3500

June 1, 1989

Mr. Robert A. McCrary
Manager of Environmental Affairs/Pulp Products
Southeastern Operations
ITT Rayonier, Inc.
P. O. Box 207
Jesup, Georgia 31545-0207

Re: NPDES Permit No. GA 0003620
Dioxin Limitations

Dear Mr. McCrary:

The Department of Natural Resources has completed the review of the dioxin data collected for the five Georgia bleached kraft pulp and paper mills in conjunction with the U. S. EPA National Bioaccumulation Study and the U. S. EPA/Paper Industry Cooperative Dioxin Study. On April 20, 1989, the U. S. EPA transmitted their March 15, 1989 National Final Guidance (copy enclosed for your information). Based upon the discharge flows from your mill and estimated receiving stream flows, the calculated dioxin instream waste concentration exceeds the national guidance criteria which is based on a 10^{-6} human health risk level.

To comply with the national guidance on dioxin, this Department is proposing the following:

a. All five bleached kraft pulp mills will be placed on the Section 304(1) Short List which defines the point source dischargers of toxic chemicals that exceed water quality standards.

b. The NPDES permits will be reopened to assign the new water quality-based permit limit for dioxin. The proposed maximum daily limit is based upon the EPA 10^{-6} human health criteria as specified above. In addition, EPA Region IV has transmitted an interim control guidance policy which recommends that Best Management Practices (BMP's) be implemented to minimize chlorine and total suspended solids levels. It is suggested that you implement these Best Management Practices to the extent practicable for your facility.

c. In addition, language has been inserted into the NPDES permit to require the continued monitoring of dioxin levels in fish tissue, in accordance with the uniform fish sampling/testing protocol proposed by the Georgia Pulp and Paper Association and approved by the Department.

d. Your company will be required to meet the new dioxin limitations by June 4, 1992, the date mandated by the Federal Clean Water Act.

Enclosed is a copy of the portions of your current NPDES permit with the proposed modifications. The Department should be notified if your company anticipates any difficulty in meeting the new requirements.

Sincerely,

J. Leonard Ledbetter
Commissioner

JLL:njk
Enclosure

bc: Mr. John T. Marlar

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning July 28, 1989 and lasting through June 3, 1992, the permittee is authorized to discharge from outfall(s) serial number(s) 001 and 002 - Process wastewater, sanitary wastes, and stormwater runoff.

   Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic (Specify Units)	Discharge Limitations				Monitoring Requirements		
	Mass Based		Concentration Based				
	Daily Avg.	Daily Max.	Daily Avg.	Daily Max.	Measurement Frequency	Sample Type	Sample Location
Dioxin (2,3,7,8-TCDD)[1]	-	-	-	-	Quarterly	24-Hour Composite	Effluent[2]

1. The permittee shall adhere to the analytical protocol described in Appendix C of the U. S. EPA/Paper Industry Cooperative Dioxin Screening Study (EPA 440/1-88-025, March 1988) when analyzing wastewater effluent samples for 2,3,7,8-TCDD.

2. The effluent sample location shall be defined as the discharge stream after treatment, but prior to mixing with any other waters.

DRAFT

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

2. During the period beginning June 4, 1992 and lasting through December 1, 1992, the permittee is authorized to discharge from outfall(s) serial number(s) 001 and 002 - Process wastewater, sanitary wastes, and stormwater runoff.

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic (Specify Units)	Discharge Limitations				Monitoring Requirements		
	Mass Based		Concentration Based				
	Daily Avg.	Daily Max.	Daily Avg.	Daily Max.	Measurement Frequency	Sample Type	Sample Location
Dioxin (2,3,7,8-TCDD)*	-	-	-	1.1 ppq[3]	Quarterly	24-Hour Composite	Effluent[2]

1. The permittee shall adhere to the analytical protocol described in Appendix C of the U. S. EPA/Paper Industry Cooperative Dioxin Screening Study (EPA 440/1-88-025, March 1988) when analyzing wastewater effluent samples for 2,3,7,8-TCDD.

2. The effluent sample location shall be defined as the discharge stream after treatment, but prior to mixing with any other waters.

3. This water quality-based discharge limitation is below the generally accepted level of detection of 10 ppq (ppq = parts per quadrillion) for dioxin in effluents. Therefore, for the purposes of this permit, the detection level of 10 ppq shall be considered as the threshold for determining compliance/non-compliance with the discharge limitation.

OBJECTION*

DRAFT

6. The permittee shall monitor for dioxin (2,3,7,8-TCDD) and furan (2,3,7,8-TCDF) in ambient fish tissue in the facility's receiving stream. The dioxin monitoring program shall be conducted in accordance with the Study Plan To Conduct Dioxin Monitoring In Fish Tissue From The Vicinity Of Five Georgia Bleached Kraft Mills, March 31, 1989. The sampling/testing program shall be conducted on an annual basis, with annual reports submitted to the Director.

7. The Director recommends that the permittee develop and implement Best Management Practices (BMP's) for chlorine minimization in the pulp bleach plant and for total suspended solids minimization in the final effluent. Furthermore, the Director recommends that such BMP's include the necessary studies to determine if process modifications to the bleach plant and/or additional effluent controls are feasible for the permittee's facility. Should the permittee decide that such studies are warranted, these studies shall be conducted and a report of their findings submitted to the Director by December 31, 1990. To the maximum extent practicable, the permittee shall implement the findings of the chlorine minimization and total suspended solids minimization studies by no later than June 4, 1992.

Is fish tissue Study Plan blessed by EPA

National guidance calls for recommendation of interim control measures of minimization

Is June 4, 1992, minimization deadline appropriate?

DRAFT

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION
270 Washington Street, S. W.
Atlanta, Georgia 30334

FACT SHEET

APPLICATION FOR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT TO DISCHARGE TREATED WASTEWATER TO WATERS OF THE STATE OF GEORGIA

Application No. GA 0003620 Date June 1, 1989

1. SYNOPSIS OF APPLICATION

a. Name and Address of Applicant

ITT Rayonier, Inc.
P. O. Box 207
Jesup, Georgia 31545

b. Description of Applicant's Operation

Pulp and Paper Mill, produces market bleached kraft and dissolving kraft.

c. Production Capacity of Facility

1740 ADT/day, may be increased to 1940 ADT/day by 1990.

d. Applicant's Receiving Waters

Altamaha River

For a sketch showing the location of the discharge(s), see Attachment A.

e. Description of Existing Pollution Abatement Facilities

Screening
Primary Clarification
Nutrient Addition
Aeration Basin

f. Description of Discharges (as reported by applicant)

Serial 001 and 002 Combined

Average Flow	-	62 mgd
Average Winter Temperature	-	22°C
Average Summer Temperature	-	34°C
pH Range (std. units)	-	7.0 to 8.4

Pollutants which are present in significant quantities or which are subject to effluent limitation are as follows:

Effluent Characteristic	Reported Load
BOD_5	32 mg/l
Total Suspended Solids	57 mg/l

Stormwater Runoff Point Sources

Average Flow	-	Varies
Average Winter Temperature	-	N/A
Average Summer Temperature	-	N/A
pH Range (std. units)	-	7.1

Pollutants which are present in significant quantities or which are subject to effluent limitation are as follows:

Effluent Characteristic	Reported Load
BOD_5	5 mg/l
Total Suspended Solids	2 mg/l

2. PROPOSED EFFLUENT LIMITATIONS

Serial 001 and 002 - Combined

Permitted Maximum Temperature - N/A
Permitted pH Range (std. units) - 6.0 - 9.0

Effluent Characteristic	Discharge Limitation
BOD_5	
May 1 - November 30	22,300 lbs/day Avg.Daily 33,450 lbs/day Max.Daily
December 1 - April 30	32,000 lbs/day Avg.Daily 48,000 lbs/day Max.Daily

BOD_5 limitations may be increased to 35,000 lbs/day average daily and 52,500 lbs/day maximum daily during wintertime months (December 1 - April 30) if anticipated production in 1990 is reached.

Total Suspended Solids	42,010 lbs/day Avg.Daily 77,600 lbs/day Max.Daily

Serial ____ - N/A

Permitted Maximum Temperature -
Permitted pH Range (std. units) -

Effluent Characteristic	Discharge Limitation

3. MONITORING REQUIREMENTS

The applicant will be required to monitor regularly for flow and those parameters limited in Section 2 above with sufficient frequency to ensure compliance with the permit conditions. Frequency, methods of sampling, and reporting dates will be specified in the final permit.

4. PROPOSED COMPLIANCE SCHEDULE FOR ATTAINING EFFLUENT LIMITATIONS

N/A

5. PROPOSED SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE DISCHARGE

See Part III, Special Requirements of NPDES permit, attached.

6. WATER QUALITY STANDARDS AND EFFLUENT STANDARDS APPLIED TO THE DISCHARGE

The Altamaha River is classified as fishing. The effluent limitations were derived to meet this classification.

7. PROCEDURES FOR THE FORMULATION OF FINAL DETERMINATIONS

a. Comment Period

The Georgia Environmental Protection Division (EPD) proposes to issue an NPDES permit to this applicant subject to the effluent limitations and special conditions outlined above. These determinations are tentative.

Interested persons are invited to submit written comments on the permit application or on EPD's proposed determinations to the following address:

Georgia Environmental Protection Division
205 Butler Street, S.E.
Floyd Towers East, Room 1070
Atlanta, Georgia 30334

All comments received prior to
will be considered in the formulation of final determinations with regard to this application.

b. Public Hearings

Any applicant, affected state or interstate agency, the Regional Administrator of the U. S. Environmental Protection Agency (EPA) or any other interested agency, person or group of persons may request a public hearing with respect to an NPDES permit application if such request is filed within thirty (30) days following the date of the public notice for such application. Such request must indicate the interest of the party filing the request, the reasons why a hearing is requested, and those specific portions of the application or other NPDES form or information to be considered at the public hearing. The Director shall hold a hearing if he determines that there is sufficient public interest in holding such a hearing. If a public hearing is held, notice of same shall be provided at least thirty (30) days in advance of the hearing date.

In the event that a public hearing is held, both oral and written comments will be accepted; however, for the accuracy of the record, written comments are encouraged. The Director or his designee reserves the right to fix reasonable limits on the time allowed for oral statements and such other procedural requirements as he deems appropriate.

Following a public hearing, the Director, unless he should decide to deny the permit, may make such modifications in the terms and conditions of the proposed permit as may be appropriate and shall issue the permit. Notice of issuance or denial will be circulated to those persons or groups who participated in the hearing; to those persons or groups who submitted written comments to the Director on the proposed permit within thirty (30) days from the date of the public notice of the application for permit; and to all persons or groups included on the EPD mailing list.

c. Contested Hearings

Any person who is aggrieved or adversely affected by the issuance or denial of a permit by the Director of EPD may petition the Director for a hearing if such petition is filed in the office of the Director within thirty (30) days from the date of notice of such permit issuance or denial. Such hearing shall be held in accordance with the EPD Rules, Water Quality Control, subparagraph 391-3-6-.01.

Petitions for a contested hearing must include the following:

1. The name and address of the petitioner;

2. The grounds under which petitioner alleges to be aggrieved or adversely affected by the issuance or denial of a permit;

3. The reason or reasons why petitioner takes issue with the action of the Director;

4. All other matters asserted by petitioner which are relevant to the action in question.

d. Issuance of the Permit When No Public Hearing is Held

If no public hearing is held, and, after review of the written comments received, the Director determines that a permit should be issued and that his determinations as set forth in the proposed permit are substantially unchanged, the permit will be issued and will become final in the absence of a request for a Contested Hearing. Notice of issuance or denial will be circulated to those persons who submitted written comments to the Director on the proposed permit within thirty (30) days from the date of the public notice of such proposed permit; and to all persons or groups included on the EPD mailing list.

If no public hearing is held, but the Director determines, after a review of the written comments received, that a permit should be issued but that substantial changes in the proposed permit are warranted, public notice of the revised determinations will be given and written comments accepted in the same manner as the initial notice of application was given and written comments accepted pursuant to EPD Rules, Water Quality Control, subparagraph 391-3-6-.-6(7)(b). The Director shall provide an opportunity for public hearing on the revised determinations. Such opportunity for public hearing and the issuance or denial of a permit thereafter shall be in accordance with the procedures as set forth above.

8. DIOXIN MONITORING AND EFFLUENT LIMITATIONS

The NPDES permit for this bleached kraft pulp and paper mill was reopened on June 1, 1989 to incorporate water quality-based effluent limitations for dioxin (2,3,7,8-TCDD). The permit contains a daily maximum effluent limitation for dioxin that is based upon EPA's 10^{-6} human health risk factor. The effluent limitation was derived as shown below:

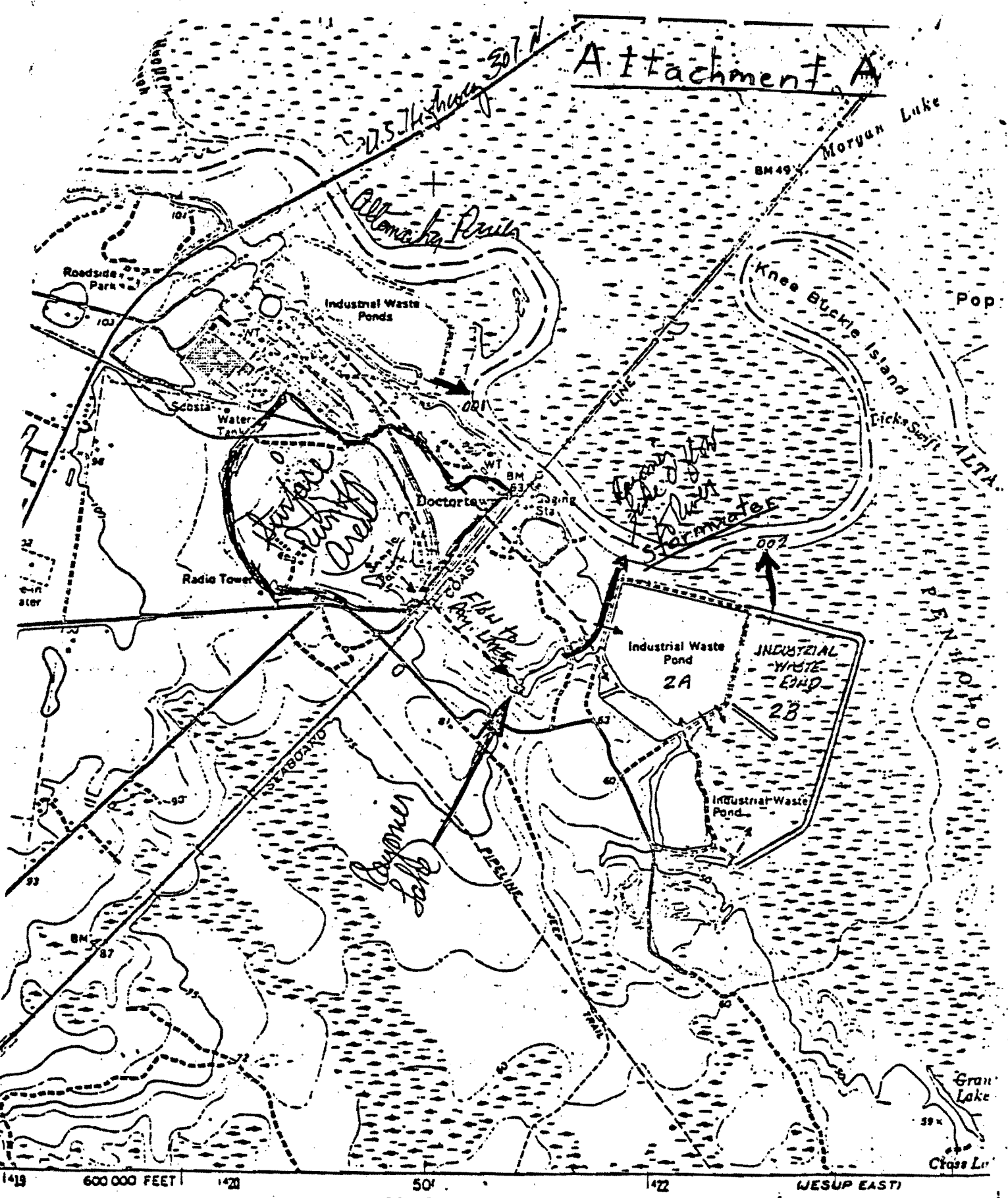
Design Discharge Flow (cfs)	Annual Average Stream Flow (cfs)	Dilution Factor	EPA 10^{-6} Human Health Criteria (ng/l)	Daily Maximum Effluent Limit (ppq)
95.5	7776	82	.000013	1.1

we have big dilution in our chart } OK

This daily maximum effluent limitation is below the generally accepted level of detection of 10 ppq for dioxin in effluents. Therefore, for the purposes of this permit, the detection level of 10 ppq shall be considered as the threshold for determining compliance/non-compliance with the specified effluent limitation.]**

The permittee shall conduct quarterly monitoring for dioxin in the final effluent, and shall attain compliance with the daily maximum effluent limitation specified above by no later than June 4, 1992. In addition, the permittee shall conduct annual monitoring for dioxin and for furan (2,3,7,8-TCDF) in fish tissue in the mill's receiving stream. This monitoring program shall be conducted in accordance with the Study Plan To Conduct Dioxin Monitoring In Fish Tissue From The Vicinity Of Five Georgia Bleached Kraft Mills, March 31, 1989.

Attachment A



12/10/80

B. SPECIAL REQUIREMENTS

1. River samples shall be collected and analyzed twice a month during the months, May through November. Samples shall be taken from the U.S. 301 Highway bridge, the ITT Rayonier marker just upstream from the confluence of Penholloway Creek and the Altamaha River, and the monitoring station at Everett City. Sampling shall be done near midstream or at a point which is judged to be representative of the river. Collection of samples shall be taken when flows are less than 10,000 cfs and when the river is at steady flow conditions. The time of collection at the various points shall coincide with time of travel for the river. Samples shall be analyzed for the following:

   a. BOD_5 and BOD_{40}

   b. Dissolved Oxygen

   c. pH

   d. Temperature

   Also, river stage and associated flow at Doctortown should be reported during periods scheduled for sampling whether or not sampling is actually conducted during that time.

2. The data from the river sampling program described above will be used by the Environmental Protection Division to refine and update the current stream model. If water quality violations are documented, limitations in Part I, Section A.1. will be adjusted accordingly.

3. The effluent limitations for BOD_5 for the December through April period may be modified to equal the limitations for the May through November period. The Director will provide written notification to the permittee 180 days prior to this permit modification.

4. Limits on page 2 are based on the permittee's anticipated production rate of 1740 ADTPD in 1988. This assumes that 38 percent of production is dissolving kraft and 62 percent of production is bleached kraft. The permittee anticipates that production will be increased to 1940 ADTPD in 1990 and is requesting a corresponding increase in the wintertime (December 1 - April 30) BOD_5 limitation from 32,000 lbs. per day to 35,000 lbs. per day on a daily average basis.

B. SPECIAL REQUIREMENTS (continued)

By December 1, 1989, the Division will be provided with the expected projected production for the following calendar year and with a summary of the actual production for the previous twelve month period. The effluent limitations will be adjusted in proportion to the projected production and shall not exceed the effluent limits commensurate with the 1940 ADTPD under this permit. This assumes approximately the same ratio of dissolving kraft to market bleached kraft production. These limitations will then remain in effect for the duration of the permit.

If the ratio of dissolving kraft to market bleached kraft changes, certain adjustments may have to be made in the limitations, but in no case will the daily allowable BOD_5 exceed 35,000 lbs. per day.

5. Any discharge point sources of stormwater runoff shall not cause any water quality violations in the stream.

PERMIT NO. GA 0003620

MOMP

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Georgia Water Quality Control Act (Georgia Laws 1964, p. 416, as amended), hereinafter called the "State Act," the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.), hereinafter called the "Federal Act," and the Rules and Regulations promulgated pursuant to each of these Acts,

ITT RAYONIER, INC.
P. O. Box 207
Jesup, Georgia 31545

is authorized to discharge from a facility located at

U. S. Highway 301 North
Jesup, Wayne County, Georgia

to receiving waters Altamaha River

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, and III hereof.

This permit shall become effective on December 4, 1987.

This permit and the authorization to discharge shall expire at midnight, December 1, 1992.

Signed this 4th **day of** December, 1987.

J. Leonard Ledbetter
Director,
Environmental Protection Division

EPD 2.21-1

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning effective date and lasting through December 1, 1992, the permittee is authorized to discharge from outfall(s) serial number(s) 001 and 002 - Process wastewater, sanitary wastes, and stormwater runoff.

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations				Monitoring Requirements		
	kg/day (lbs/day)		Other Units(Specify)				
	Daily Avg.	Daily Max.	Daily Avg.	Daily Max.	Measurement Frequency	Sample Type	Sample Location
Flow-m^3Day (MGD)	-	-	-	-	Continuous	Recorder	Influent or Effluent
BOD_5							
May 1-November 30	10,115(22,300)	15,173(33,450)	-	-	Daily	Composite	Effluent
December 1-April 30	14,515(32,000)	21,772(48,000)	-	-	"	"	"
TSS	19,056(42,010)	35,199(77,600)	-	-	Daily	Composite	Effluent
BOD_{40}	-	-	-	-	1/3 Monthly	Composite	Effluent
Color	-	-	-	-	Weekly	Composite	Effluent

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored daily by grab sample at final effluent.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

1. The effluent sample location shall be defined as the discharge stream after treatment, but prior to mixing with any other waters.

2. See Part III, Section B.1. for river monitoring requirements.

3. The pollutant limitations above represent the sum of the pollutants from Outfall 001, added to the pollutants from Outfall 002.

4. See Part III, Section B.2. through B.4. regarding possible changes in the wasteload allocation for BOD_5.

B. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

   The permittee will be in compliance with the effluent limitations on the effective date of the permit.

2. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

Note: EPD as used herein means the Division of Environmental Protection of the Department of Natural Resources.

C. MONITORING AND REPORTING

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Reporting

Monitoring results obtained during the previous one month shall be summarized for each month and reported on an Operation Monitoring Report (Form WQ 1.45), postmarked no later than the 15th day of the month following the completed reporting period. The first report is due on December 15, 1987.
The EPD may require reporting of additional monitoring results by written notification. Signed copies of these, and all other reports required herein, shall be submitted to the following address:

Georgia Environmental Protection Division
Industrial Wastewater Program
205 Butler Street, S.E., Floyd Towers East
Suite 1070
Atlanta, Georgia 30334

3. Definitions

a. The "daily average" discharge means the total discharge by weight during a calendar month divided by the number of days in the month that the production or commercial facility was operating. Where less than daily sampling is required by this permit, the daily average discharge shall be determined by the summation of all the measured daily discharges by weight divided by the number of days sampled during the calendar month when the measurements were made.

b. The "daily maximum" discharge means the total discharge by weight during any calendar day.

c. The "daily average" concentration means the arithmetic average of all the daily determinations of concentration made during a calendar month. Daily determinations of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during that calendar day.

d. The "daily maximum" concentration means the daily determination of concentration for any calendar day.

e. "Weighted by flow value" means the summation of each sample concentration times its respective flow in convenient units divided by the sum of the respective flows.

f. For the purpose of this permit, a calendar day is defined as any consecutive 24-hour period.

4. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations published pursuant to Section 304(g) of the Federal Act.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The exact place, date, and time of sampling;

b. The dates the analyses were performed;

c. The person(s) who performed the analyses;

d. The analytical techniques or methods used; and

e. The results of all required analyses.

6. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Operation Monitoring Report Form (WQ 1.45). Such increased monitoring frequency shall also be indicated. The EPD may require more frequent monitoring or the monitoring of other pollutants not required in this permit by written notification.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained by the permittee for a minimum of three (3) years, or longer if requested by the State Environmental Protection Division.

A. MANAGEMENT REQUIREMENTS

1. Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increases, or process modifications which will result in new, different, or increased discharges or pollutants must be reported by submission of a new NPDES application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the EPD of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

2. Noncompliance Notification

If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the permittee shall provide the Water Protection Branch of EPD with the following information, in writing, within five (5) days of becoming aware of such condition:

a. A description of the discharge and cause of noncompliance; and

b. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

3. Facilities Operation

The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

4. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to navigable waters resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

5. Bypassing

Any diversion from or bypass of facilities covered by this permit is prohibited, except (i) where unavoidable to prevent loss of life or severe property damage, or (ii) where excessive storm drainage, runoff, or infiltration would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The permittee shall operate the treatment works, including the treatment plant and total sewer system, to minimize discharge of the pollutants listed in Part I of this permit from combined sewer overflows or bypasses. The permittee shall monitor all overflows and bypasses in the sewer and treatment system. A record of each overflow and bypass shall be kept with information on the location, cause, duration, and peak flow rate. Upon written notification by EPD, the permittee may be required to submit a plan and schedule for reducing bypasses, overflows, and infiltration in the system.

6. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the State.

7. Power Failures

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall either:

a. In accordance with the Schedule of Compliance contained in Part I, provide an alternative power source sufficient to operate the wastewater control facilities;

or, if such alternative power source is not in existence, and no date for its implementation appears in Part I,

b. Halt, reduce or otherwise control production and/or all discharges from wastewater control facilities upon the reduction, loss, or failure of the primary source of power to said wastewater control facilities.

B. RESPONSIBILITIES

1. Right of Entry

The permittee shall allow the Director of EPD, the Regional Administrator of EPA, and/or their authorized representatives, agents, or employees, upon the presentation of credentials:

a. To enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit; and

b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to sample any discharge of pollutants.

2. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharges emanate, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Water Protection Branch of EPD.

3. Availability of Reports

Except for data determined by the Director of EPD to be confidential under Section 16 of the State Act or the Regional Administrator of the U. S. Environmental Protection Agency under Section 308 of the Federal Act, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the Atlanta office of the EPD. Effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 22(b) of the State Act.

4. Permit Modification

After written notice and opportunity for a hearing, this permit may be modified, suspended, revoked or reissued in whole or in part during its term for cause including, but not limited to, the following:

a. Violation of any conditions of this permit;

b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge; or

d. To comply with any applicable effluent limitation issued pursuant to the order the United States District Court for the District of Columbia issued on June 8, 1976, in Natural Resources Defense Council, Inc. et.al. v. Russell E. Train, 8 ERC 2120(D.D.C. 1976), if the effluent limitation so issued:

(1) is different in conditions or more stringent than any effluent limitation in the permit; or

(2) controls any pollutant not limited in the permit.

5. Toxic Pollutants

Notwithstanding Part II, B-4 above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Federal Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for this pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition. A draft permit will be provided for review and comments prior to issuance.

6. Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

7. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Federal Act.

8. Water Quality Standards

Nothing in this permit shall be construed to preclude the modification of any condition of this permit when it is determined that the effluent limitations specified herein fail to achieve the applicable State water quality standards.

9. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

10. Expiration of Permit

Permittee shall not discharge after the expiration date. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit such information, forms, and fees as are required by the agency authorized to issue permits no later than 180 days prior to the expiration date.

11. Contested Hearings

Any person who is aggrieved or adversely affected by an action of the Director of EPD shall petition the Director for a hearing within thirty (30) days of notice of such action.

12. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

13. Best Available Technology Economically Achievable

Notwithstanding Part II, B-4 above, if an applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 301(b)2 of the Federal Act for a pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with such effluent standard or prohibition. A draft permit will be provided for review and comments prior to issuance.

14. The permittee will implement best management practices to control the discharge of hazardous and/or toxic materials from ancillary manufacturing activities. Such activities include, but are not limited to, materials storage areas; in-plant transfer, process and material handling areas; loading and unloading operations; plant site runoff; and sludge and waste disposal areas.

PART III

A. PREVIOUS PERMITS

1. All previous State water quality permits issued to this facility, whether for construction or operation, are hereby revoked by the issuance of this permit. This action is taken to assure compliance with the Georgia Water Quality Control Act, as amended, and the Federal Clean Water Act, as amended. Receipt of the permit constitutes notice of such action. The conditions, requirements, terms and provisions of this permit authorizing discharge under the National Pollutant Discharge Elimination System govern discharges from this facility.

B. SPECIAL REQUIREMENTS

1. River samples shall be collected and analyzed twice a month during the months, May through November. Samples shall be taken from the U.S. 301 Highway bridge, the ITT Rayonier marker just upstream from the confluence of Penholloway Creek and the Altamaha River, and the monitoring station at Everett City. Sampling shall be done near midstream or at a point which is judged to be representative of the river. Collection of samples shall be taken when flows are less than 10,000 cfs and when the river is at steady flow conditions. The time of collection at the various points shall coincide with time of travel for the river. Samples shall be analyzed for the following:

   a. BOD_5 and BOD_{40}

   b. Dissolved Oxygen

   c. pH

   d. Temperature

   Also, river stage and associated flow at Doctortown should be reported during periods scheduled for sampling whether or not sampling is actually conducted during that time.

2. The data from the river sampling program described above will be used by the Environmental Protection Division to refine and update the current stream model. If water quality violations are documented, limitations in Part I, Section A.1. will be adjusted accordingly.

3. The effluent limitations for BOD_5 for the December through April period may be modified to equal the limitations for the May through November period. The Director will provide written notification to the permittee 180 days prior to this permit modification.

4. Limits on page 2 are based on the permittee's anticipated production rate of 1740 ADTPD in 1988. This assumes that 38 percent of production is dissolving kraft and 62 percent of production is bleached kraft. The permittee anticipates that production will be increased to 1940 ADTPD in 1990 and is requesting a corresponding increase in the wintertime (December 1 - April 30) BOD_5 limitation from 32,000 lbs. per day to 35,000 lbs. per day on a daily average basis.

B. SPECIAL REQUIREMENTS (continued)

By December 1, 1989, the Division will be provided with the expected projected production for the following calendar year and with a summary of the actual production for the previous twelve month period. The effluent limitations will be adjusted in proportion to the projected production and shall not exceed the effluent limits commensurate with the 1940 ADTPD under this permit. This assumes approximately the same ratio of dissolving kraft to market bleached kraft production. These limitations will then remain in effect for the duration of the permit.

If the ratio of dissolving kraft to market bleached kraft changes, certain adjustments may have to be made in the limitations, but in no case will the daily allowable BOD_5 exceed 35,000 lbs. per day.

5. Any discharge point sources of stormwater runoff shall not cause any water quality violations in the stream.

C. BIOMONITORING AND TOXICITY REDUCTION REQUIREMENTS

The permittee may not discharge toxic wastes in concentrations or combinations which are harmful to humans, fish or aquatic life. The permittee shall not discharge an effluent which will kill 10% or more of the exposed test organisms in 96 hours or less, when the test solution contains volumes of effluent and dilution water proportional to the plant design flow and the 7Q10 flow of the receiving stream.

1. If toxicity is suspected in the permittee's effluent, the Division may require the permittee to develop a screening program for whole effluent biomonitoring. The schedule will be as follows for this screening approach:

   a. Within 90 days of Division notification, a study plan detailing the test methodology and test organisms shall be submitted for conducting forty-eight hour acute static renewal tests of the final effluent. If residual chlorine is present in the final effluent from treatment and/or disinfection processes, a prechlorinated or dechlorinated sample will also be tested.

   b. Within 90 days of Division approval of the study plan, the permittee shall conduct and submit the results of the forty-eight hour static renewal tests.

2. If toxicity is found in the permittee's effluent based upon the results of the screening process, the permittee shall, within 90 days of written notification by the Division, submit a Toxicity Reduction Evaluation (TRE) plan to the Division. (Note: Toxicity is defined to be a situation in which the effluent quality is such that 10% or more of the test organisms are killed within 96 hours, in a test solution which contains volumes of effluent and dilution water proportional to the plant design flow and the 7Q10 flow of the receiving stream.) The TRE plan shall detail the action the permittee will implement to eliminate toxicity. Within 270 days of Division approval of the TRE plan, the permittee shall complete implementation of the TRE plan and conduct follow-up biomonitoring of the effluent in accordance with the approved TRE plan. If toxicity is still indicated, the permittee shall continue the TRE plan. The TRE plan shall not be complete until the permittee has eliminated the toxicity in its effluent. On a case specific basis, chronic toxicity testing procedures may be required to verify that the toxicity has been eliminated.

3. If toxicity is not indicated initially, or if there are substantial changes in the effluent composition, the permittee may be required to repeat the forty-eight hour static renewal test upon notification by the Division. On a case specific basis, chronic toxicity testing procedures may also be required. Biomonitoring of the effluent will be required at a minimum of once every three years unless otherwise noted.

Upon approval by the Division, all study plans and TRE plans will become part of the requirements of this permit.

GEORGIA

FISCAL YEAR 1987 NPDES PERMIT REVIEW

FACILITY: ITT Rayonier, Inc.

NPDES No: GA0003620

APPLICATION _____ DRAFT (20 days) _____ FINAL (15 working days) ✓

_____ NEW (10 days)

✓ MAJOR INDUSTRIAL

_____ MAJOR MUNICIPAL

_____ MINOR PRIMARY

_____ MODIFICATION (circle one: Major Ind/Mun. or Minor Pri)

ROUTING:

1. DATE RECEIVED 12/16/87
2. UNIT CHIEF LCP 12/17
3. ASSIGNED TO Darlene DUE 1/8/88
4. UNIT CHIEF (If Problems)
5. PERMITS CLERK
6. FILES

COMMENTS:

WQ issue check w/ Jim Greenfield
No comment - make note to pull permit/WQ file for mid year review. Jim G 1/11/88

ACTION TO BE TAKEN: OK letter prepared 1/14/88
Mailed 1/21/88

Y. Martin — 1/21/88
COMPLETED BY — DATE

Georgia Department of Natural Resources
205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

August 8, 1989

Mr. R. A. McCrary
Manager of Environmental Affairs/Pulp Products
Southeast Operations
ITT Rayonier, Inc.
P. O. Box 207
Jesup, Georgia 31545

Re: NPDES Permit No. GA 0003620

Dear Mr. McCrary:

Please find enclosed a copy of the third comment letter we recently received from the U. S. Environmental Protection Agency, Region IV, concerning modifications to your facility's NPDES permit. We are currently reviewing all three letters, and would appreciate your comments by August 15, 1989 to aid in our response.

Sincerely,

Nolton G. Johnson, P.E.
Assistant Chief
Water Protection Branch

NGJ:lhk
Enclosure

cc: Mr. John T. Marlar
U. S. EPA, Region IV

Dana B. Dollorf
Director
Environmental Affairs

Part II

ITT Rayonier Inc.
Executive Offices
1177 Summer Street
Stamford, CT 06904
Telephone (203) 348-7000

August 3, 1989

Georgia Environmental Protection Division
205 Butler Street, S.E.
Floyd Towers East, Room 1070
Atlanta, GA 30334

Re: NPDES Permit

Dear Sirs:

Enclosed are ITT Rayonier's comments on the draft NPDES Permit issued for our Jesup Mill. The comments are in two parts and include numerous attachments.

We appreciate the opportunity to comment on the draft permit and look forward to resolution of truly burdensome and unnecessary requirements.

Sincerely yours,

DBD/lj/28010

Attachment

ITT Rayonier Inc.
Executive Offices
1177 Summer Street
Stamford, CT 06904
Telephone (203) 348-7000

August 4, 1989

Georgia Environmental Protection Division
205 Butler Street, S.E.
Floyd Towers East, Room 1070
Atlanta, GA 30334

Gentlemen:

Re: Proposed Modification of NPDES Permit GA0003620

This will furnish you with Rayonier's comments on the proposed modification of NPDES Permit GA0003620 to accommodate EPA's March 15, 1989 "Guidance for Section 304(l) Listing and Permitting of Pulp and Paper Mills". Part I of these comments, which are contained in this letter, will describe the uncertainty associated with the analytical methods used to detect 2,3,7,8 TCDD (Dioxin), the questionable detection limit, and details on what implementation of technology that may reach the proposed limit is likely to cost this company and to its ability to produce dissolving pulp products. Part II will conclude with a summary of the errors our consultant, Research Testing & Development Corp., finds inherent in the EPA's cancer potency factor derived water quality standard for dioxin. This summary also contains a suggested approach the company believes the EPD can use to establish a valid and entirely safe water quality standard for dioxin pending further study of this matter by both EPA and this industry.

Part II of these comments, which are attached, includes a detailed explanation of the factual and legal errors contained in EPA's suggested water quality standard for dioxin and the approach EPD has proposed to achieve compliance with this errant water quality standard.

PART I.

A. ANALYTICAL UNCERTAINTY

The methods being used to detect very low levels of dioxins are subject to great variability, can only be performed by a few laboratories, and have not been subjected to peer review or "official EPA" method development. They are essentially research-level methods subject to considerable subjective decision making on the part of the analyst. See attached letter from Larry LaFleur (NCASI) to Phil Hamlin and FAX from Phil Hamlin to Larry LaFleur for more detail on the status of analytical procedures (both dated June 1, 1989).

Further illustrating the problem is the attached memo to Hamlin from LaFleur (July 14, 1989) which indicates the TCDD value for Jesup may be 11 ppq instead of 24 ppq as first reported. This letter also illustrates the developmental status of the methodology that we and the EPD will be forced to use. This situation is a clear example of the difficulties brought on by implementing research level test methods for permit compliance testing.

An effluent limit must be based on test methods that are accurate and reproducible if either the agency or the permit holder are to be able to assess compliance. The agency must either pick a permit limit that available laboratories can measure (2,000 ppq TCDD per Hamlin, June 20, 1989), delay imposition of any limit until test methods are approved, or include a process for handling the analytical problems above before a "violation" can be alleged. Imposition of any effluent limit without clear, reliable, and appropriate test methods is clearly premature.

In order to place Rayonier's Jesup mill on the 304(b) short list, EPD must include "the amount of each such toxic pollutant discharged". Because of uncertain results produced by the analytical method being used, (see LaFleur letter of July 14, 1989 referenced above) which is being forced to yield test results that are below the quantitative reproducible limit, Rayonier asserts EPD has not established the amount of dioxin in the company's Jesup mill effluent.

NOTE: Dioxin analysis of Jesup effluent should be performed on flow-weighted composite samples from outfalls 001 and 002.

ITT Rayonier Inc.

Research Center
409 E. Harvard Avenue
Shelton, Washington 98584
Telephone (206) 426-4461

FAX MESSAGE
June 20, 1989

Larry LaFluer: Please comment by addition/modification.
Thanks for the help. Phil

The USEPA has not published for peer review and comment Method 8290. This method has not been the method of use during the EPA/API agreement investigating the occurrence of 2,3,7,8 tetrachlorodibenzo-para-dioxin (TCDD). In fact the analysis of dioxin is not done using traditional analytical quantification methods. EPA has not established a protocol which any reasonably equipped commercial analytical laboratory can use with the specified permit limits.

The EPA has ignored the fact that the analysis of dioxin (i.e. 2,3,7,8 TCDD) involves a subjective criteria for establishing the quantitative detection limits. Furthermore the detection limit is dependent on the ability of the Analyst to to show that a surrogate standard is recoverable at a level (40 to 120 percent) that is not considered quantitative in classical analytical chemistry. In addition, the EPA allows the Analyst to rely on two other procedures to "estimate" the detection limit in the event the surrogate recovery falls outside of the generous non-quantitative limits of 40-120 %. One is to assume the detection limit will be two and one-half times the signal to noise level that the instrument is demonstrating at the particular period. The other is to assume the peaks observed are related to "dioxin" and to calculate the peak area and report the result as a detection limit. In both instances the true analytical limit of detection for 2,3,7,8 TCDD has not been shown.

The differences between analytical laboratory can easily be a factor of 50 or greater when analysis is being conducted at the parts per quadrillion level. For example, two laboratories participating in the EPA/API investigation of the occurrence of dioxins in pulp mills one research laboratory reported a limit of detection for effluents at about 2.2 parts per quadrillion, while the other gave a limit of 110 parts per quadrillion. Experience suggests that commercial laboratories will not be able to approach these levels of efficiency on routine samples. It is anticipated that most commercial analytical laboratories available to do routine analysis for reporting under an NPDES permit will only be able to achieve a detection limit of 2000 ppq TCDD.

END

WEST COAST REGIONAL CENTER
P.O. Box 458
Corvallis, OR 97339
(503) 752-8801

NATIONAL COUNCIL OF THE PAPER INDUSTRY FOR AIR AND STREAM IMPROVEMENT, INC.

June 20, 1989

MEMO TO: Phil Hamlin

FROM: Larry LaFleur

SUBJECT: Comments on TCDD/TCDF Analytical Detection Limits

Very early on in the field of TCDD analytical procedure method development, a precedent of calculating sample specific detection limits was adopted as standard practice. This may have resulted from the intensified concerns over the toxicity of TCDD which dictated a need for more information from the analyst about "non-detected" or it may have resulted from the variability in performance in the extensive clean-up procedures required in these analyses. At any rate, somehow, a sample specific detection limit estimate was incorporated in the analytical procedures at a very early stage and now, virtually all procedures include a similar convention.

The state-of-the-art procedure for determining if TCDD or TCDF are present, includes several criteria which must be met before the analyte is said to be detected. First of all, certain gas chromatographic retention time criteria must be met. The M^+ and $M+2^+$ ions of the analyte must elute within -1 to +3 seconds of the corresponding isotopically labelled internal standard retention time. The ion current responses for both ions must maximize within ±1 second of each other. Finally, the M^+ and $M+2^+$ ions of the isotopically labelled internal standard must also maximize within ±1 second of each other.

The second set of identification criteria require that the ratio of the integrated ion current areas for the M^+ and $M+2^+$ ions of the native analyte that meet the retention time criteria be within ±15 percent of the theoretical chlorine isotope abundance ratio (0.77 for a compound with four chlorines). Similarly, the ratio of the integrated ion current areas for the M^+ and $M+2^+$ ions for the isotopically labelled internal standard must be within ±15 percent of the theoretical chlorine isotope abundance ratio (also 0.77 for a tetra chloro compound).

The final criteria requires that all ion current intensities be ≥ 2.5 times the noise level (i.e. signal to noise ratio ≥2.5:1).

If all these criteria are met, the analyte is considered detected and the concentration is calculated using isotopic

dilution quantitation procedures. These quantitation procedures include correction of the result for the recovery of the internal standard or, to put it another way, the quantitation procedures corrects for losses in isolation and/or clean-up. I have reviewed a large number of analytical duplicates and in general, I feel that if the internal standard recoveries fall below 20 percent, the probability is unacceptably high that the precision QA/QC objective of a relative percent difference of less than 50 percent will not be met. Between 20 and 40 percent, NCASI adjusts the internal standard signal to noise ratio to ≥10:1 to provide additional assurance that poor integration of the internal standard will not adversely affect the quantitation. This practice in not universally accepted nor practiced in agency procedures.

Since the daily response factor is allowed to vary by ±20 percent before re-calibration is required, it is conceivable that a recovery of 120 percent could occur. Clearly, recoveries above that level are indications of interferences and would introduce an unacceptable error in the quantitation procedure. Thus, samples with recoveries greater than 120 percent cannot be accurately quantified.

If any one of the identification criteria are not met, the result is reported as non-detected. As I mentioned before, the convention is to provide a sample specific estimate of the detection limit. There are essentially two basic cases to consider in discussing how this estimate is performed. In the first case, let us assume that there are essentially no analyte peaks to integrate. The analyst then makes an estimate of the noise level at the retention time where the analyte should have occurred, multiplies this noise level estimate by 2.5 and assumes that a peak would have to be at least that large before it would be considered detected. This area (actually in practice it is more practical to switch to peak heights since integrating random "noise" is not realistic) is then plugged into the same quantification formula as if a peak were present at that level and the result is an estimate of the minimum possible detectable level in that particular analysis.

In the second case, let us assume that a peak is present in one or more of the native channels but one of the identification criteria was not met; for instance the ion ratio was too high. In this case, since the signal is clearly above the noise level, then signal-to-noise is not the factor that determines detectability. In this case, the analyst uses that area of the peak as if it were the target analyte and simply plugs that into the quantification equation. The result then becomes the estimate of detection limit.

There are subtly different situations which may arise requiring modification of these basic approaches necessary. The whole process becomes somewhat subjective as the limits of the quantification criteria are approached. In order to cross-check

the analyst, NCASI requires that all laboratory reports include hard copies of the extracted ion current profiles and these are audited by our staff.

Phase II of the NCASI interlaboratory comparison study included, as part of the industries fulfillment of the terms of the 104 mill study agreement, seven treated effluents. There were six kraft mill effluents and one sulfite mill effluent. There were a number of problems with the comparability of the results submitted by the three participating laboratories.

Beginning with the 2378-TCDD data, the relative percent differences (range divided by the mean) ranged from 2 to 149 percent. Within the eight analyses (one sample was analyzed as a blind duplicate) there arose several situations where one or more laboratory detected TCDD and the others didn't. In all cases, the estimated detection limits were below the levels reported as detected by the other laboratory(ies). The highest relative percent difference was observed for the sulfite mill effluent where one lab reported non-detect at 0.84 ppq, one reported detectable at 1.4 ppq and the third reported detectable at 9.5 ppq.

The 2378-TCDF results were even more variable. In this case, the range of relative percent differences was from 6 to 241 percent. Again, there were situation where some labs reported non-detects below the levels another lab reported detected. Again, the comparability was worse for the sulfite mill where two labs reported non-detects with 1 and 8.5 ppq detection limits and the third lab reported detecting 2378-TCDF at 44 ppq. In a situation such as this, it would seem more appropriate to describe the one laboratory's result as a false positive.

Our conclusion was that the methods could not reliably detect and/or quantify concentrations below 30 to 40 ppq although this particular concentration range was not rigorously established by any statistical evaluations. Due to these problems, NCASI has continued its efforts to further improve the analytical procedures in hopes of correcting these problems. Some new adaptations of the analysis procedure have been investigated and are currently being evaluated through a contract laboratory.

Also, it was the consensus opinion of the industry analytical advisory committee that acceptable comparability of data could only be achieved through standardization of the analytical procedures. Therefore, we as an industry, have taken steps to standardize the use of the procedures described in NCASI Technical Bulletin No. 551, since in our opinion, it has been most thoroughly tested and optimized.

I spoke with Dr. Werner Beckert, USEPA Project Officer for SW-846 Method 8290 (HRGC/HRMS PCDD/PCDF Analysis Procedures) who told me that the final version of the method will be complete by

the end of June. He did indicate that, within that time frame, he would be receptive to comments on the method from NCASI pertaining to pulp and paper matrix specific considerations. We are attempting to respond. Our remarks will point out that the procedure has never been tested or single laboratory evaluated for pulp and paper industry effluents. The single laboratory evaluation that was performed included dried brownstock pulp and a waste treatment plant sludge for pulp industry matrix validation. However, Method 8290 has no provision for pre-drying the samples so the validation would not be applicable to process pulps or, for that matter bleached pulp.

To the best of my knowledge, the only PCDD/PCDF methods that have been published for public comment are method 613 (2378-TCDD by low resolution GC/MS with ppb/ppt detection limits) and SW-846 Method 8289 (PCDD/PCDF by low resolution GC/MS).

cc: William J. Gillespie

ncasi

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July 14, 1989

MEMO TO: Phil Hamlin

FROM: Larry LaFleur

SUBJECT: Re-analysis of Mill M84 104 Mill Study Effluent Sample

During the course of the analysis of effluents from the 104 Mill Study, a number of the analyses failed the QA/QC criteria, thereby requiring re-analyses. These re-analyses were held until some modifications in the effluent analysis protocol could be tested and implemented. The samples were then submitted as a batch.

The contract laboratory had to discard the entire first set of analyses from this repeat batch (probably due to analyst error such as forgetting to spike the sample with internal standards). The laboratory initiated a repeat analysis on half of what remained in the sample bottle. Although some of these analyses meet the QA/QC specifications, there were problems with your effluent sample. The table below summarizes the original analysis data (including the information which failed QA/QC and was thus censored from the original report to EPA) along with the present set of data.

EPA CODE	SAMPLE I.D. NUMBER	NCASI CODE	LABORATORY REPORT DATE	2378 TCDD (ppq)	ION RATIO	PERCENT INTERNAL STANDARD RECOVERY 13C-TCDD	2378 TCDF (ppq)	ION RATIO	PERCENT INTERNAL STANDARD RECOVERY 13C-TCDF	PERCENT CLEAN-UP STANDARD RECOVERY 37Cl-TCDD
M84	M84EAC	AK3	11/22/88	24	0.66	21	11	0.87	18	71
M84	M84EAC	AK3	05/31/89	11	0.71	69	4.2	0.76	77	73

Both the original and the repeat 2378-TCDD analyses met the internal standard recovery QA/QC minimum. However, the precision between the two analyses fail the QA/QC specification. I have reviewed the data and cannot come up with any explanation for the reproducibility problem except that the laboratory used a small sample aliquot for the repeat analysis and they may have had difficulties getting a representative sample (particularly with respect to the solids). Perhaps this is an indication of the reliability of the analyses at or near the target detection limit.

The original 2378-TCDF analysis failed the internal standard recovery criteria but the repeat analysis passed. As we have seen in the past, the probability of the precision criteria being met is very poor when internal standards drop below 20 percent and this 2378-TCDF data is an excellent example of this problem.

According to the terms of the Agreement, we must report these re-analysis results. Thus, we will report the 2378-TCDF results from the repeat analysis as "QA/QC Difficulties." We will then arrange a meeting where I will (1) report the actual concentration data (as required under the terms of the Agreement) and (2) explain our interpretation of the significance of the difficulties.

Although we are bound by the terms of the Agreement to report these results, in the event you have concerns about the EPA using questionable data to represent the discharge from your mill we would like you to be aware that there has been some precedence for EPA accepting additional data (not necessarily substitute data) from mills. In situations where the mill felt the conditions during the 104 mill study sampling were not indicative of their normal discharge, they elected to re-sample and pay to have an additional set of pulp sludge and effluent samples analyzed. EPA has accepted this data and added it to their database. In these instances, both data points are being used to characterize the mill. In other words, EPA did not replace the original data set. Given the <u>analytical</u> difficulties associated with the analysis of you effluent, if you elected to pursue a similar course of action, it could be argued that the repeat data only be used since the original data was highly questionable. Please advise Bill Gillespie if you would like to pursue this option.

cc: Ray Whittemore
Bill Gillespie

B. FISH SAMPLES TAKEN FROM THE ALTAMAHA RIVER DO NOT SUPPORT THE LISTINGS

The existing fish data for Jesup is both non-supportive of any effluent limits and very limited. The only fish data available is that from the National Bioaccumulation study and that is limited to "Spotted Sucker" in the Altamaha River.

There were two samples listed, and it is not clear if they both represent duplicates (split sample) or two separate fish that were caught and processed through the entire analytical scheme. One sample is identified as "WF (whole body) Spotted Sucker" and the other just as "Spotted Sucker", so we do not know if it is also whole body or not. This latter sample shows that no lipid was found (or none tested for?), while the first samples shows 5.9% lipid. The dioxin levels reported were not significantly different: 4.62 and 4.88 ppt TCDD--which suggests that only one fish was processed.

This species is not believed to be a targeted food or game fish, nor is it part of a common food chain that would lead to higher concentrations in predators. It is conceivable that it does occasionally enter the catch, and could be retained for consumption.

These reported levels of dioxin are well below the FDA level of concern (25 ppt) and support neither an emergency response nor any effluent limitation without much more data

regarding dioxin levels in game fish, consumption patterns, sources of dioxin, migration patterns, and other data required to develop any rational effluent limit. Some of that data will be generated per the agreement between EPD and the five Georgia mills and no effluent limits should be contemplated until additional data is acquired.

C. THE ESTIMATED COST OF MEETING THE ICS

1. Scope of Dioxin Reduction Program Necessary to Meet Permit Limit of 1.1 ppq

The draft permit sets a treated effluent discharge limit of 1.1 parts per quadrillion (ppq) of 2,3,7,8-TCDD (dioxin). The permit further states that samples testing "non detected" will be considered to indicate compliance even though the agency asserts the detection limit is currently about 10 ppq. In order to estimate the cost of compliance, we have assumed that the permit means what it says and that we will have to meet the 1.1 ppq limit. We have further assumed that we will have to implement all the measures referred to below to achieve the number, though at present we have no way of knowing whether this will be sufficient.

The dioxin content of our effluent is not known at this time. A retest of one of the samples gave about half the initial test. If the first test is correct we need better

than 95 percent reduction of dioxin. If the second test is correct we need about 90 percent reduction.

Little is known at this time regarding the effectiveness of the various proposed dioxin reduction measures. We believe that it would be necessary to implement all of the proposed measures in an effort to achieve the 90 to 95 percent reduction in the allowable time period. Our program could include:

a. Installation of oxygen delignification for all three pulping lines.

b. Substitute a maximum (over 50 percent) of chlorine dioxide for chlorine in the chlorine stage.

c. Install equipment for incremental addition of chlorine dioxide and some chlorine with high shear mixing between additions.

d. Install chemically assisted clarification following the secondary treatment aeration basins to maximize removal of carryover suspended solids.

The cost estimates are based on implementing the program outlined above.

2. Capital Cost Estimate For Dioxin Reduction Program

The following capital cost estimate is based on consultant work for other clients and previous estimates for similar types of Rayonier projects. There has not been time to prepare even a budget quality estimate for these comments. The accuracy should be in the range of plus or minus 25 percent or greater. It is accurate enough to demonstrate that this would be a very expensive program.

Process Changes	Cost $ Millions Mill Unit A	B	C	Total
1. Oxygen delignification including closed screen room.	20	20	25	65
2. New CLO_2 Plant	---	---	---	8
3. Chlorination stage modifications to allow maximum CLO_2 substitution.	1.1	1.1	1.1	3.3
Sub-Total	21.1	21.1	26.1	76.3

Tertiary Effluent Treatment	#1 Basin	#2 Basin	Total
Secondary Clarifier	4	4	8
Chemical Feed Systems for Clarification	0.2	0.3	0.5
Sludge Dewatering	3	3	6
Sludge Transport to Central Point	0.5	1	1.5
Central Incinerator	---	---	15
Sub-Total	6.7	8.3	31
Grand Total			107.3
Contingency			15.9
			$ 123.2

The oxygen delignification element includes the associated pulp washers and closure of the unbleached screen room as well as the oxygen delignification equipment. There are three separate pulping and bleaching lines which are often producing three separate grades of pulp. As a consequence, three complete oxygen delignification systems are needed. Two of these pulping lines produce substantial amounts of dissolving prehydrolized kraft grades. Our research group has serious reservations about whether oxygen delignification is compatible with dissolving pulp production. These reservations are discussed elsewhere. Dissolving pulp is far more complex to produce and is much more chemically pure than paper grade pulps made in most mills. Hence, the impact of chlorine reduction and other process changes can be severe.

Additional chlorine dioxide generation capacity will be needed. At this time, we are unsure as to the amount of new capacity that would be required. We included capital for a medium sized unit.

We are particularly concerned about the availability of caustic if our chlorine demand decreases significantly as chlorine and caustic are co-products. The production of all of our pulps, particularly the dissolving grades, requires the use of large quantities of caustic in order to achieve the required purity levels.

The chlorination stage modifications include four incremental chemical additions and four high shear mixers. These modifications would be required for all three bleaching lines.

There are two aeration basins which are located some distance apart. Two chemically assisted clarification (CAC) systems would be required, each with a sludge dewatering facility. We also included capital for a sludge incinerator as this sludge would be very difficult to dewater to a point where it could be placed in a landfill. We performed some bench scale CAC experiments on Jesup effluent when this technology was being considered for the proposed BCT guidelines. These experiments indicated that suspended solids increased rather than decreased as alum dosage was increased. Experiments by others indicated that 2000 ppm alum dosage, or higher, was necessary to significantly reduce suspended solids. The need for this system as well as the design parameters, would be highly dependent on the process changes made in the pulp mill. Operating costs are potentially very high, depending of course on the level of alum addition.

3. Operating Cost Estimate For Dioxin Reduction Program

The principal operating costs of this program will be associated with the capital expenditures; depreciation,

interest, and maintenance of the new equipment. EPA has used about twenty-two percent per year to cover these three items. This would be roughly $27.1 million of annual expense for a $123.2 million project.

Bleaching chemical costs will probably be somewhat reduced. Energy costs will be increased substantially. These factors will tend to balance each other so we have assumed other mill operating costs for the program will be a wash.

Although we use high quality specialty chemicals (defoamers, etc.) requiring the use of virgin oils, there could be higher costs associated with specially prepared defoamers, containing even lower concentrations of dioxin precursors. Our suppliers have told us any further reduction in precursors would be very expensive. It is also foreseeable that caustic prices will certainly increase as demand for chlorine is reduced.

Operating costs for the chemically assisted clarification following secondary treatment will be substantial. These costs will include operating labs, coagulating, and dewatering chemicals, auxiliary fuel for the sludge incinerator, and ash disposal costs. We do not have enough information to accurately estimate these costs but believe they will be in excess of $2 million per year and would exceed $20 million/year if high alum dosage is required. This gives a

total annual operating cost approaching $29 million per year with no allowance for the addition of alum.

4. Application of Oxygen Delignification to Kraft Dissolving Pulp Manufacture

Many of the grades produced at Jesup are dissolving pulps which denote highly purified products that are used as chemical raw materials in the production of rayon, viscose, acetate, and other products. The difference between these grades and the paper making pulp produced in most mills is chemical purity and control of the chain length of the cellulose polymer. Paper pulp, though white, retains lignins, hemi-celluloses and other impurities that would prevent any use as a chemical feed product. The production of dissolving pulp requires the removal of these impurities without destroying the cellulose polymer that is the sought after end product. The bleaching sequences developed over the years that can accomplish these goals all depend heavily on chlorine to meet the specific chemical characteristics of the various dissolving pulp grades produced at the Jesup mill. We know of no commercial processes that uses oxygen as a substitute for chlorine.

There is a real question on what effects oxygen delignification might have on Jesup dissolving pulp qualities. We would not expect the hemi-cellulose stabilizing phenomenon seen with sulfite pulps to be quite as problematic in kraft pulps. However, At this time, we do not know how much cellulose degradation might be caused by oxygen delignification and what will be the effect on end use properties. The majority of Jesup dissolving grades require very low S_{18} and S_{10} and very tight I.V. control. 1/ These parameters would be much harder to control if oxygen delignification causes additional cellulose degradation.

A major commitment in time and expense will be required to determine the effect of oxygen delignification on Jesup dissolving pulp quality. The following would have to be done:

a. Laboratory experiments would be required to produce oxygen delignified kraft dissolving pulp samples having the correct analytical specifications for all types of dissolving pulps produced at Jesup. These samples would then have to be tested in the laboratory for end use properties. Approximately two man-years of laboratory time is required.

1/ S_{18}, S_{10} and I.V. control refer to the degree of chemical purification. S_{18} and S_{10} are solubility in 18% and 10% caustic respectively and measures degree of cellulose refining. I.V. is intrinsic viscosity which indicates average chain length of the cellulose polymer.

b. If the above results are deemed promising by us and our customers, a pilot plant operation would be required to produce trial quantities for extended customer evaluation. This would require a major expense in installing the pilot oxygen delignification and result in production losses while the pilot trial was carried out. Approximately six calendar months would be required.

c. The trial pulp would then be shipped to customers and evaluated. This step can easily take six months to accomplish since a large number of our customers are overseas.

d. Once all the customers find the pulp acceptable, oxygen delignification could be designed and installed. The project might take about another 18 months to complete.

The cost of this development process has not been estimated.

There is no guarantee of success and failure of any of the steps above would force the mill to choose between the

loss of its most important business and possible non-compliance with its Dioxin effluent limit. It is also relatively clear that if this Hobson's Choice arises, it will happen well into the 3-year period provided for implementation of the ICS.

5. Comparison with Government Risk Avoidance Cost Guidelines

Since the EPA's suggested water quality standard of .013 ppq purports to be based on 10^{-6} cancer risk assessment, the company is being required to spend an estimated 123 million dollars to prevent a one in a million excess lifetime cancer risk. OMB recently rejected several EPA proposed regulations because they fell outside the range of $300,000 to $700,000 per statistical cancer case which EPA has historically used (BNA Environmental Reporter Vol.20, Number 6). Clearly a figure of 123 million dollars per calculated statistical cancer case is out of this range by several orders of magnitude, and would not pass OMB review if it was proposed as a federal regulation. Georgia should not apply a water quality standard that is completely out of proportion with the cost/benefit analysis that supports other health related regulations.

D. SUMMARY OF ERRORS CONTAINED IN EPA CANCER RISK POTENCY DETERMINATION

1. Toxicity of Dioxin

The human toxicity of dioxin (which means 2,3,7,8-tetrachloro-dibenzo-p-dioxin or TCDD throughout this document, but not any other congeners or isomers) has been overstated. Some animals, in particular the guinea pig but also the rat and mouse, are very susceptible to dioxin poisoning. Humans and other primates are less susceptible. There is no evidence for a carcinogenic effect of dioxin in laboratory animals below doses which cause severe systemic toxicity in rodent bioassays. There is no evidence that dioxin is a human carcinogen. The levels required to produce systemic toxic effects in rats are in the range of a dioxin concentration of 10^{-11}M (Molar) and above. It should be noted that the Georgia and U.S. Water Quality Criteria for 10^{-6} risk level correspond roughly to a concentration of 10^{-18}M.

The known human toxic effects of dioxin require large exposures and are well-defined. They include chloracne, which is almost diagnostic of a high dioxin exposure, as well as effects involving derangements of porphyrin metabolism and/or catabolism. The biochemical mechanism of these effects is not known. It is possible that the dioxin

molecule binds to active sites in enzymes or to other "receptors" which recognize molecules involved in the synthesis of the heme group, but research is required before this can be established or rejected. If this were indeed the mechanism involved, then it would explain the specificity and variety of dioxin's interactions with mammals, and be consistent with a dose-response mechanism showing a distinct threshold and highly non-linear behavior, as is seen in all experiments involving dioxin.

Since there have been several well-studied incidents of human exposure to large dioxin concentrations, with significant populations followed for more than 30 years in some cases, there are unlikely to be significant human toxicities which have not yet been recognized.

Thus, there is no scientific justification, nor any other evidence, for setting regulatory levels of dioxin based on any assumptions other than that it is a molecule with well-defined systemic toxic effects having clear thresholds.

2. Levels Measurable

A dioxin level in effluent of 1.1 parts per quadrillion cannot be measured reliably and reproducibly with current technology. (One part per quadrillion is 1

part in 10^{15} parts, or one gram per 10^{12} liters. This is less than one light wavelength compared with the distance to the moon; it is equivalent to a drop of alcohol in one hundred billion liters of water.

Thus, a level 1.1 parts per quadrillion cannot practically be regulated.

3. Surrogate Measurements

Many measurements of dioxin levels reported by the U.S. EPA involve measurements of surrogate molecules and often this is not clearly stated. These surrogates are other dioxins and dibenzofurans whose toxicities relative to dioxin are estimated and summed to give TEFs. We concur with the British Government in believing that there is insufficient evidence to estimate the toxicities of other molecules in these families, and no evidence justifying any extrapolation whatsoever to potential human carcinogenic risk from such mixtures.

Effluent dioxin concentrations are also inferred from measurements of these mixtures in fish, since the concentrations in effluents themselves are usually too small to measure, as are the actual concentrations, if any, of 2,3,7,8-TCDD itself in fish. Estimating the unmeasurable from surrogate measurements of molecules which

may have no known toxicities at the concentrations involved will inevitably lead to gross overestimates of risk. The danger of regulatory injustice is particularly great when a molecule, like dioxin, is ubiquitous so that the source of a particular dioxin molecule in a fish cannot be attributed to a particular effluent.

Thus, all measurements for site and risk assessment, when such are appropriate, must be direct measurements of dioxin itself, and any inferences based on TEFs or other surrogates must be clearly identified and then rejected. Effluent dioxin concentrations cannot be inferred from measurements of levels in fish, and regulatory action should not be based on measurements in fish.

4. Bioconcentration and Bioaccumulation Factors

Bioconcentration factors and bioaccumulation factors used in setting levels in Georgia and elsewhere are not reliable. Further research is required to determine valid factors and such factors should be site-specific.

Thus, bioaccumulation and bioconcentration factors must be measured directly, must be site-specific and cannot be based on inferred effluent concentrations. In particular, when effluent concentrations are inferred from measurements in fish the derivation of a bioconcentration

factor involves a circular argument. Derivation of such factors, if done at all, can only be based on proper scientific experiment, not on a series of inferences.

5. Evidence for Carcinogenicity

It is the potential carcinogenicity of dioxin which causes most concern for human health. We do not believe that dioxin is a human carcinogen. We believe that, if dioxin is an animal carcinogen at all it is so only under very restricted circumstances having no relevance whatsoever to human health. We also believe that the data on which the U.S. EPA's extrapolation of risk are based are chosen incompetently and analyzed using statistical tools illegitimately. A full analysis of the effects of such statistical treatment is being undertaken, as well as an analysis using the techniques recommended by the International Agency for Research on Cancer. In addition, a detailed analysis of all bioassay data is underway.

The following conclusions are believed to be sound:

All extrapolations used to form the U.S. EPA's regulatory policy for dioxin are based upon, or involve, the tumorigenic response to the highest dose of dioxin in the female rat liver as described by Kociba et al. This dose was highly toxic, causing severe hepatitis, as well as

premature death and excessive weight loss. It should never have been considered for extrapolation purposes, and it is significant that no lower dose showed a tumorigenic effect on the female rat liver. The author of the study has made these points, in publications and at meetings, many times. 2/ He repeated them to one of us (ADJR, meeting with Dr. Kociba at Dow Chemical Company, Midland, Michigan on July 17, 1989) and said, in addition that he did not consider dioxin a human carcinogen, nor did he feel that enough was known about the mechanism of dioxin toxicity to categorize its tumorigenic effect in the rat liver except that it was an effect with a sharp threshold and highly non-linear dose-response curve. Finally he concurred with our beliefs that dioxin should be regulated as a threshold toxin, and that his high dose data point for the female rat liver cannot be combined with possible tumorigenic responses at other sites or in other animal species. Dr. Kociba reiterated that dioxin was not an animal carcinogen except under the peculiar circumstances of his high dose response in the female rat.

2/ Kociba, R. J., "Animal Toxicity Studies of 2,3,7,8-Tetrachlorodibenzo-p-dioxin. Derivation of Lifetime Exposure Control Limit Recommendations for Humans" in Lowrance, William W., ed., "Public Health Risks of the Dioxins," Proceedings of a Symposium held in New York on October 19-20, 1983 by the Life Sciences and Public Policy Program of the Rockefeller University, pp. 77-98.

Kociba, Richard J., "Summary and Critique of Rodent Carcinogenicity Studies of Chlorinated Dibenzo-p-Dioxins" in Exner, Jurgen H., ed., "Solving Hazardous Waste Problems, Learning from Dioxins," Developed from a Symposium Sponsored by the Division of Environmental Chemistry at the 191st Meeting of the American Chemical Society, New York, New York, April 13-18, 1986, pp. 54-67.

Thus inferences based on Kociba's data point are illegitimate, as is any regulation derived by extrapolation from it. Such activities raise public fear without increasing public safety.

6. Levels Set

The British Government has suggested a guideline consumption of 1 picogram per kilogram body weight per day for people. (copy attached) By chance this is slightly less than the estimated dioxin intake from all sources for citizens of West Germany (and almost certainly anywhere else in the world). This guideline was set to protect against that toxic effect, potential teratogenesis, which the British Government considers to have the lowest threshold. A guideline to protect against potential carcinogenic effects was set at 10 pg/kg/day. Both guidelines incorporate conservative safety factors below the NOELS of 100.

If EPD believes it has to establish an effluent limit for dioxin at this time, we would suggest the agency use the lower guideline together with a site-specific bioaccumulation factor and dilution factor to derive a valid effluent limit. For example, using the dilution factor of 82 that EPD used to determine the proposed dioxin effluent limit, the bioconcentration factor of 5000 that EPA used to determine its

suggested water quality standard for dioxin, and assuming that 6.5 gm of fish are eaten daily (not a site-specific estimate), a body weight of 70 kg and intake of 2 liters of water per day, then a daily intake of 1 pg/kg would be achieved by drinking water with a concentration of 2.15 pg/liter; if no fish were eaten from the local water, then an intake of 1 pg/kg would be achieved by drinking water with a concentration of 35 pg/liter. The appropriate effluent concentration, given a dilution factor of 82 would then be 0.177 ppt for a fish eater and 2.87 ppt for a person who drank water but did not eat fish. To start with a different assumption on risk, use of the Cantox guideline factor of 10 pg/kg/day would generate effluent limits ten times higher, and other site specific values could drive the limit in either direction.

In summary, if Rayonier is required to meet the proposed permit, it will be required to pay about 123 million in capital costs and 29 million per year in operating costs to install and operate a process, that may prohibit the company from making its most important products in order to meet a water quality standard that:

1) cannot even be measured;

2) is based on erroneous assumptions relating to the cancer potency of Dioxin which, at best, ignored the data base that other U.S. Agencies and Nations have interpreted to set the risk orders of magnitude below EPA's assessment, and, at worse, selected data to fit the agency's starting assumption that Dioxin is a non-threshold carcinogen;

3) is based on a bioconcentration and fish consumption factor that may be entirely too conservative for Georgia;

4) has not been properly established under federal or state law; and

5) is not supported by fish samples taken downstream of pulp and paper mills resident to the state of Georgia, all of which are below the FDA level of concern.

In view of these facts, Georgia should establish its own water quality standard for Dioxin after an objective and thorough evaluation of all the data, and any permit modification should be based on that standard. To do otherwise is to place an unnecessary and very costly burden on this permittee for the sake of an EPA water quality standard which is clearly wrong.

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JUL 5 1989

June 28, 1989

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RE: Georgia 304(l) Challenge

Gentlemen:

I am enclosing a copy of the Petition which was filed on behalf of ITT Rayonier, Inc. on June 22, 1989.

Roger, you will note that there is an 18th challenge in this Petition, which was not included in any of the drafts that you saw. At 4:00 on the date on which the Petition was due, Russ Frye called me and suggested that we add a challenge to the listing of the Altamaha River and your facility on the Long List. His concern was that, in light of the NRDC's suit which argues that an ICS is needed for each facility on the Long List, we should challenge that listing as well. Because EPD argued in the RCRA suit that new points may not be raised by amending the Petition, we decided to add Russ' suggested challenge.

We had already served the Petition on the Attorney General and the Director, but had not yet filed it with the Hearing Officer. As such, we filed the revised Petition and then reserved the Attorney General and the Director. If you have any questions with regard to the Petition, please call me.

I remain,

Sincerely yours,

John Clay Spinrad

JCS/slj

Enclosure

RECEIVED
JUN 22 1989
BOARD OF NATURAL RESOURCES
ADMINISTRATIVE HEARING CLERK

BEFORE THE GEORGIA BOARD OF NATURAL RESOURCES

STATE OF GEORGIA

IN RE: ITT RAYONIER, INC.	§	Record No. _____
	§	
	§	NPDES Permit No. GA0003620

PETITION

COMES NOW ITT Rayonier, Inc. and petitions for a hearing as follows:

A. Jurisdiction and Nature of Petitioner's Interest.

Pursuant to O.C.G.A. § 12-5-43 and § 12-2-2(c)(2), Petitioner ITT Rayonier, Inc. ("Petitioner") requests a hearing to contest an action taken by the Director of the Georgia Department of Natural Resources (the "Director") on May 23, 1989. On that date, the Director added the Altamaha River to a list submitted by the Director to the United States Environmental Protection Agency ("EPA"), Region IV, pursuant to § 304(l)(1)(B) (the "Short List") of the Clean Water Act, 33 U.S.C. § 1251 et seq. (the "Act"). When he added that body of water to the Short List, the Director identified Petitioner's facility as a point source for which an individual control strategy would be implemented.

As the owner of a facility which has been identified pursuant to § 304(l) of the Act, Petitioner is an aggrieved or adversely affected person, as defined in O.C.G.A. § 12-2-2(c)(3). If that facility remains on the § 304(l) lists, Petitioner will be required to implement an individual control strategy, which will cause Petitioner injury in fact.

B. **Factual Background and Procedural History**.

The Water Quality Act of 1987 added § 304(l) to the Act. Section 304(l) of the Act requires, *inter alia*, that states submit to EPA a list of certain waters which the state does not expect will attain certain water quality standards despite compliance with all applicable technology-based requirements. For each such segment, § 304(l) requires that the state determine which point sources are discharging the toxic pollutants which are believed to be impairing water quality. Finally, § 304(l) requires that the state submit to EPA an individual control strategy for each point source to reduce the discharge of toxic pollutants. The lists and individual control strategies were to be submitted to EPA by February 4, 1989.

On January 12, 1989, EPA published proposed regulations to implement § 304(l), 54 *Fed. Reg.* 1300. On January 23, 1989, the Director submitted § 304(l) lists for the State of Georgia. On May 23, 1989, in response to comments from Region IV, the Director included the Altamaha River on an

addendum to the Short List, and identified Petitioner's facility as a point source for which an individual control strategy would be implemented. (A copy of this listing is attached hereto as Exhibit A.)

On June 1, 1989, the Director sent notice to Petitioner (1) that its facility would be identified on the 304(1) Short List; (2) that its NPDES permit would be reopened to assign new water quality-based permit limitations for 2,3,7,8-tetrachlorodibenzo-p-dioxin (hereinafter "2,3,7,8-TCDD"), which limits were based on EPA's health criteria; (3) that best management practices as formulated by EPA should be implemented at Petitioner's facility; (4) that Petitioner's NPDES permit had been modified to require monitoring of 2,3,7,8-TCDD levels in fish tissue; and (5) that the new 2,3,7,8-TCDD limitations must be achieved by June 4, 1992. The Director also enclosed those portions of Petitioner's NPDES permit which reflected the proposed modifications. (A copy of this letter and the draft permit revisions are attached hereto as Exhibit B.) On June 2, 1989, EPA published the final regulations implementing § 304(1) of the Act. 54 Fed. Reg. 23868 (June 2, 1989). The regulations were effective May 26, 1989. 54 Fed. Reg. 23895.

C. **Actions of the Director for Which Review is Sought.**

The Director erred in determining that the Altamaha River should be included on a list of waters in Georgia which

are not expected to achieve the applicable standards under § 303 of the Act after the requirements of § 301(b), 306 and 307(b) of the Act are met, due entirely or substantially to discharges from Petitioner's facility of 2,3,7,8-TCDD for the following reasons:

1.

Georgia has not adopted a water quality standard for 2,3,7,8-TCDD which comports with the requirements of § 303 of the Act, EPA's regulations promulgated thereunder and O.C.G.A. § 12-5-23(b)(9). As such, a determination cannot be made under § 304(l) concerning either the Altamaha River or Petitioner's facility.

2.

Georgia's narrative standard for water quality, Rule 391-3-6-.03(5)(d) of the Rules of the Georgia Department of Natural Resources, may not be used to incorporate EPA's suggested numerical water quality standard for 2,3,7,8-TCDD for purposes of listing waters of the State under § 304(l) of the Act.

3.

The Director implicitly adopted EPA's suggested numerical criterion for 2,3,7,8-TCDD in connection with compiling the § 304(l) lists without affording Petitioner its right to notice and comment concerning that numerical standard. In so doing, the Director has abridged Petitioner's rights to notice and comment established in the Georgia Administrative Procedure Act, O.C.G.A. § 50-13-4.

4.

The Director acted in a manner contrary to law in implicitly adopting EPA's suggested numerical criterion for 2,3,7,8-TCDD. That criterion comes from EPA's Quality Criteria For Water 1986, (EPA 440/5-86-001) (1986) (the "Gold Book"), which has never undergone the scrutiny of the notice and comment procedure afforded by federal administrative law.

5.

In implicitly adopting EPA's suggested numerical standard for 2,3,7,8-TCDD, the Director has failed to follow Department of Natural Resources Rule 391-3-6-.03(5)(iv)(2). Specifically, the Director has not determined that Petitioner's facility is a source of pollutants at levels sufficient to interfere with certain designated uses. If the Director has made the determination required by this Rule, such determination is incorrect, and was made without affording Petitioner its right to notice and comment concerning such a determination pursuant to O.C.G.A. § 50-13-4.

6.

In implicitly adopting EPA's suggested numerical standard for 2,3,7,8-TCDD, the Director has failed to follow Department of Natural Resources Rule 391-3-6-.03(5)(iv)(2). Specifically, the Director has failed to develop site specific criteria for 2,3,7,8-TCDD through toxic pollutant monitoring.

7.

The Director erred in placing the Altamaha River on the Short List because there has been no determination that a numerical standard for 2,3,7,8-TCDD will not be achieved after the requirements of §§ 301(b), 306, and 307(b) of the Act are met. Such a determination cannot be made, because neither the Director nor EPA has established technology-based requirements for the control of 2,3,7,8-TCDD from pulp and paper mills in general, or for Petitioner's facility in particular. This determination is an absolute prerequisite to a decision to list a body of water under § 304(l)(1)(B) of the Act.

8.

The Director had insufficient data to support his conclusion that there is a water quality standard violation for 2,3,7,8-TCDD due entirely or substantially to discharges from Petitioner's facility.

9.

The Director has failed to comply with § 304(l)(1)(C) of the Act in that the Short List does not provide the amount of 2,3,7,8-TCDD allegedly discharged by Petitioner into the Altamaha River.

10.

In identifying the Altamaha River and Petitioner's facility on Georgia's § 304(l) lists, the Director engaged in unlawful and improper rulemaking in violation of Petitioner's rights

under the Georgia Administrative Procedure Act. Petitioner was never notified of the Director's intention either to place the Altamaha River on the Short List or to identify Petitioner's facility on this list, and was never given an opportunity to comment on either action.

11.

In implicitly adopting EPA's suggested water quality standard for 2,3,7,8-TCDD, the Director failed to consider the technical means available for the reduction of pollution and the economic factors involved, as required by O.C.G.A. § 12-5-23(b)(9).

12.

The Director submitted the Short List identifying Petitioner's facility prior to the promulgation of the final regulations implementing § 304(l) of the Act. In so doing, the procedural protections afforded to Petitioner under the Administrative Procedure Act, 5 U.S.C. § 500 et seq., were circumvented.

13.

The Director failed to comply with the provisions of O.C.G.A. § 12-5-23(b)(9) in implicitly adopting a standard for 2,3,7,8-TCDD of .000013 ng/L. This numerical criterion is not the maximum degree of pollution permissible in accordance with the public interest in water supply, conservation of fish, game, and acquatic life, and agricultural, industrial and recreational uses.

14.

The Director erred in establishing the standard for 2,3,7,8-TCDD for Petitioner's facility at a 10^{-6} human health risk level.

15.

The Director erred in establishing a numerical standard for 2,3,7,8-TCDD based on EPA's Gold Book criterion, because that standard was ultimately premised on a single data point which is unable to support EPA's risk assessment analysis.

16.

The Director erred in establishing a numerical standard for 2,3,7,8-TCDD based on EPA's Gold Book criterion because that standard was formulated relying on a single species bioassay calculated without regard to human exposure data.

17.

The Director erred in establishing a numerical standard for 2,3,7,8-TCDD based on EPA's Gold Book criterion in light of EPA's acknowledgment, in a consent decree filed in Environmental Defense Fund v. Thomas, No. 85-0973 (D.D.C. July 27, 1988), that substantial additional information is needed before effluent regulations can be promulgated for 2,3,7,8-TCDD.

18.

The Director erred in identifying the Altamaha River and Petitioner's facility on the list submitted to EPA pursuant to § 304(l)(A)(ii) of the Act.

WHEREFORE Petitioner respectfully requests that the Hearing Officer enter an order deleting the identification of Petitioner's facility from the lists submitted by the Director to EPA, Region IV, pursuant to § 304(1) of the Act, 33 U.S.C. § 1314, as well as for such other further relief as is deemed just and necessary.

Respectfully submitted,

ARNALL GOLDEN & GREGORY

William H. Kitchens

John Clay Spinrad

Attorneys for Petitioner
ITT Rayonier, Inc.

55 Park Place, Suite 400
Atlanta, Georgia 30335
(404) 577-5100

JCS/69

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing Petition by hand delivery upon the following parties addressed as follows:

Mr. J. Leonard Ledbetter
Director
Georgia Department of Natural Resources
205 Butler Street, S.E.
Suite 1252
Atlanta, Georgia 30334

Michael J. Bowers, Esq.
Attorney General
Georgia State Law Department
132 State Judicial Building
Atlanta, Georgia 30334

This the 20th day of June, 1989.

John Clay Spinrad

JCS/69

205 Butler Street, S.E., Suite 1252, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
404/656-3500

May 23, 1989

FILE COPY

Mr. Greer C. Tidwell
Regional Administrator
U. S. Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, Georgia 30365

Re: Section 304(1) Lists

Dear Mr. Tidwell:

This is in response to your April 7, 1989 letter of preliminary comments concerning Georgia's Section 304) lists and the more recent April 20, 1989 and May 8, 1989 letters on dioxin. Also, receipt is acknowledged of Mike McGhee's May 8, 1989 letter on the Toxics Release Inventory. EPA has requested the State to perform additional screening to supplement Georgia's January 23, 1989 report.

The Georgia lists were submitted to your agency on January 23, 1989 to comply with the February 4, 1989 Federal Clean Water Act mandate. The lists were developed in accordance with the Georgia Rules and Regulations for Water Quality Control, specifically Rules 391-3-6-.03 and .06, as well as all EPA materials available at the time (EPA Gold Book, and Section 304(1) guidance materials, etc.). The listings comply with Section 304(1) requirements of the Federal Clean Water Act.

The Georgia Rules were publicly reviewed through a series of six meetings and a public hearing in conjunction with the development of the Section 304(1) listings. Notices for all individual control strategies or NPDES permits were published to satisfy public notice requirements. For each individual control strategy, the Georgia Department of Natural Resources (DNR) issued a public newspaper ad, sent copies of the notice to all interested parties on the mailing list, and transmitted an individual letter to each permittee involved.

After reviewing your agency's preliminary comments, only one item was identified that required follow-up by DNR. Your water quality permitting section has requested additional data on Thomaston Mills beyond the routine information normally provided under the NPDES permit delegation. Attached is the additional information on Thomaston Mills that should allow you to finalize the review of Georgia's January 23, 1989 report. Georgia DNR has not identified any issue mentioned in your April 7, 1989 letter that cannot be supported by the files. The four additional facilities being evaluated for potential listing by your agency were already covered in Georgia's screening during the development of the Section 304(1) lists. Accordingly, these four facilities are not appropriate for inclusion on Georgia's Section 304(1) short list.

EXHIBIT

A

DNR also reviewed the preliminary comments provided in your letter for the individual control strategies of each of the facilities identified on the short list. Again, no revisions to the January 23, 1989 report were identified from this review. Attachment No. 1 provides a detailed project by project response to your preliminary comments.

In response to your April 20, 1989 and May 8, 1989 letters concerning the treatment of dioxin at pulp and paper mills that employ chlorine bleaching, this will bring you up to date with our current plans. DNR has requested the five bleached kraft pulp and paper mills in Georgia to develop a uniform sampling/testing protocol for dioxin monitoring. Samples of representative game fish and bottom feeding fish will be collected by an outside consultant from locations upstream and downstream of the wastewater discharges from these five mills. Samples will also be collected for comparison from the Chattahoochee River below Atlanta and from the Oconee River below Athens, areas affected by urban activities but not by pulp mills. Sample collection will take place between June and October of this year. Whole body samples as well as fish fillets will be analyzed for dioxin by an approved contract laboratory. Final reports will be submitted to DNR within 3 to 4 months following sample collection.

DNR reviewed the March 15, 1989 National Final Guidance on Section 304(1) Listing and Permitting of Pulp and Paper Mills that was referenced by your April 20, 1989 letter. This assessment has concluded that all of the five facilities qualify as candidates for the "short list." An addendum to the "short list" is attached to include the five Georgia bleach kraft pulp and paper mills.

The national guidance also requires the five pulp and paper mills to be identified on the Section 304(1) "long list." DNR has prepared the attached addendum to the "long list" which identifies the receiving waters below three of Georgia's five pulp and paper mills that use chlorine bleaching. The other two mills were listed on Georgia's previous Section 304(1) "long list" submittal.

The NPDES draft permits for the five mills will be developed prior to June 4, 1989. DNR will be reopening the NPDES permits to assign new water quality based limits for dioxin and to recommend best management practices for chlorine minimization and total suspended solids reductions. The schedule for completion will be June 4, 1992. If the fish sampling results show levels of dioxin exceeding 25 ppt in the edible portions of the flesh, then the permit will be reopened once again and the limit for dioxin made more stringent.

ATTACHMENT NO. 1

Responses to EPA's April 7, 1989 Preliminary Review Comments

Burlington Industries, Inc.

Based on a 7Q10 of 22.0 cfs and an average plant flow of 1.91 MGD, the maximum daily limit for lead was calculated to be 9.8 µg/l. The permit limit for lead was adjusted to the EPD laboratory detection level of 25 µg/l for end of pipe monitoring, according to the procedures identified by the December 7, 1988 Water Quality Standards and Permit Regulations. Based on Mr. John Marlar's letter dated January 10, 1989, EPA had no objection to the final permit as written.

Production Anodizing Corporation, Plant No. 1

Based on a 7Q10 of 0.0 cfs, the maximum daily limit for silver was calculated to be 0.12 µg/l. The permit limit for silver was adjusted to the EPD laboratory detection level of 10 µg/l for end of pipe monitoring, according to the procedures identified by the December 7, 1988 Water Quality Standards and Permit Regulations. As stated on page 4 of the permit, compliance with this limit is required on or prior to January 1, 1990. Based on Mr. John Marlar's letter dated January 10, 1989, EPA had no objection to the final permit as written.

Production Anodizing Corporation, Plant No. 2

Based on a 7Q10 of 0.0 cfs, the maximum daily limit for mercury was determined to be 0.01 µg/l. The permit limit for mercury was adjusted to the EPD laboratory detection level of 0.5 µg/l for end of pipe monitoring, according to the procedures identified by the December 7, 1988 Water Quality Standards and Permit Regulations. As stated on page 4 of the permit, compliance with this limit is required on or prior to January 1, 1990. Based on Mr. John Marlar's letter dated January 10, 1989, EPA had no objection to the final permit as written.

U. S. Marine Corps Logistics Base

The calculations were based on a 7Q10 of 0.0 cfs, and a moderate range for hardness of 100 to 199 mg/l. The calculated maximum daily limits and the final permit limits are as follows:

Parameter	Calculated Maximum Daily Limit	Final Permit Limit
Lead	3.2 µg/l	25 µg/l
Cadmium	1.1 µg/l	10 µg/l
Copper	12 µg/l	20 µg/l
Cyanide	5.2 µg/l	25 µg/l

The final permit limits were adjusted to the EPD laboratory detection level, as required by Georgia Regulations.

Delta Air Lines, Inc.

Based on a 7Q10 of 0.45 cfs, an average plant flow of 0.60 MGD, and a stream hardness of less than 100 mg/l, the permit limits for cadmium, copper, and silver were calculated to be 1.04 µg/l, 9.62 µg/l, and 0.18 µg/l, respectively. The permit limits for cadmium, copper, and silver were adjusted to the EPD laboratory detection level of 10 µg/l, 20 µg/l, and 10 µg/l, respectively. Lead and cyanide did not show up on the most recent permit application at levels equal to or greater than the EPD detection levels of 25 µg/l, and are therefore not required to be incorporated into the permit.

As provided in Georgia's Water Quality Standards and Permit Regulations, no permit limit for nickel is required if the nickel concentration in the stream is less than fifty percent of the criteria concentration. The permit includes nickel monitoring three times per week, which is more stringent than the annual monitoring provision of the regulations.

Chicopee

Based on a 7Q10 of 0.08 cfs, an average plant flow of 0.21 MGD, and a moderate range for hardness of 100 to 199 mg/l, the maximum daily limit for copper was calculated to be 14.9 µg/l. The permit limit for copper was adjusted to the EPD laboratory detection level of 20 µg/l for end of pipe monitoring, according to the procedures identified by the December 7, 1988 Water Quality Standards and Permit Regulations. Based on Mr. John Marlar's letter dated January 10, 1989, EPA had no objection to the final permit as written.

Coats and Clark, Inc.

Based on a 7Q10 of 1.5 cfs, an average plant flow of 2.5 MGD, and a hardness level of less than 100 µg/l, the maximum daily limit for copper was calculated to be 9.0 µg/l. The permit limit for copper was adjusted to the EPD laboratory detection level of 20 µg/l, according to the procedures identified by the December 7, 1988 Water Quality Standards and Permit Regulations.

Robins Air Force Base

The calculations for Outfall 008 were based on a 7Q10 of 0.0 cfs, an average plant flow of 0.46 MGD, and a moderate range for hardness of 100 to 199 mg/l. The calculated permit limits and the final permit limits are as follows:

Parameter	Calculated Limit	Final Limit
Cadmium	1.1 µg/l	10 µg/l
Cyanide	5.2 µg/l	25 µg/l
Lead	3.2 µg/l	25 µg/l
Silver	0.12 µg/l	10 µg/l

The final permit limits were adjusted from the calculated limits to obtain enforceable permit limits as provided for in the Georgia Rules and Regulations for Water Quality Control.

The calculations for Outfall 009 were based on a 7Q10 of 0.04 cfs, an average plant flow of 1.54 MGD, and a moderate range for hardness of 100 to 199 mg/l. The calculated permit limits and the final permit limits are as follows:

Parameter	Calculated Limit	Final Limit
Lead	3.3 µg/l	25 µg/l
Silver	0.12 µg/l	10 µg/l

The final permit limits were adjusted to the EPD laboratory detection levels to achieve enforceable permit limits in accordance with the December 7, 1988 Georgia Water Quality Standards and Permit Regulations.

The William Carter Company

Based on a 7Q10 of 0.01 cfs, an average plant flow of 0.44 MGD, and a hardness level of less than 100 mg/l, the maximum daily limits for cadmium and copper were calculated to be 0.7 µg/l and 6.6 µg/l, respectively. The permit limits were increased to the EPD laboratory detection levels of 10 µg/l and 20 µg/l, respectively, for end of pipe monitoring, according to the procedures identified by the December 7, 1988 Water Quality Standards and Permit Regulations.

Dundee Mills

Based on a 7Q10 of 1.5 cfs, an average plant flow of 0.975 MGD, and a hardness level of less than 100 mg/l, the maximum daily limits for copper and zinc were calculated to be 13 µg/l and 119 µg/l, respectively. The permit limit for copper was adjusted to the EPD laboratory detection level of 20 µg/l for end of pipe monitoring, according to the procedures identified by the December 7, 1988 Water Quality Standards and Permit Regulations.

The William L. Bonnell Company, Inc.

Based on a 7Q10 of 0.0 cfs and a hardness level of greater than 200 mg/l (metal finishing effluent with no dilution of stream flow at 7Q10), the reported nickel concentration of 100 µg/l is less than fifty percent of the criteria concentration of 280 µg/l. By letter dated December 19, 1988, the company is being required to perform additional chemical analyses for nickel, as well as three other chemicals not mentioned in EPA's letter.

Armstrong World Industries

None of the parameters listed in EPA's letter (lead, mercury, silver and beryllium) were found at concentrations equal to or greater than EPD's laboratory detection level for those parameters.

Savannah Electric - Port Wentworth

In accordance with Georgia's December 7, 1988 Water Quality Standards and Permit Requirements, whole effluent biological monitoring is required by the company to determine if beryllium is being discharged in toxic amounts.

The EPA human health criteria for beryllium is currently under review for revisions. Also, the Savannah River provides ample assimilative capacity to protect for human health at greater than 10^{-5} risk level, based on the most current EPA Gold Book criteria for human health and the trace amounts of beryllium being discharged by Savannah Electric.

Conyers Almand Branch WPCP

Cadmium and cyanide limitations were not included in the permit since the data for those parameters were less than EPD laboratory detection limits.

In accordance with Georgia's December 7, 1988 Water Quality Standards and Permit Regulations, the maximum daily limit was adjusted to the EPD laboratory detection limits, to ensure an enforceable permit limit.

ADDENDUM

SECTION 304(l)(A)(ii) - LONG LIST

This is an all inclusive list of waters within the State which require implementation of specific actions to alleviate to consistently meet all of the goals of the Federal Clean Water Act.

BASIN/WATER BODY	LOCATION	WATER USE CLASSIFICATION	PROBLEM ISSUES: CRITERIA IMPACTED[A]	PROBLEM ISSUES: PRINCIPAL SOURCE[AA]	ACTIONS TO ALLEVIATE
ALTAMAHA					
Altamaha River (2 miles)	Downstream of ITT-Rayonier	Fishing	Dioxin	I	Fish tissue sampling required to consistently ensure that dioxin is not present at toxic levels.
FLINT					
Flint River (2 miles)	Downstream of Procter & Gamble Cellulose Co.	Fishing	Dioxin	I	Fish tissue sampling required to consistently ensure that dioxin is not present at toxic levels.
SAVANNAH					
Savannah River (2 miles)	Downstream of Federal Paper Board Co.	Fishing	Dioxin	I	Fish tissue sampling required to consistently ensure that dioxin is not present at toxic levels.

ADDENDUM

SECTION 304(l)(B) - SHORT LIST

This is a subset of the long list which identifies specific point source dischargers of Section 307(a) chemical constituents in toxic amounts and identifies the amount of the pollutant that exceeds water quality standards, and the proposed individual control strategies to produce a reduction in the amount of the chemical constituents that are discharged.

		PROBLEM ISSUES			
Basin/Water Body	Location	Criteria Impacted	Pounds Per Day of Chemical Constituent Discharged	Percentage Over Water Quality Based Permit Limit	Individual Control Strategies
ALTAMAHA					
Altamaha River (2 miles)	Downstream of ITT-Rayonier in Jesup (GA 0003620)	Dioxin	.000012	95	Notify company and issue draft permit prior to June 4, 1989. Initiate BMP's for chlorine and TSS reductions, and assign water quality based permit limit for protection from EPA's 10^{-6} human health risk level (.000013 ng/l). Require each mill to meet by June 4, 1992. Upon completion of the fish sampling/testing protocol, further tighten the permit limit where levels of dioxin in fish tissue exceed 25 ppt.
Turtle River, Academy Creek, and Brunswick River (6 miles)	Downstream of Brunswick Pulp and Paper in Brunswick (GA 0003654)	Dioxin	.000013	97	Notify company and issue draft permit prior to June 4, 1989. Initiate BMP's for chlorine and TSS reductions, and assign water quality based permit limit for protection from EPA's 10^{-6} human health risk level (.000013 ng/l). Require each mill to meet by June 4, 1992. Upon completion of the fish sampling/testing protocol, further tighten the permit limit where levels of dioxin in fish tissue exceed 25 ppt.

FLINT					
Flint River (2 miles)	Downstream of Procter & Gamble Cellulose Co. in Oglethorpe (GA 0049336)	Dioxin	.000001	91	Notify company and issue draft permit prior to June 4, 1989. Initiate BMP's for chlorine and TSS reductions, and assign water quality based permit limit for protection from EPA's 10^{-6} human health risk level (.000013 ng/l). Require each mill to meet by June 4, 1992. Upon completion of the fish sampling/testing protocol, further tighten the permit limit where levels of dioxin in fish tissue exceed 25 ppt.
SAVANNAH					
Savannah River (2 miles)	Downstream of Federal Paper Board in Augusta (GA 0002801)	Dioxin	.000004	88	Notify company and issue draft permit prior to June 4, 1989. Initiate BMP's for chlorine and TSS reductions, and assign water quality based permit limit for protection from EPA's 10^{-6} human health risk level (.000013 ng/l). Require each mill to meet by June 4, 1992. Upon completion of the fish sampling/testing protocol, further tighten the permit limit where levels of dioxin in fish tissue exceed 25 ppt.
ST. MARYS					
North River (2 miles)	Downstream of Gilman Paper Co. in St. Marys (GA 0001953)	Dioxin	.000002	98	Notify company and issue draft permit prior to June 4, 1989. Initiate BMP's for chlorine and TSS reductions, and assign water quality based permit limit for protection from EPA's 10^{-6} human health risk level (.000013 ng/l). Require each mill to meet by June 4, 1992. Upon completion of the fish sampling/testing protocol, further tighten the permit limit where levels of dioxin in fish tissue exceed 25 ppt.

Georgia Department of Natural Resources
205 Butler Street, S.E., Suite 1252, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
404/656-3500

June 1, 1989

EXHIBIT

B

Mr. Robert A. McCrary
Manager of Environmental Affairs/Pulp Products
Southeastern Operations
ITT Rayonier, Inc.
P. O. Box 207
Jesup, Georgia 31545-0207

Re: NPDES Permit No. GA 0003620
Dioxin Limitations

Dear Mr. McCrary:

The Department of Natural Resources has completed the review of the dioxin data collected for the five Georgia bleached kraft pulp and paper mills in conjunction with the U. S. EPA National Bioaccumulation Study and the U. S. EPA/Paper Industry Cooperative Dioxin Study. On April 20, 1989, the U. S. EPA transmitted their March 15, 1989 National Final Guidance (copy enclosed for your information). Based upon the discharge flows from your mill and estimated receiving stream flows, the calculated dioxin instream waste concentration exceeds the national guidance criteria which is based on a 10^{-6} human health risk level.

To comply with the national guidance on dioxin, this Department is proposing the following:

a. All five bleached kraft pulp mills will be placed on the Section 304(l) Short List which defines the point source dischargers of toxic chemicals that exceed water quality standards.

b. The NPDES permits will be reopened to assign the new water quality-based permit limit for dioxin. The proposed maximum daily limit is based upon the EPA 10^{-6} human health criteria as specified above. In addition, EPA Region IV has transmitted an interim control guidance policy which recommends that Best Management Practices (BMP's) be implemented to minimize chlorine and total suspended solids levels. It is suggested that you implement these Best Management Practices to the extent practicable for your facility.

c. In addition, language has been inserted into the NPDES permit to require the continued monitoring of dioxin levels in fish tissue, in accordance with the uniform fish sampling/testing protocol proposed by the Georgia Pulp and Paper Association and approved by the Department.

d. Your company will be required to meet the new dioxin limitations by June 4, 1992, the date mandated by the Federal Clean Water Act.

Enclosed is a copy of the portions of your current NPDES permit with the proposed modifications. The Department should be notified if your company anticipates any difficulty in meeting the new requirements.

Sincerely,

J. Leonard Ledbetter
Commissioner

JLL:ajk
Enclosure

TE OF GEORGIA
ARTMENT OF NATURAL RESOURCES
IRONMENTAL PROTECTION DIVISION

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning July 28, 1989 and lasting through June 3, 1992, the permittee is authorized to discharge from outfall(s) serial number(s) 001 and 002 - Process wastewater, sanitary wastes, and stormwater runoff.

   Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic (Specify Units)	Discharge Limitations				Monitoring Requirements		
	Mass Based		Concentration Based				
	Daily Avg.	Daily Max.	Daily Avg.	Daily Max.	Measurement Frequency	Sample Type	Sample Location
Dioxin (2,3,7,8-TCDD)[1]	-	-	-	-	Quarterly	24-Hour Composite	Effluent[2]

1. The permittee shall adhere to the analytical protocol described in Appendix C of the U. S. EPA/Paper Industry Cooperative Dioxin Screening Study (EPA 440/1-88-025, March 1988) when analyzing wastewater effluent samples for 2,3,7,8-TCDD.

2. The effluent sample location shall be defined as the discharge stream after treatment, but prior to mixing with any other waters.

DRAFT

TE OF GEORGIA
ARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

2. During the period beginning June 4, 1992 and lasting through December 1, 1992, the permittee is authorized to discharge from outfall(s) serial number(s) 001 and 002 - Process wastewater, sanitary wastes, and stormwater runoff.

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic (Specify Units)	Discharge Limitations				Monitoring Requirements		
	Mass Based		Concentration Based				
	Daily Avg.	Daily Max.	Daily Avg.	Daily Max.	Measurement Frequency	Sample Type	Sample Location
Dioxin (2,3,7,8-TCDD)*	-	-	-	1.1 ppq[3]	Quarterly	24-Hour Composite	Effluent[2]

1. The permittee shall adhere to the analytical protocol described in Appendix C of the U. S. EPA/Paper Industry Cooperative Dioxin Screening Study (EPA 440/1-88-025, March 1988) when analyzing wastewater effluent samples for 2,3,7,8-TCDD.

2. The effluent sample location shall be defined as the discharge stream after treatment, but prior to mixing with any other waters.

3. This water quality-based discharge limitation is below the generally accepted level of detection of 10 ppq (ppq = parts per quadrillion) for dioxin in effluents. Therefore, for the purposes of this permit, the detection level of 10 ppq shall be considered as the threshold for determining compliance/non-compliance with the discharge limitation.

DRAFT

6. The permittee shall monitor for dioxin (2,3,7,8-TCDD) and furan (2,3,7,8-TCDF) in ambient fish tissue in the facility's receiving stream. The dioxin monitoring program shall be conducted in accordance with the Study Plan To Conduct Dioxin Monitoring In Fish Tissue From The Vicinity Of Five Georgia Bleached Kraft Mills, March 31, 1989. The sampling/testing program shall be conducted on an annual basis, with annual reports submitted to the Director.

7. The Director recommends that the permittee develop and implement Best Management Practices (BMP's) for chlorine minimization in the pulp bleach plant and for total suspended solids minimization in the final effluent. Furthermore, the Director recommends that such BMP's include the necessary studies to determine if process modifications to the bleach plant and/or additional effluent controls are feasible for the permittee's facility. Should the permittee decide that such studies are warranted, these studies shall be conducted and a report of their findings submitted to the Director by December 31, 1990. To the maximum extent practicable, the permittee shall implement the findings of the chlorine minimization and total suspended solids minimization studies by no later than June 4, 1992.

DIOXIN SCREENING SUMMARY

Pulp & Paper Discharging Facility	Design Discharge Flow (cfs)	Annual Average Stream Flow (cfs)	Measured Effluent Concentration (ng/l)	Estimated Pounds Per Day Discharged	Dilution Factor	Computed* Ambient Concentration (ng/l)	EPA 10^{-6} Human Health Criteria (ng/l)	Candidate For Short Listing	New Permit Limits** (ppq)
ITT Rayonier, Inc. Jesup, Ga.	95.5	7776	.0235	1.2×10^{-5}	82	.00029	.00001.3	Yes	1.1
Federal Paper Board Augusta, Ga.	45	6467	.0160	3.9×10^{-6}	149	.00011	.00001.3	Yes	1.9
Proctor & Gamble Cellulose Co. Oglethorpe, Ga.	20	1711	.0120	1.3×10^{-6}	87	.00014	.00001.3	Yes	1.1
Gilman Paper Co. St. Marys, Ga.	62	N/A	.0065	2.2×10^{-6}	10 (Est)	.00065	.00001.3	Yes	0.2
Brunswick Pulp	87	N/A	.0300	1.3×10^{-5}	10 (Est.)	.00300	.00001.3	Yes	0.1

* Computed ambient concentration is obtained by dividing the measured concentration in the effluent of each discharger by the dilution factor.

** All limits are below the generally accepted level of detection of 10 ppq for effluent.

From GEPD
6/1/89

SUMMARY OF DIOXIN DATA FOR GEORGIA'S PULP AND PAPER MILLS WHICH EMPLOY CHLORINE BLEACHING

FACILITY	CONCENTRATION IN WHOLE BODY FISH (ppt) (Total Dioxin Equivalents)*	CONCENTRATION IN SLUDGE (ppt) (2378-TCDD only)	CONCENTRATION IN EFFLUENT (ppq) (2378-TCDD only)**
Procter & Gamble Cellulose Co. GA 0049336 Oglethorpe	2.81*** 2.22	2.6	12.0
Gilman Paper Company GA 0001953 St. Marys	0*** 0.08	0.22	6.5 ND@ 6.5
ITT Rayonier, Inc. GA 0003620 Jesup	11.20	–	24.0 23.0
Federal Paper Board Co. GA 0002801 Augusta	6.70 3.65	0.68	16.0
Brunswick Pulp and Paper GA 0003654 Brunswick	0.99 1.66 30.35 1.59 1.32 28.01	62.0	30.0 30.0

* The FDA action level for dioxin in fish tissue is 25 ppt.

** EPA has established 10 ppq as the detection limit for dioxin in effluents.

*** Concentration is for fish fillets.

EXHIBIT B

RECEIVED
JUL 24 1989
BOARD OF NATURAL RESOURCES
ADMINISTRATIVE HEARING CLERK

BEFORE THE
GEORGIA BOARD OF NATURAL RESOURCES

STATE OF GEORGIA

IN RE: ITT RAYONIER, INC. § § § § Record No. DNR-EPD-WQ-AH 9-89

PETITIONER'S STATEMENT OF MATERIAL FACTS AS TO WHICH THERE EXISTS A DISPUTE

COMES NOW petitioner ITT Rayonier, Inc., (hereinafter "Petitioner" or "ITT") and files this, its statement of material facts as to which there exists a dispute. As set forth in Petitioner's response to the Director's Motion for Summary Determination, the Director has failed to state upon which undisputed facts his motion is premised. However, pursuant to Department of Natural Resources Rule 391-1-2-.16(2), Petitioner is required to include a statement of material facts as to which it contends there exists a genuine issue for determination.

1.

On May 30, 1989, the Director identified the Altamaha River on lists submitted to the United States Environmental Protection Agency, Region IV, pursuant to Section 304(l) of the Clean Water Act (the "Act"), 33 U.S.C. § 1251 et seq.

2.

When he added that body of water to the 304(l) lists, the Director identified Petitioner's facility as a point source for which an individual control strategy would be implemented.

3.

As the owner of facility which has been identified pursuant to Section 304(l) of the Act, Petitioner is an aggrieved or adversely affected person, as defined in O.C.G.A. § 12-2-2(c).

4.

If Petitioner's facility remains on the Section 304(l) lists, Petitioner will be required to implement an individual control strategy, which will cause Petitioner injury in fact.

5.

The Director listed Petitioner's facility on the 304(l) lists because he found the facility discharged 2,3,7,8-TCDD in amounts which, in whole or in part, caused a violation of the water quality standard for 2,3,7,8-TCDD.

6.

As of May 23, 1989, Georgia did not have a numerical water quality standard for 2,3,7,8-TCDD. In fact, the applicable regulation concerning 2,3,7,8-TCDD required the Director to determine if Petitioner's facility was a source of pollutants at levels sufficient to interfere with certain designated uses, and if so, to develop site-specific criteria for 2,3,7,8-TCDD through toxic pollutant monitoring.

7.

The numerical standard implicitly adopted by the Director with regard to Petitioner's facility comes from EPA's Quality Criteria For Water 1986 (EPA 440/5-86-001) (1986) (the "Gold Book"), which has never undergone the scrutiny of the notice and comment procedure afforded by federal administrative law.

8.

There has been no determination by the Director that a water-quality standard for 2,3,7,8-TCDD will not be achieved after the requirements of §§301(b), 306, and 307 (b) of the Clean Water Act are met.

9.

The Director has not established technology-based requirements for the control of 2,3,7,8-TCDD from pulp and paper mills in general, or for Petitioner's facility in particular.

10.

The Director had insufficient data to support his conclusion that there was a water quality standard violation for 2,3,7,8-TCDD due entirely or substantially to discharges from Petitioner's facility.

11.

In identifying Petitioner's facility on the 304(l) lists, and implicitly adopting EPA's suggested water quality criterion for 2,3,7,8-TCDD, the Director failed to consider the technical means available for the reduction of pollution and the economic factors involved.

12.

In identifying Petitioner's facility on the 304(l) list, the Director failed to determine if .000013 ng/L is the maximum degree of pollution permissible in accordance with the public interest in water supply, conservation of fish, game, and aquatic life, and agricultural, industrial and recreational uses.

13.

The Director failed to provide Petitioner with adequate notice and an opportunity to comment with regard to the identification of Petitioner's facility on the 304(l) lists, as well as with regard to the implicit adoption of EPA's numerical standard for 2,3,7,8-TCDD.

14.

As a point source identified pursuant to §304(l)(1)(D), Petitioner will be required to implement an individual control strategy. Petitioner must be in compliance with the individual control strategy as soon as possible, but no later than three years following the date it is promulgated.

15.

The individual control strategy provides that best management practices be initiated in order to reduce levels for chlorine and for total suspended solids. ITT Rayonier currently estimates that purchasing and installing the equipment required to implement the best management practices

(BMP) set forth in the ICS will cost ITT Rayonier, Inc. approximately $123,000,000.00. The estimate is based on technology similar to that itemized in the emergency rule amending Georgia Department of Natural Resources Rule 391-3-6-.03(5)(d) which was issued on June 30, 1989.

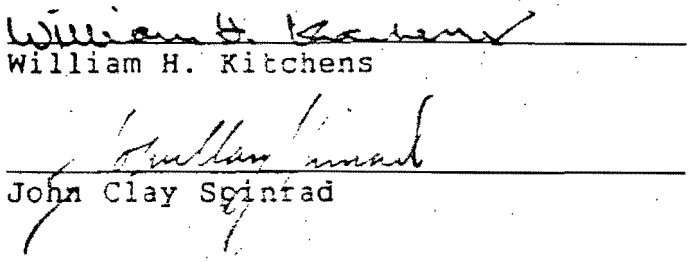
16.

It is not known at this time if the use of the required BMP will effect a reduction in 2,3,7,8-TCDD such that it will meet the effluent standard required to meet the Water Quality Standard set forth in the individual control strategy, .000013 ng/L.

17.

Chlorine bleaching of wood pulp is believed to be the source of the traces of 2,3,7,8-TCDD found in the plant's effluent. Should application of best management practices fail to achieve the necessary discharge limits, elimination of chlorine all together may be required and technology does not currently exist to produce a large number of the plants products with chlorine. Furthermore, development of such technology may not be successful and even if successful is a multiyear process. The 304(l) listing imposes a deadline for compliance that does not permit the new technology development described above.

Respectfully submitted,



William H. Kitchens

John Clay Scinrad

ARNALL GOLDEN & GREGORY
55 Park Place, Suite 400
Atlanta, Georgia 30335
(404) 577-5100
Attorneys for ITT Rayonier, Inc.

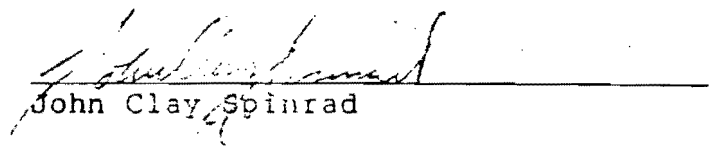
CERTIFICATE OF SERVICE

I do hereby certify that I have this day served the within and foregoing **Petitioner's Statement Of Material Facts As To Which There Exists A Dispute**, prior to filing the same, by depositing a copy thereof, postage prepaid, in the United States Mail, properly addressed upon:

Robert S. Bomar, Esq.
Senior Assistant Attorney General
132 State Judicial Building
Atlanta, Georgia 30334

J. Michael Davis
Assistant Attorney General
132 State Judicial Building
Atlanta, Georgia 30334

This 24th day of July, 1989.



John Clay Spinrad

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JUL 24 1989
BOARD OF NATURAL RESOURCES
ADJUDICATORY HEARING CLERK

BEFORE THE
GEORGIA BOARD OF NATURAL RESOURCES

STATE OF GEORGIA

IN RE: ITT RAYONIER, INC. § Record No. DNR-EPD-WQ-AH 9-89

PETITIONER'S RESPONSE TO MOTION FOR SUMMARY DETERMINATION

COMES NOW ITT Rayonier, Inc., (hereinafter "Petitioner") and responds to the Motion of the Director of the Environmental Protection Division of the Department of Natural Resources of the State of Georgia (the "Director") for Summary Determination, pursuant to Rules 391-3-1-.16 and 391-3-1-.17, as follows:

Introduction

In his Motion for Summary Determination, the Director sets forth three arguments. First, the Director contends that his action in listing the Altamaha River and Petitioner's facility under Section 304(1) of the Clean Water Act (the "Act"), 33 U.S.C. § 1314(1), is not reviewable. Second, the Director argues that, even if the listing is subject to review, Petitioner is not aggrieved or adversely affected by the listing, and therefore lacks standing to bring this action. Finally, the Director argues that Petitioner will not be

aggrieved or adversely affected until such time as a draft NPDES permit is issued, and therefore Petitioner should wait until that time to challenge the Director's actions. As set forth below, each of these arguments fails, and the motion should be denied.

Argument and Citations of Authority

A. The Director's Motion Fails to Conform to the Rules Governing Motions for Summary Determination and Should Be Dismissed.

At the outset, Petitioner notes that the Director has wholly failed to abide by the rules governing motions for summary determination. Rule 391-1-2-.16(1) provides, in pertinent part, that

> Any party may move, based on supporting affidavits or other probative evidence, for summary determination in its favor upon any of the issues being adjudicated on the basis that there is no genuine issue of material fact for determination. There shall be included in the motion or annexed thereto a short and concise statement of each of the material facts as to which the moving party contends there is no genuine issue for determination.

The Director has failed to include a statement of each of the material facts as to which he contends there is no genuine issue for determination and the motion is, therefore, defective. Nevertheless, Petitioner has attempted, in an effort to comply with Rule 391-1-2-.16(2), to state those material facts which it believes are in dispute. (A statement of material facts in dispute is filed herewith.)

The requirement of a statement of undisputed material facts is not just a formality; it is an integral portion of a Motion For Summary Determination. Without it, both the Petitioner and the Administrative Law Judge must speculate as to which facts the Director is relying on in support of his motion, and therefore cannot address the central issue of whether there are material issues of fact in dispute. For this reason, the motion should be dismissed.

B. The Listing of the Altamaha River and Petitioner's Facility on the 304(l) Lists is an Action Which May Be Challenged by Petitioner.

The Director's first argument is one of statutory construction. He argues that, when read together, O.C.G.A. §§ 12-5-43(a) and 12-2-2(c) permit Petitioner to challenge only administrative orders issued by the Director or those actions of the Director which deal with permits or variances. This argument fails because it is contrary to the plain language of both of those statutes, as well as the implementing regulations promulgated by the Department of Natural Resources.

The language of O.C.G.A. §§ 12-5-43(a) and 12-2-2(c)(2) could not be clearer: both of these sections refer to a person's right to challenge <u>any order or action</u> of the Director which adversely affects that person. These code sections do not limit what types of actions or orders of the Director may be challenged; rather, they require that a petitioner must be

aggrieved or adversely affected by the order or action. If that threshold is met, the order or action may be challenged. A more restrictive reading is contrary to the clear language of the statute, and drastically limits a person's ability to obtain review of many significant actions of the Director. Had the legislature wanted to limit challenges to the few that the Director argues are permissible, it could easily have done so, but it did not. Thus, the Director's statutory construction argument fails.

Analysis of the rule of the Georgia Department of National Resources governing petitions for a hearing, Rule 391-1-2-.06, further demonstrates that the Director's argument is without merit. That rule provides that a hearing may be held before the Administrative Law Judge for any of four reasons: (1) when the Director seeks the imposition of civil penalties, (2) if a permit or license is granted or denied by the Director, (3) if a permit or license is revoked, suspended, amended, modified or not renewed by the Director, or (4) for all other actions, notices or orders.

Subparagraph (4), entitled "All Other Actions" states as follows:

> (a) Within 30 days of the issuance of <u>any order, notice, or any other action not covered in Paragraphs (1) through (3) above</u> under any of the laws administered by DNR and in which the legal rights, duties or privileges of a person are required by law to be determined by DNR after an opportunity for a hearing, any person aggrieved or adversely affected thereby may file a written petition for a hearing with the Clerk. (emphasis added)

Under the Director's narrow view of what actions may be challenged, there would be no point for a rule governing "All Other Actions." Subparagraphs (1), (2) and (3), which address administrative orders seeking penalties and all matters relating to permits or licenses, would encompass all of those matters which the Director now asserts are appealable. It is a general rule of statutory construction that a provision will not be construed as mere surplusage unless no other construction is reasonably possible. City of Gainesville v. Smith, 121 Ga. App. 117, 173 S.E.2d 225 (1970). Every part of a statute must be reviewed in connection with the whole to harmonize all parts where practicable. This rule of construction should apply here. It is presumed that the drafters of Rule 391-1-2-.06 did not intend for any part of the statute to be without meaning. See Seaboard Coast Line R. Co. v. Blackmon, 129 Ga. App. 342, 199 S.E.2d 581 (1973).

Applying this principle of construction, it becomes readily apparent that, if subparagraph (4) is to have any meaning, it must cover orders, notices or actions other than those which pertain to administrative penalties, permits or variances. The listing of Petitioner's facility on the § 304(l) lists is such an action. Rule 391-1-2-.06, which was written by the Department of National Resources, therefore foreclosed the Director's argument that only administrative orders or matters dealing with permits and variances may be appealed. For this

reason as well, the argument that Petitioner is not entitled to challenge the listing of Petitioner's facility on the 304(l) lists should be rejected.

C. Petitioner Has Been Aggrieved or Adversely Affected by the Director's Action Listing the Altamaha River and Petitioner's Facility on the 304(l) Lists.

O.C.G.A. § 12-2-2(c)(3) states that:

> Persons are "aggrieved or adversely affected" where the challenged action has caused or will cause them injury in fact and where the injury is to an interest within the zone of interests to be protected or regulated by the statutes that the director is empowered to administer and enforce.

In the context of the Administrative Practice Act, the word "aggrieved" has been interpreted to mean that the person seeking to appeal must show that he has an interest in the agency decision that has been specially and adversely affected thereby. Georgia Power Co. v. Campaign for a Prosperous Georgia, 255 Ga. 253, 257, 336 S.E.2d 790 (1985). The fact that the burden complained of is shared with others does not disfranchise a person from challenging the act. Id. at 258, (quoting Application of Hawaiian Electric Co., Inc., 535 P.2d 1102, 1105 (1975)). Applying this standard, Petitioner is aggrieved and adversely affected and has standing to challenge the Director's action.

Section 304(l)(1)(C) of the Act requires the Director to identify Petitioner's facility if he finds that the facility is a specific point source discharging a toxic pollutant which he

believes is preventing or impairing the attainment of a water quality standard. 33 U.S.C. § 1314(l)(1)(C).

After a determination is made that a facility is a specific point source, § 304(l)(1)(D) of the Act requires that the Director establish an individual control strategy ("ICS") for each such facility. The statute requires the Director to fashion an ICS which will produce a reduction in the discharge of toxic pollutants such that the body of water identified on the list will achieve the applicable water quality standard as soon as possible.

The Director identified Petitioner's facility on the § 304(l) lists and published an ICS for Petitioner's facility. It reads as follows:

> Notify company and issue draft permit prior to June 4, 1989. Initiate BMP's for chlorine and TSS reductions, and assign water quality based permit limit for protection from EPA's 10^{-6} human health risk level (.000013 ng/l). Require each mill to meet by June 4, 1992. Upon completion of the fish sampling/testing protocol, further tighten the permit limit where levels of dioxin in fish tissue exceed 25 ppt.

(See Petition of ITT Rayonier, Inc., Exhibit A, Addendum, p. 1.)

As is set forth in the Affidavit of Dana B. Dolloff filed herewith, purchase and installation of the equipment to implement the ICS set forth on the § 304(l) lists will cost Petitioner approximately $123,000,000, and there is no guarantee that, even after this equipment is installed, that the water quality standard for 2,3,7,8-TCDD can be

achieved. We submit that a $123,000,000 expenditure constitutes an adverse effect on this Petitioner. Moreover, it is unclear that Petitioner can meet certain product specifications if it eliminates the use of chlorine from its pulping.

Petitioner is challenging the Director's decision to include the Altamaha River and Petitioner's facility on the § 304(l) lists. Had they not been included, an ICS would not have been required. If an ICS were not required, Petitioner would not be required to incur these costs, or face no longer being able to produce many of the products it now makes. There can therefore be little question that the listing threatens Petitioner with an injury in fact, within the zone of interests regulated by a statute that the Director is empowered to administer and enforce. O.C.G.A. § 12-2-2(c)(3). As such, Petitioner is an aggrieved or adversely affected party, with standing to raise the issues set forth in the Petition. For this reason as well, the Director's motion should be denied.

D. If Petitioner Is Unable To Appeal Until Its NPDES Permit Is Issued, It Will Lose The Ability To Challenge Significant Actions of the Director Concerning The 304(l) Listing Which Have A Substantial Impact On Petitioner.

The Director argues that there can be no clear determination as to whether Petitioner will be aggrieved or adversely harmed until such time as a modified NPDES permit is issued. The Director then suggests that Petitioner reserve its

appeal until the permit is issued, rather than challenging the actions of the Director concerning the 304(l) lists.

The Director is incorrect when he asserts that no separate and distinct harm comes to Petitioner as a result of the 304(l) listing. Most significantly, if Petitioner is unable to challenge the listing, Petitioner may lose its opportunity to contest the water quality standard for 2,3,7,8-TCDD, which was adopted by the Director when he published the ICS. In addition to the many substantive challenges asserted concerning the water quality standard, Petitioner has raised significant issues regarding procedural aspects of the 304(l) listing, including questions regarding the Director's compliance with the notice and comment requirements under the Administrative Procedure Act. O.C.G.A. § 50-13-1 et seq. If Petitioner is not allowed to pursue its challenge to the Director's actions concerning the 304(l) listing until after a modified permit is issued, it may lose its ability to contest these procedural and substantive issues.

Second, merely being listed on a 304(l) list imposes a substantial burden on Petitioner. Identification as a point source under 304(l)(1)(C) requires a finding by the Director that the discharge from Petitioner's facility is impeding the ability of the Altamaha River to meet water quality standards. Additionally, such a designation subjects one to public approbation and all of the attendant negative publicity.

Petitioner is entitled to an opportunity to challenge that finding.

Finally, as set forth above, once a facility is identified as a point source on the 304(l) list, an individual control strategy must be implemented. The Clean Water Act sets strict time deadlines for compliance with the applicable water quality standards. 33 U.S.C. § 1314(l)(1)(D). Implementation of many of the costly measures which will be required if Petitioner remains on the 304(l) list must begin soon. If Petitioner is not allowed to maintain this action, it will be required to wait until a later time to determine if it must continue to implement the costly, and possibly unnecessary measures outlined in the individual control strategy. This is inequitable and wasteful. For these reasons, the Director's argument that Petitioner will not be aggrieved or adversely affected until such time as a modified NPDES permit is issued should be rejected.

Conclusion

The Director's motion suffers from procedural flaws which warrant its dismissal. However, even if the Court determines it can entertain the motion, Petitioner has refuted the Director's arguments concerning both the appealability of the Director's action and Petitioner's standing to do so. Finally, Petitioner has demonstrated that the 304(l) listing constitutes an injury separate and apart from that which flows from the

issuance of a NPDES permit. For all of these reasons, Petitioner respectfully requests that the motion be denied.

Respectfully submitted,

William H. Kitchens

John Clay Spinrad

ARNALL GOLDEN & GREGORY
55 Park Place, Suite 400
Atlanta, Georgia 30335
(404) 577-5100
Attorneys for ITT Rayonier, Inc.

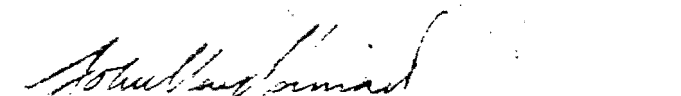
CERTIFICATE OF SERVICE

I do hereby certify that I have this day served the within and foregoing **Petitioner's Response to Motion for Summary Determination**, prior to filing the same, by depositing a copy thereof, postage prepaid, in the United States Mail, properly addressed upon:

Robert S. Bomar, Esq.
Senior Assistant Attorney General
132 State Judicial Building
Atlanta, Georgia 30334

J. Michael Davis
Assistant Attorney General
132 State Judicial Building
Atlanta, Georgia 30334

This 24th day of July, 1989.



John Clay Spinrad

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JUL 24 1989
BOARD OF NATURAL RESOURCES
ADJUDICATORY OFFICE/HEARING CLERK

BEFORE THE

GEORGIA BOARD OF NATURAL RESOURCES

STATE OF GEORGIA

IN RE: ITT RAYONIER, INC. § Record No. DNR-EPD-WQ-AH 9-89

AFFIDAVIT OF DANA B. DOLLOFF

STATE OF Connecticut §

§

COUNTY OF Fairfield §

Dana B. Dolloff, having been duly sworn, states as follows:

1.

I am director of Environmental Affairs for ITT Rayonier, Inc. and have personal knowledge of the facts set forth in this Affidavit.

2.

ITT Rayonier owns a pulp mill in Jesup, Georgia. That mill was recently identified by the Director of the Georgia Department of Natural Resources on a list he issued pursuant to § 304(1) of the Clean Water Act, 33 U.S.C. § 1314(1).

3.

Also included in that listing was an individual control strategy ("ICS") for the Jesup Mill. The purpose of the ICS is to reduce the amount of 2,3,7,8-TCDD which ITT Rayonier discharges into the Altamaha River from its Jesup mill.

4.

The ICS provides that best management practices be initiated in order to reduce levels for chlorine and for total suspended solids. ITT Rayonier currently estimates that purchasing and installing the equipment required to implement the best management practices (BMP) set forth in the ICS will cost ITT Rayonier, Inc. approximately $123,000,000.00. The estimate is based on technology similar to that itemized in the emergency rule amending Georgia Department of Natural Resources Rule 391-3-6-,03(5)(d) which was issued on June 30, 1989.

5.

It is not known at this time if the use of the required BMP will effect a reduction in 2,3,7,8-TCDD such that it will meet the effluent standard required to meet the Water Quality Standard set forth in the ICS, .000013 ng/L.

6.

The impact of the BMP changes on product quality and the ability of the plant to produce many of the products it now manufactures is also unknown but of serious concern.

7.

Chlorine bleaching of wood pulp is believed to be the source of the traces of 2,3,7,8 TCDD found in the plant's effluent. Should application of BMP fail to achieve the necessary discharge limits, elimination of chlorine all together may be required and technology does not currently exist to produce a large number of the plants products without chlorine. Furthermore development of such technology may not be successful and even if successful is a multiyear process. The 3041 listing imposes a deadline for compliance that does not permit the new technology development described above.

8.

Were it not for the individual control strategy required by the Director, ITT Rayonier, Inc. would not be required to spend the anticipated $123,000,000.00 and make process changes that jeopardize the plant's ability to make saleable product. Both of these constitute a potential injury in fact to ITT Rayonier, Inc.

FURTHER AFFIANT SAYETH NOT.

Dana B. Dolloff

Sworn to and subscribed
before me this 21st day
of July, 1989.

NOTARY PUBLIC

My Commission Expires:
3/31/94

Exhibit C

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

ENVIRONMENTAL DEFENSE FUND and NATIONAL WILDLIFE FEDERATION, Plaintiffs, v. LEE M. THOMAS, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al., Defendants.	Civil Action No. 85-0973 (Judge Joyce Hens Green)

CONSENT DECREE

I. Introduction

1. Plaintiffs Environmental Defense Fund and National Wildlife Federation filed their Complaint in this action on March 25, 1985, and filed an Amended Complaint on June 6, 1985. The Chemical Manufacturers Association was subsequently permitted by this Court to intervene as a party-defendant. By an opinion and order dated March 30, 1987, amended on April 14, 1987, this Court granted defendants' motion for partial summary judgment with respect to Counts II - IX of plaintiffs' Amended Complaint.

2. This Decree is entered for the exclusive purpose of compromising and settling Count I of the above-referenced action. There has not been a trial on any issue of fact or law with respect to Count I of this case. Therefore, in entering into this Decree, the parties take no position with respect to any issue of fact or law pertaining to Count I. However, the parties wish to settle the

As to plaintiff National Wildlife Federation:

Mark Van Putten
National Wildlife Federation
802 Monroe
Ann Arbor, Michigan 48104

6. This Decree shall apply to and be binding upon the parties to this action, and upon the officers, successors, agents, employees and assigns of the parties.

II. Definitions

The following terms used in this Consent Decree shall be defined as follows:

7. "Days" means calendar days.

8. "EPA" or the "Agency" means defendant Lee M. Thomas in his capacity as Administrator of the U.S. Environmental Protection Agency and any successors to that position or to any other position having authority to administer 15 U.S.C. section 2601 to 2629.

9. "PHDDs/PHDFs" means polyhalogenated dibenzo-p-dioxins and polyhalogenated dibenzofurans having chlorine and/or bromine atoms in positions 2,3,7,8 and up to three additional positions.

10. "PCDDs/PCDFs" means polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans having chlorine atoms in positions 2,3,7,8 and up to three additional positions.

11. "Hospital incinerators" means incinerators, other than general purpose municipal waste incinerators, that burn exclusively or predominantly wastes from hospitals.

plaintiffs shall include a statement of the steps the Agency will take to obtain adequate data and a schedule, not to exceed 365 days, for obtaining the data. Within 180 days of receipt of such data, EPA will take one of the actions set forth in subparagraphs (A) or (B) of this paragraph.

(i) The schedule referred to in subparagraph (C) of this paragraph may be extended by agreement of the parties upon good cause shown by EPA. Plaintiffs shall not unreasonably withhold their consent to such extension. If the plaintiffs and EPA are unable to agree with respect to such extension, the issue shall be referred to the Court for resolution.

16. Within 545 days of the date of the Agency's notification to plantiffs that EPA has commenced a risk assessment for a chemical under paragraph 15(A) of this Decree, EPA will take one of the following actions with respect to each of the matters considered in the risk assessment and will notify the plaintiffs in writing of same:

(A) publish a proposed rule in the Federal Register controlling contamination of PHDDs/PHDFs in that chemical. Such Federal Register notice of proposed rulemaking shall include a statement that the Agency will use its best efforts either to promulgate that rule in final form or to withdraw the proposed rule by a

(D) refer some or all of the matters at issue in the risk assessment to another agency pursuant to section 9 of TSCA, 15 U.S.C. section 2610.

IV. Effluent, Sludges, and Products from Bleached Pulp Mills.

17. On or before April 30, 1989, with respect to sludge, effluent, and products made from pulp produced at the mills covered by the U.S. EPA/Paper Industry Cooperative Dioxin Study, EPA will take one or more of the following actions and will notify the plaintiffs in writing of same:

(A) commence a multiple pathway risk assessment considering sludges, water effluent, and products made from pulp produced at such mills (such an assessment shall consider both occupational and nonoccupational risks, including but not limited to risks to aquatic organisms and from consumption thereof by wildlife and humans);

AND

(B) establish a date (to be not more than 365 days after the date of the notice to plaintiffs of the commencement of the risk assessment) by which EPA will take one of the following actions with respect to each of the matters considered in the risk assessment and notify plaintiffs in writing of the same:

EITHER

(i) adopt a schedule not to exceed 365 days in duration to propose regulations in the Federal Register addressing the contamination of PHDDs/PHDFs in water

issue to another agency pursuant to section 9 of TSCA, 15 U.S.C. section 2610;

(a) During the 180-day period described in subparagraph (B)(ii) of this paragraph, EPA reserves the right to determine not to make such a referral with regard to a particular matter, and instead to take action in accord with subparagraph (B)(i), (B)(iii), or (B)(iv) with respect to that matter.

(b) Unless EPA makes a determination pursuant to subparagraph (B)(ii)(a) of this paragraph, EPA shall refer some or all of the matters at issue to another agency pursuant to section 9 of TSCA, 15 U.S.C. section 2610, in accordance with the schedule stated in the Agency's notification to the plaintiffs.

OR

(iii) determine not to propose such regulations or make such referrals; the Agency's written notification thereof to plaintiffs shall be signed by the Assistant Administrator having jurisdiction over such determination and shall include a statement of the basis for that determination (such a determination shall constitute final agency action);

OR

a guideline and standard, the schedule must reflect the time needed to gather that additional information. This provision may be cited for purposes of evaluating "good cause" within the meaning of Paragraph 17 of this Consent Decree.

V. Permitting Strategy for Effluent from Bleached Pulp Mills

19. On or before April 30, 1990, EPA will take the following action with respect to effluent from pulp mills covered by the U.S. EPA/Paper Industry Cooperative Dioxin Study:

EPA will issue guidance to NPDES permit writers regarding the development of PHDD/PHDF effluent limits for such mills. Such guidance shall address the permit issuance process and shall include a discussion of scheduling of and if feasible target dates for permit issuance. Plaintiffs and EPA agree that their representatives will meet prior to the issuance of such guidance, and that EPA will consider including in the guidance a provision that recommends sampling of fish downstream from such mills where effluent levels of PHDDs/PHDFs may be below limits of detection. EPA will make available to plaintiffs draft guidance and will provide plaintiffs with a reasonable opportunity to submit comments before the guidance is made final. EPA agrees to hold one or more meetings between representatives of the Agency and plaintiffs, upon the reasonable request of plaintiffs, for the purpose of exchanging facts and other information related to EPA's

incinerators, and available technologies for control of such emissions.

22. By March 31, 1989, EPA will issue a study of operating procedures for hospital incinerators describing available literature regarding charging, start-up and shut-down procedures, monitoring, maintenance, and proper handling of ash.

23. EPA does not make any representation that the studies described in paragraphs 21 and 22 will be final agency action, or that EPA is committed to take any regulatory action of the basis of these studies.

VIII. Municipal Waste Incinerators

24(A) The parties acknowledge that EPA has previously published an Advanced Notice of Proposed Rulemaking, 52 Fed. Reg. 25406 (1987), in which the Agency stated that it intends (i) by November 1989 to propose both a New Source Performance Standard ("NSPS") under Clean Air Act Section 111 for new or modified municipal waste incinerators, and regulations and procedures (hereafter, "Guidelines") under Clean Air Act Section 111(d) for the states' submittal of plans establishing standards of performance for existing municipal waste incinerators, and (ii) by December 1990 to promulgate final NSPS and Guidelines. EPA currently expects to proceed according to the schedule stated in the Advanced Notice of Proposed Rulemaking.

Rulemaking referred to in paragraph 24 of this Decree for the purpose of exchanging facts and other information related to EPA's development of the NSPS and Guidelines.

(A) Such meetings will be held at the mutual convenience of plaintiffs and of EPA either in Durham, North Carolina, or Washington, D.C.

(B) In the course of developing the Notice of Proposed Rulemaking, EPA will make available to plaintiffs draft documents, which (in final form) will be entered into the rulemaking docket, not including any draft of the Notice of Proposed Rulemaking. Before finalizing those documents provided to plaintiffs pursuant to this paragraph, EPA will provide plaintiffs with a reasonable opportunity to submit comments on those documents.

(C) This Consent Decree does not obligate EPA to provide plaintiffs with any documents that are deliberative or that EPA could otherwise validly decline to disclose under the Freedom of Information Act. Any such documents or portions thereof, which EPA could validly decline to disclose under the Freedom of Information Act, that EPA nonetheless provides to plaintiffs under this paragraph shall be made available to plaintiffs solely for their review pursuant to this Consent Decree.

pending EPA's performance of the actions specified in this Decree.

29. Failure by EPA to perform any or all of the actions, other than those qualified by inclusion of the proviso that the Agency shall use its "best efforts" with respect to that action, shall be subject, upon proper motion by plaintiffs, to proceedings under this Decree to compel such actions.

30. With respect to actions qualified by inclusion of the proviso that the Agency shall use its "best efforts" with respect to that action, failure by EPA to perform any or all such actions by the dates specified herein shall not be subject to proceedings under this Decree to compel such actions. However, if EPA does not perform any such action by the specified date, EPA shall supply the plaintiffs with a short report indicating EPA's expected date for completing the action and the reasons for the delay. Nothing in this Consent Decree shall be construed either to waive or otherwise affect any argument that plaintiffs may have that any report submitted pursuant to this paragraph will constitute final agency action, or to waive or otherwise affect any defense that EPA may have to such an argument.

31. The parties do not intend by this Consent Decree to concede this Court's future subject matter jurisdiction to review the content of the notices or studies described herein, except insofar as necessary to determine whether those notices or studies have discharged EPA's obligations under this Decree.

35. This Court retains jurisdiction over the parties to this Consent Decree to enforce compliance with its terms, to construe the Consent Decree, and to resolve disputes as may be necessary or appropriate for the construction or execution of this Decree. Any modification of this Consent Decree must be in writing and approved by the Court.

36. This Consent Decree in no way affects or relieves EPA of any responsibility to comply with any other Federal law or requirement with respect to any PHDD/PHDF.

37. The schedules contained in this Consent Decree are agreed upon by the parties for the sole purpose of settling this litigation with respect to Count I of the complaint (seeking de novo review under TSCA). Plaintiffs' agreement to this Decree shall not be construed in any way to suggest that plaintiffs believe that it is optimal from a public policy standpoint for EPA to take the full amount of time provided in the schedules contained herein. Rather, these schedules reflect enforceable timetables agreed upon to achieve settlement of this matter.

38. Notwithstanding the provisions of paragraph 2 of this Consent Decree, the existence of this Decree and the schedules provided herein may be referenced by any party to this Decree or by any other person in any litigation or administrative proceeding that pertains to or involves any of the actions referred to herein.

39. The parties desire to discuss further any claims plaintiffs may have for an award of fees or costs pursuant to

Respectfully submitted,

Karen Florin July 22, 1988

Karen Florin
Counsel for Plaintiff
Environmental Defense Fund
1616 P Street, NW, Suite 150
Washington, D.C. 20036
(202) 387-3500
DC Bar ID # 378647

Larry Schweiger July 22, 1988

Larry J. Schweiger
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MARK VAN PUTTEN/KF July 22, 1988

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Fred R. Disheroon July 25, 1988

Fred R. Disheroon
Special Litigation Counsel
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Alan H. Carpien July 22, 1988

Alan H. Carpien
Office of General Counsel
U.S. Environmental Protection Agency
401 M Street, SW (LE-132P)
Washington, D.C. 20460
(202) 382-7213

205 Butler Street, S.E., Suite 1252, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
404.656-3500

May 23, 1989

Mr. Greer C. Tidwell
Regional Administrator
U. S. Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, Georgia 30365

Re: Section 304(1) Lists

Dear Mr. Tidwell:

This is in response to your April 7, 1989 letter of preliminary comments concerning Georgia's Section 304(1) lists and the more recent April 20, 1989 and May 8, 1989 letters on dioxin. Also, receipt is acknowledged of Mike McGhee's May 8, 1989 letter on the Toxics Release Inventory. EPA has requested the State to perform additional screening to supplement Georgia's January 23, 1989 report.

The Georgia lists were submitted to your agency on January 23, 1989 to comply with the February 4, 1989 Federal Clean Water Act mandate. The lists were developed in accordance with the Georgia Rules and Regulations for Water Quality Control, specifically Rules 391-3-6-.03 and .06, as well as all EPA materials available at the time (EPA Gold Book, and Section 304(1) guidance materials, etc.). The listings comply with Section 304(1) requirements of the Federal Clean Water Act.

The Georgia Rules were publicly reviewed through a series of six meetings and a public hearing in conjunction with the development of the Section 304(1) listings. Notices for all individual control strategies or NPDES permits were published to satisfy public notice requirements. For each individual control strategy, the Georgia Department of Natural Resources (DNR) issued a public newspaper ad, sent copies of the notice to all interested parties on the mailing list, and transmitted an individual letter to each permittee involved.

After reviewing your agency's preliminary comments, only one item was identified that required follow-up by DNR. Your water quality permitting section has requested additional data on Thomaston Mills beyond the routine information normally provided under the NPDES permit delegation. Attached is the additional information on Thomaston Mills that should allow you to finalize the review of Georgia's January 23, 1989 report. Georgia DNR has not identified any issue mentioned in your April 7, 1989 letter that cannot be supported by the files. The four additional facilities being evaluated for potential listing by your agency were already covered in Georgia's screening during the development of the Section 304(1) lists. Accordingly, these four facilities are not appropriate for inclusion on Georgia's Section 304(1) short list.

DNR also reviewed the preliminary comments provided in your letter for the individual control strategies of each of the facilities identified on the short list. Again, no revisions to the January 23, 1989 report were identified from this review. Attachment No. 1 provides a detailed project by project response to your preliminary comments.

In response to your April 20, 1989 and May 8, 1989 letters concerning the treatment of dioxin at pulp and paper mills that employ chlorine bleaching, this will bring you up to date with our current plans. DNR has requested the five bleached kraft pulp and paper mills in Georgia to develop a uniform sampling/testing protocol for dioxin monitoring. Samples of representative game fish and bottom feeding fish will be collected by an outside consultant from locations upstream and downstream of the wastewater discharges from these five mills. Samples will also be collected for comparison from the Chattahoochee River below Atlanta and from the Oconee River below Athens, areas affected by urban activities but not by pulp mills. Sample collection will take place between June and October of this year. Whole body samples as well as fish fillets will be analyzed for dioxin by an approved contract laboratory. Final reports will be submitted to DNR within 3 to 4 months following sample collection.

DNR reviewed the March 15, 1989 National Final Guidance on Section 304(1) Listing and Permitting of Pulp and Paper Mills that was referenced by your April 20, 1989 letter. This assessment has concluded that all of the five facilities qualify as candidates for the "short list." An addendum to the "short list" is attached to include the five Georgia bleach kraft pulp and paper mills.

The national guidance also requires the five pulp and paper mills to be identified on the Section 304(1) "long list." DNR has prepared the attached addendum to the "long list" which identifies the receiving waters below three of Georgia's five pulp and paper mills that use chlorine bleaching. The other two mills were listed on Georgia's previous Section 304(1) "long list" submittal.

The NPDES draft permits for the five mills will be developed prior to June 4, 1989. DNR will be reopening the NPDES permits to assign new water quality based limits for dioxin and to recommend best management practices for chlorine minimization and total suspended solids reductions. The schedule for completion will be June 4, 1992. If the fish sampling results show levels of dioxin exceeding 25 ppt in the edible portions of the flesh, then the permit will be reopened once again and the limit for dioxin made more stringent.

In summary, Georgia DNR has followed the national guidance for dioxin and has determined that all of the five bleached kraft pulp and paper mills qualify for identification on the short list. Furthermore, Georgia DNR has established a procedure or strategy for control of dioxin to ensure no discharges in toxic amounts. This is consistent with the national guidance.

With regard to the May 8, 1989 Toxics Release Inventory, DNR completed the screening of the data as requested. The results indicate that there is not sufficient cause to list any of the dischargers or water bodies on the Section 304(1) list beyond those previously identified by the Department. Several industries, however, will be requested to perform additional biological and chemical toxicity testing to confirm these conclusions.

As always, your comments are appreciated and we look forward to your approval.

Sincerely,

J. Leonard Ledbetter
Commissioner

JLL:njk
Attachment

cc: Bruce R. Barrett

ADDENDUM

SECTION 304(l)(B) - SHORT LIST

This is a subset of the long list which identifies specific point source dischargers of Section 307(a) chemical constituents in toxic amounts and identifies the amount of the pollutant that exceeds water quality standards, and the proposed individual control strategies to produce a reduction in the amount of the chemical constituents that are discharged.

		PROBLEM ISSUES			
Basin/Water Body	Location	Criteria Impacted	Pounds Per Day of Chemical Constituent Discharged	Percentage Over Water Quality Based Permit Limit	Individual Control Strategies
ALTAMAHA					
Altamaha River (2 miles)	Downstream of ITT-Rayonier in Jesup (GA 0003620)	Dioxin	.000012	95	Notify company and issue draft permit prior to June 4, 1989. Initiate BMP's for chlorine and TSS reductions, and assign water quality based permit limit for protection from EPA's 10^{-6} human health risk level (.000013 ng/l). Require each mill to meet by June 4, 1992. Upon completion of the fish sampling/testing protocol, further tighten the permit limit where levels of dioxin in fish tissue exceed 25 ppt.
Turtle River, Academy Creek, and Brunswick River (6 miles)	Downstream of Brunswick Pulp and Paper in Brunswick (GA 0003654)	Dioxin	.000013	97	Notify company and issue draft permit prior to June 4, 1989. Initiate BMP's for chlorine and TSS reductions, and assign water quality based permit limit for protection from EPA's 10^{-6} human health risk level (.000013 ng/l). Require each mill to meet by June 4, 1992. Upon completion of the fish sampling/testing protocol, further tighten the permit limit where levels of dioxin in fish tissue exceed 25 ppt.

FLINT					
Flint River (2 miles)	Downstream of Procter & Gamble Cellulose Co. in Oglethorpe (GA 0049336)	Dioxin	.000001	91	Notify company and issue draft permit prior to June 4, 1989. Initiate BMP's for chlorine and TSS reductions, and assign water quality based permit limit for protection from EPA's 10^{-6} human health risk level (.000013 ng/l). Require each mill to meet by June 4, 1992. Upon completion of the fish sampling/testing protocol, further tighten the permit limit where levels of dioxin in fish tissue exceed 25 ppt.
SAVANNAH					
Savannah River (2 miles)	Downstream of Federal Paper Board in Augusta (GA 0002801)	Dioxin	.000004	88	Notify company and issue draft permit prior to June 4, 1989. Initiate BMP's for chlorine and TSS reductions, and assign water quality based permit limit for protection from EPA's 10^{-6} human health risk level (.000013 ng/l). Require each mill to meet by June 4, 1992. Upon completion of the fish sampling/testing protocol, further tighten the permit limit where levels of dioxin in fish tissue exceed 25 ppt.
ST. MARYS					
North River (2 miles)	Downstream of Gilman Paper Co. in St. Marys (GA 0001953)	Dioxin	.000002	98	Notify company and issue draft permit prior to June 4, 1989. Initiate BMP's for chlorine and TSS reductions, and assign water quality based permit limit for protection from EPA's 10^{-6} human health risk level (.000013 ng/l). Require each mill to meet by June 4, 1992. Upon completion of the fish sampling/testing protocol, further tighten the permit limit where levels of dioxin in fish tissue exceed 25 ppt.

ADDENDUM

SECTION 304(1)(A)(ii) - LONG LIST

This is an all inclusive list of waters within the State which require implementation of specific actions to alleviate to consistently meet all of the goals of the Federal Clean Water Act.

BASIN/WATER BODY	LOCATION	WATER USE CLASSIFICATION	PROBLEM ISSUES: CRITERIA IMPACTED*	PROBLEM ISSUES: PRINCIPAL SOURCE**	ACTIONS TO ALLEVIATE
ALTAMAHA					
Altamaha River (2 miles)	Downstream of ITT-Rayonier	Fishing	Dioxin	I	Fish tissue sampling required to consistently ensure that dioxin is not present at toxic levels.
FLINT					
Flint River (2 miles)	Downstream of Procter & Gamble Cellulose Co.	Fishing	Dioxin	I	Fish tissue sampling required to consistently ensure that dioxin is not present at toxic levels.
SAVANNAH					
Savannah River (2 miles)	Downstream of Federal Paper Board Co.	Fishing	Dioxin	I	Fish tissue sampling required to consistently ensure that dioxin is not present at toxic levels.

GEORGIA

FISCAL YEAR 1991 NPDES PERMIT REVIEW

FACILITY: ITT Rayonier, Inc.

NPDES No: GA0003620

APPLICATION _____ DRAFT (20 days) ✓ FINAL (15 working days)

_____ NEW (10 days)

✓ MAJOR INDUSTRIAL

_____ MAJOR MUNICIPAL

_____ MINOR PRIMARY

✓ MODIFICATION (circle one: Major Ind/Mun. or Minor Pri)

ROUTING:

1. DATE RECEIVED 7/18/91
2. UNIT CHIEF
3. ASSIGNED TO _____ DUE 8/7/91
4. UNIT CHIEF (If Problems)
5. PERMITS CLERK
6. FILES

COMMENTS:

ACTION TO BE TAKEN: _____

COMPLETED BY _____ DATE _____

PART IV

ITT Rayonier Inc.

Research Center
409 E. Harvard Avenue
Shelton, Washington 98584
Telephone (206) 426-4461

August 1, 1989

CERTIFIED MAIL

Mr. Nolton G. Johnson
Assistant Chief
Water Protection Branch
Environmental Protection Division
Georgia Dept. of Natural Resources
205 Butler Street, SE
Atlanta, GA 30334

Re: NPDES Permit No. GA 0003620

ITT Rayonier appreciates the opportunity to comment on the July 16th, and July 19th letters to Mr. Jack C. Dozier from Mr. John T. Marlar, Chief Facilities Performance Branch Water Management Division, USEPA Region IV.

Mr. Marlar's position that a permit limit for 2,3,7,8 TCDD at the analytical detection limit of 10 ppq is unacceptable because Dioxin was quantified at a level of 3.1 ppq ignores the facts:

1. Dioxin analysis is achieved using sample extraction extract concentration, and finally quantification using Gas Chromatographic separation and Mass Spectrographic detection of specific compound fragments. Attached is a letter dated June 20, 1989 from Mr. Larry LaFleur of the National Council of the Paper Industry for Air and Stream Improvement (NCASI). Mr. LaFleur describes the criteria established for quantitative GC/MS. Please note that the procedure inherently has a variable detection limit associated with each individual sample injection that ralates to the level of recovery of the internal standard that is spiked in the sample. Since the acceptable percent recovery of the internal standard varies from 40 to 120 it is expected the corresponding correction factor has the likelihood of amplifying the reported levels of "native" dioxin that may be measured.

2. During the 104 mill study attempts to establish the interlaboratory analytical variability for Dioxin analysis was abandoned because the data were too scattered to enable the EPA and NCASI to agree on what the standard deviation would be for the non-standard method that was used. Consequently it was decided that one laboratory would do effluent samples, while other contract laboratories did the sludges and pulps. Therefore, the table of values provided in Mr. Marlar's letter really only represents the

analytical determination of several samples from one laboratory where only a few Analysts did the work and were likely quite familar with the method and the samples. Under these almost ideal circumstances the detection limit ranged from 4.2 to 11. This is a 3 fold range and clearly shows that the 3.1 value was the rare exception not the rule. The EPA has not provided any information on what the analytical variability would be for truely replicate effluent samples that have been split and subjected to analysis for Dioxin analysis at laboratories that advertise the use of High Resolution GC/MS in accordance with peer reviewed and published EPA methods for effluents.

3. From Great Britan's Department of the Environment, Central Directorate of Environmental Protection, Pollution Paper No. 27 (1989) entitled: "Dioxins in the Environment," the following analytical data are reported:

   a) for 65 samples of soil ng/Kg (ppt) the values ranged from non-detect(at 0.5 ppt) to 69 ppt with a mean value of 9.4 and a standard deviation of 11 ppt (p. 27).

   b) for 18 separate paper products the 2,3,7,8 TCDD single determination ranged from 0.2 to 13.4 ng/Kg (ppt). No standard deviation was given (p. 38).

   c) for levels in human body fat the 2,3,7,8 TCDD values ranged from non-detect to 13 ng/Kg (ppt) for accident victims to 3-18 for hospitals (p. 44).

   These data show that when sufficient replicate sampling has been done there will be a significant variability at the parts per trillion level. It is reasonable to assume that a much greater analytical variability will be realized when the analyses are attempted at the parts per quadrillion level as EPA is mandating for the permit. It is not possible to predict this variability. Only replicate sampling and analysis can establish it.

In conclusion, ITT Rayonier does not believe the EPA is justified in mandating a permit limit that relies on data accumulated under ideal conditions of applying a research level method. Furthermore, the data cited by Mr. Marlar do not reflect the true analytical variability of the method.

Sincerely yours,

ITT RAYONIER INCORPORATED
Research Center

Philip A. Hamlin

tar
Enclosure

cc: R. H. Watts, D. B. Dolloff - Stamford
R. A. McCrary - Jesup
E. F. Button, E. M. Tokar - RRC

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning effective date and lasting through December 1, 1992, the permittee is authorized to discharge from outfall(s) serial number(s) 001 and 002 - Process Wastewater, sanitary wastes, and stormwater runoff.

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations				Monitoring Requirements		
	Mass Based		Concentration Based				
	Daily Avg.	Daily Max.	Daily Avg.	Daily Max.	Measurement Frequency	Sample Type	Sample Location
Dioxin (2,3,7,8-TCDD)[1]	-	-	-	.000172 µg/l	Quarterly	24-Hour Composite	Effluent
Bis(2 Ethyl-hexyl)Phthalate	-	-	-	-	Annual	24-Hour Composite	Effluent
Chloroform	-	-	-	-	Annual	24-Hour Composite	Effluent

1. The permittee shall adhere to the analytical protocol described in Appendix C of the U.S. EPA/Paper Industry Cooperative Dioxin Screening Study (EPA 440/1-88-025, March 1988) when analyzing wastewater effluent samples for 2,3,7,8-TCDD.

The effluent sample location shall be defined as the discharge stream after treatment, but prior to mixing with any other waters.

Summary of NPDES Permit Rationale

Name ITT Rayonier NPDES No. GA0003620

Location Jesup, Ga. Major Discharge ✓

Minor Discharge _____ Date 7/2/91 Prepared by L. P. Kloet

Draft permit is first issuance _____ reissuance with no modifications from previous permit _____ modification of existing permit ✓.

Discharge is industrial ✓ municipal _____ privately owned (domestic wastewater only) _____. If industrial, point source category is Pulp, Paper, & Paperboard subcategory is Dissolving Kraft & Market Bleached Kraft production level is 1740 ADT/day, SIC code is 2611.

Facility located on stream segment that is and the basis for derivation of limitation is:

✓ Stream water quality limited
- ___ Based on water quality model
- ✓ Based on ~~instream calculation at 7 day, 10 year low flow~~ instream calculation at average river flow

___ Stream effluent limited
- ___ Based on promulgated guidelines
- ___ Based on plant's demonstrated performance
- ___ Based on demonstrated technology

Discussion:

Permit Mod. for 2,3,7,8 TCDD Dioxin only.

Check One After Permit Issuance:

___ Final permit was unchanged from draft permit.

___ Final permit included changes from draft permit. See attached draft permit and/or correspondence file for details.

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION
270 Washington Street, S. W.
Atlanta, Georgia 30334

FACT SHEET

APPLICATION FOR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT TO DISCHARGE TREATED WASTEWATER TO WATERS OF THE STATE OF GEORGIA

Application No. GA 0003620 Date July 8, 1991

1. SYNOPSIS OF APPLICATION

a. Name and Address of Applicant

ITT Rayonier, Inc.
P. O. Box 207
Jesup, Georgia 31545

b. Description of Applicant's Operation

Pulp and Paper Mill, produces market bleached kraft and dissolving kraft.

c. Production Capacity of Facility

1740 ADT/day, may be increased to 1940 ADT/day by 1990.

d. Applicant's Receiving Waters

Altamaha River

For a sketch showing the location of the discharge(s), see Attachment A.

e. Description of Existing Pollution Abatement Facilities

Screening
Primary Clarification
Nutrient Addition
Aeration Basin

f. Description of Discharges (as reported by applicant)

Serial 001 and 002 Combined

Average Flow - 62 mgd
Average Winter Temperature - 22°C
Average Summer Temperature - 34°C
pH Range (std. units) - 7.0 to 8.4

Pollutants which are present in significant quantities or which are subject to effluent limitation are as follows:

Effluent Characteristic	Reported Load
BOD_5	32 mg/l
Total Suspended Solids	57 mg/l
Dioxin (2,3,7,8-TCDD)	0.0000132 µg/l

Stormwater Runoff Point Sources

Average Flow - Varies
Average Winter Temperature - N/A
Average Summer Temperature - N/A
pH Range (std. units) - 7.1

Pollutants which are present in significant quantities or which are subject to effluent limitation are as follows:

Effluent Characteristic	Reported Load
BOD_5	5 mg/l
Total Suspended Solids	2 mg/l

2. PROPOSED EFFLUENT LIMITATIONS

Serial 001 and 002 - Combined

Permitted Maximum Temperature - N/A
Permitted pH Range (std. units) - 6.0 - 9.0

Effluent Characteristic	Discharge Limitation
BOD_5	
May 1 - November 30	22,300 lbs/day Avg.Daily 33,450 lbs/day Max.Daily
December 1 - April 30	32,000 lbs/day Avg.Daily 48,000 lbs/day Max.Daily

BOD_5 limitations may be increased to 35,000 lbs/day average daily and 52,500 lbs/day maximum daily during wintertime months (December 1 - April 30) if anticipated production in 1990 is reached.

Total Suspended Solids	42,010 lbs/day Avg.Daily 77,600 lbs/day Max.Daily
Dioxin (2,3,7,8 TCDD)	.000172 µg/l Max. Daily

Serial ____ - N/A

Permitted Maximum Temperature -
Permitted pH Range (std. units) -

Effluent Characteristic	Discharge Limitation

3. MONITORING REQUIREMENTS

The applicant will be required to monitor regularly for flow and those parameters limited in Section 2 above with sufficient frequency to ensure compliance with the permit conditions. Frequency, methods of sampling, and reporting dates will be specified in the final permit.

4. PROPOSED COMPLIANCE SCHEDULE FOR ATTAINING EFFLUENT LIMITATIONS

N/A

5. PROPOSED SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE DISCHARGE

See Part III, Special Requirements of NPDES permit, attached.

6. WATER QUALITY STANDARDS AND EFFLUENT STANDARDS APPLIED TO THE DISCHARGE

The Altamaha River is classified as fishing. The effluent limitations were derived to meet this classification.

7. PROCEDURES FOR THE FORMULATION OF FINAL DETERMINATIONS

a. Comment Period

The Georgia Environmental Protection Division (EPD) proposes to issue an NPDES permit to this applicant subject to the effluent limitations and special conditions outlined above. These determinations are tentative.

Interested persons are invited to submit written comments on the permit application or on EPD's proposed determinations to the following address:

Georgia Environmental Protection Division
205 Butler Street, S.E.
Floyd Towers East, Room 1070
Atlanta, Georgia 30334

All comments received prior to
will be considered in the formulation of final determinations with regard to this application.

b. Public Hearings

Any applicant, affected state or interstate agency, the Regional Administrator of the U. S. Environmental Protection Agency (EPA) or any other interested agency, person or group of persons may request a public hearing with respect to an NPDES permit application if such request is filed within thirty (30) days following the date of the public notice for such application. Such request must indicate the interest of the party filing the request, the reasons why a hearing is requested, and those specific portions of the application or other NPDES form or information to be considered at the public hearing. The Director shall hold a hearing if he determines that there is sufficient public interest in holding such a hearing. If a public hearing is held, notice of same shall be provided at least thirty (30) days in advance of the hearing date.

In the event that a public hearing is held, both oral and written comments will be accepted; however, for the accuracy of the record, written comments are encouraged. The Director or his designee reserves the right to fix reasonable limits on the time allowed for oral statements and such other procedural requirements as he deems appropriate.

Following a public hearing, the Director, unless he should decide to deny the permit, may make such modifications in the terms and conditions of the proposed permit as may be appropriate and shall issue the permit. Notice of issuance or denial will be circulated to those persons or groups who participated in the hearing; to those persons or groups who submitted written comments to the Director on the proposed permit within thirty (30) days from the date of the public notice of the application for permit; and to all persons or groups included on the EPD mailing list.

c. Contested Hearings

Any person who is aggrieved or adversely affected by the issuance or denial of a permit by the Director of EPD may petition the Director for a hearing if such petition is filed in the office of the Director within thirty (30) days from the date of notice of such permit issuance or denial. Such hearing shall be held in accordance with the EPD Rules, Water Quality Control, subparagraph 391-3-6-.01.

Petitions for a contested hearing must include the following:

1. The name and address of the petitioner;

2. The grounds under which petitioner alleges to be aggrieved or adversely affected by the issuance or denial of a permit;

3. The reason or reasons why petitioner takes issue with the action of the Director;

4. All other matters asserted by petitioner which are relevant to the action in question.

d. Issuance of the Permit When No Public Hearing is Held

If no public hearing is held, and, after review of the written comments received, the Director determines that a permit should be issued and that his determinations as set forth in the proposed permit are substantially unchanged, the permit will be issued and will become final in the absence of a request for a Contested Hearing. Notice of issuance or denial will be circulated to those persons who submitted written comments to the Director on the proposed permit within thirty (30) days from the date of the public notice of such proposed permit; and to all persons or groups included on the EPD mailing list.

If no public hearing is held, but the Director determines, after a review of the written comments received, that a permit should be issued but that substantial changes in the proposed permit are warranted, public notice of the revised determinations will be given and written comments accepted in the same manner as the initial notice of application was given and written comments accepted pursuant to EPD Rules, Water Quality Control, subparagraph 391-3-6-.06(7)(b). The Director shall provide an opportunity for public hearing on the revised determinations. Such opportunity for public hearing and the issuance or denial of a permit thereafter shall be in accordance with the procedures as set forth above.

8. DIOXIN MONITORING AND EFFLUENT LIMITATIONS

The NPDES permit for this bleached kraft pulp and paper mill was reopened on June 1, 1989 to incorporate water quality-based effluent limitations for dioxin (2,3,7,8-TCDD). The present permit modification contains a daily maximum effluent limitation for dioxin that is based upon the 10^{-5} human health risk factor. The effluent limitation was derived as shown below:

Design Discharge Flow (cfs)	Annual Average Stream Flow (cfs)	Dilution Factor	10^{-5} Human Health Criteria (µg/l)	Daily Maximum Effluent Limit (µg/l)
95.5	13,567	143	0.0000012	0.000172

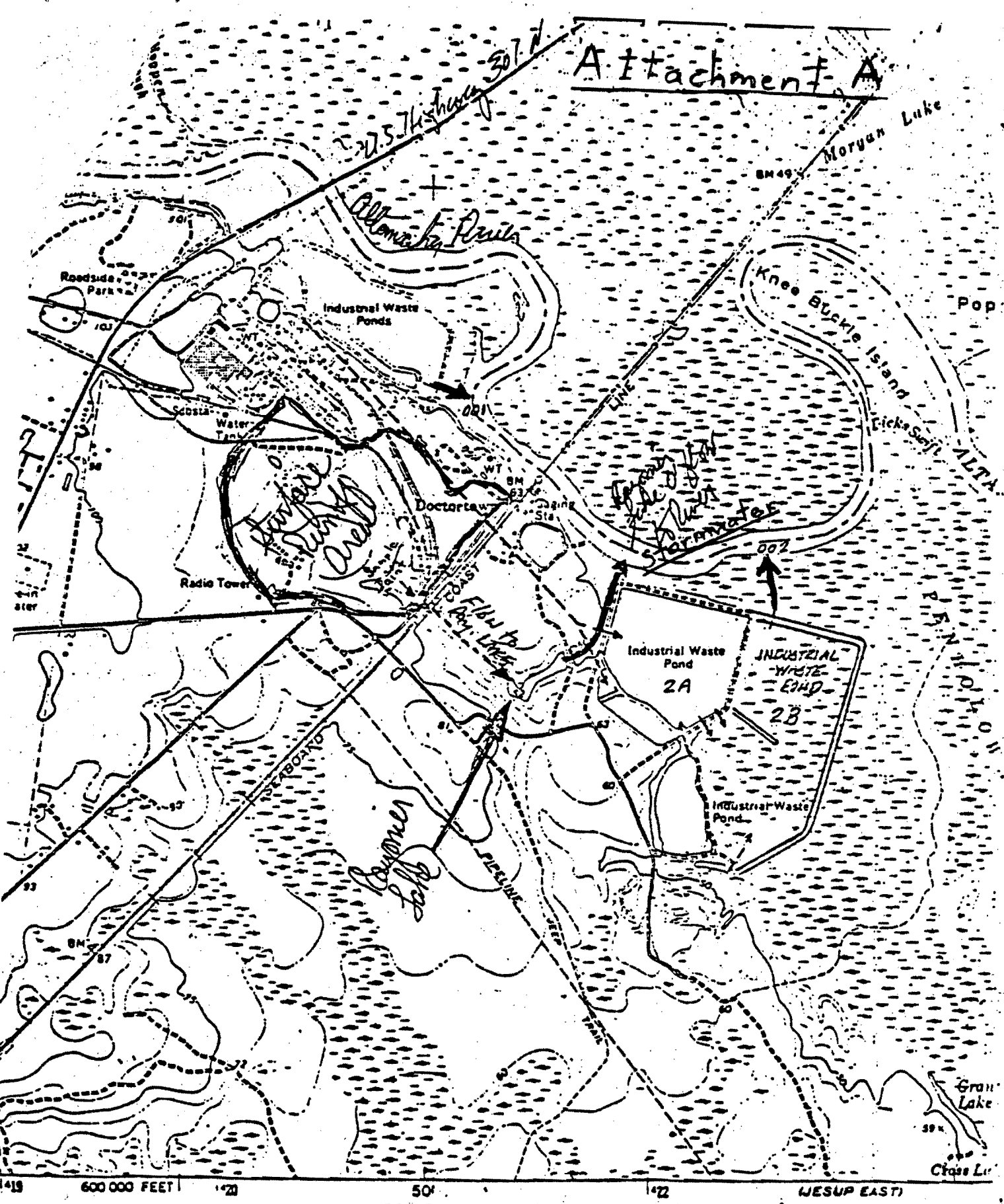
In addition, the permittee shall conduct annual monitoring for dioxin and for furan (2,3,7,8-TCDF) in fish tissue in the mill's receiving stream. This monitoring program shall be conducted in accordance with the Study Plan To Conduct Dioxin Monitoring In Fish Tissue From The Vicinity Of Five Georgia Bleached Kraft Mills, March 31, 1989.

9. Bis(2-Ethyl-hexyl)Phthalate and Chloroform Monitoring Requirements

10^{-6} human health criterion for chloroform and Bis(2-Ethyl-hexyl) Phthalate has been established at 100 µg/l and 5.92 µg/l respectively. Calculated instream waste concentrations are less than 50 percent of the established human health criteria using average flow. Therefore, only monitoring is required.

If no public hearing is held, but the Director determines, after a review of the written comments received, that a permit should be issued but that substantial changes in the proposed permit are warranted, public notice of the revised determinations will be given and written comments accepted in the same manner as the initial notice of application was given and written comments accepted pursuant to EPD Rules, Water Quality Control, subparagraph 391-3-6-.06(7)(b). The Director shall provide an opportunity for public hearing on the revised determinations. Such opportunity for public hearing and the issuance or denial of a permit thereafter shall be in accordance with the procedures as are set forth above.

Attachment A



SCALE 1:24 000

1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 5 FEET
DATUM IS MEAN SEA LEVEL

12/10/80

B. SPECIAL REQUIREMENTS

1. River samples shall be collected and analyzed twice a month during the months, May through November. Samples shall be taken from the U.S. 301 Highway bridge, the ITT Rayonier marker just upstream from the confluence of Penholloway Creek and the Altamaha River, and the monitoring station at Everett City. Sampling shall be done near midstream or at a point which is judged to be representative of the river. Collection of samples shall be taken when flows are less than 10,000 cfs and when the river is at steady flow conditions. The time of collection at the various points shall coincide with time of travel for the river. Samples shall be analyzed for the following:

   a. BOD_5 and BOD_{40}

   b. Dissolved Oxygen

   c. pH

   d. Temperature

   Also, river stage and associated flow at Doctortown should be reported during periods scheduled for sampling whether or not sampling is actually conducted during that time.

2. The data from the river sampling program described above will be used by the Environmental Protection Division to refine and update the current stream model. If water quality violations are documented, limitations in Part I, Section A.1. will be adjusted accordingly.

3. The effluent limitations for BOD_5 for the December through April period may be modified to equal the limitations for the May through November period. The Director will provide written notification to the permittee 180 days prior to this permit modification.

4. Limits on page 2 are based on the permittee's anticipated production rate of 1740 ADTPD in 1988. This assumes that 38 percent of production is dissolving kraft and 62 percent of production is bleached kraft. The permittee anticipates that production will be increased to 1940 ADTPD in 1990 and is requesting a corresponding increase in the wintertime (December 1 - April 30) BOD_5 limitation from 32,000 lbs. per day to 35,000 lbs. per day on a daily average basis.

B. SPECIAL REQUIREMENTS (continued)

By December 1, 1989, the Division will be provided with the expected projected production for the following calendar year and with a summary of the actual production for the previous twelve month period. The effluent limitations will be adjusted in proportion to the projected production and shall not exceed the effluent limits commensurate with the 1940 ADTPD under this permit. This assumes approximately the same ratio of dissolving kraft to market bleached kraft production. These limitations will then remain in effect for the duration of the permit.

If the ratio of dissolving kraft to market bleached kraft changes, certain adjustments may have to be made in the limitations, but in no case will the daily allowable BOD_5 exceed 35,000 lbs. per day.

5. Any discharge point sources of stormwater runoff shall not cause any water quality violations in the stream.

Attachment 1
Short-Term Chronic Toxicity Test
Environmental Science & Engineering

Environmental Science & Engineering, Inc.
A CILCORP Company

October 1, 1993

Walter G. Murray
ITT Rayonier
4470 Savannah Highway
Jesup, Georgia 31545

Dear Mr. Murray:

Enclosed is a copy of the letter report summarizing the results of the bioassay performed in September 1993 using effluent from the ITT Rayonier plant in Jesup, Georgia.

If you have any questions, please call me at (904) 332-3318.

Sincerely,

Max Overman

Max Overman
Fate and Effects Department

P.O. Box 1703 Gainesville, FL 32602-1703 Phone (904) 332-3318 (800) 874-7872 Fax (904) 332-0507

Environmental
Science &
Engineering, Inc.
A CILCORP Company

September 30, 1993

Mr. Walter G. Murray
ITT Rayonier
4470 Savannah Highway
Jesup, Georgia 31545

RE: Results of a Short-Term Chronic Definitive Toxicity Test conducted from September 22 through 29, 1993 with Effluent Samples from ITT Rayonier, Jesup, Georgia.

A short-term chronic definitive toxicity test was conducted at ESE in Gainesville, Florida to determine the chronic effect of effluent samples from ITT Rayonier's Jesup, Georgia plant to the freshwater cladoceran, Ceriodaphnia dubia. The criteria for effect were mortality and reproduction. All raw data related to this study are maintained at ESE, Gainesville, Florida.

Testing procedures followed guidelines in "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (EPA/600/4-89/001).

The tests were conducted from September 22 through 29, 1993. Twenty-four hour composite samples of effluent were received at ESE on September 22, 24, and 25, 1993, on ice. Effluent samples were stored at 4 $\pm$ 2 °C. Test concentrations were 4.15, 10, 20, 40, and 100 percent effluent and a dilution water control. A prepared water, 20% Perrier®/80% Milli-Q®, was used as the dilution water. Ten cladocerans (1 cladoceran per replicate, 10 replicates) were tested at each test concentration. Cladocerans were fed 0.1 mL of both a yeast/trout chow/cereal leaves mixture and a green alga concentrate daily.

The test was conducted at 23.0 to 25.6 °C. Water quality parameters remained within acceptable ranges throughout the test. The 100 percent effluent was aerated gently prior to use due to a low dissolved oxygen content.

A reference toxicant test demonstrated that organism sensitivity was within ESE's normal limits.

Cladoceran Test Results

After 7 days, control organism survival was 100%. Survival of C. dubia in the test exposures ranged from 90 to 100%. Survival in the test exposures was not statistically less ($p=0.05$) than the controls. After 7 days, all of the criteria for a valid test ($\geq$ 60% of control females produced 3 broods; average neonates produced was $\geq$ 15.0 for control females) had been met. After 7 days of exposure, the average number of neonates produced by control C. dubia females was 15.5; average neonate production in the test exposures ranged from 0.2 (100 percent effluent) to 30.7 (10 percent effluent). Reproduction in the 100 percent effluent exposure was statistically

ESE Project No. 3933000V-0400-3140

P.O. Box 1703 Gainesville, FL 32602-1703 Phone (904) 332-3318 (800) 874-7872 Fax (904) 332-0507

less (p=0.05) than control reproduction. The NOEC based on C. dubia survival and reproduction after 7 days of exposure to ITT Rayonier effluent was determined to be 40 percent effluent.

References:

United States Environmental Protection Agency (USEPA): *Short-Term Methods for Estimating The Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*; March 1989; EPA/600/4-89/001.

Gulley, D., A. Boelter, and H. Bergman; Department of Zoology and Physiology, University of Wyoming, USA: *Toxstat, Version 3.3*; April 1991.

Hamilton, M.A., R.C. Russo, and R.V. Thurston, 1977. *Trimmed Spearman-Karber Method For Estimating Median Lethal Concentrations in Toxicity Bioassays*. Environ. Sci. Technol. 12(4):417 (1978).

Sincerely,

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

Max Overman

Max Overman
Fate and Effects Department

Enclosures

SUMMARY OF RESULTS
CHAIN-OF-CUSTODY INFORMATION
CLADOCERAN CHRONIC TEST DATA
REFERENCE TOXICANT TEST DATA

Summary of *Ceriodaphnia dubia* Survival and Reproduction after a 7-Day Exposure to Effluent from the ITT Rayonier, Jesup, Georgia Plant.

Concentration (% effluent)	Percent Survival	Number of Adult Females	Average Neonates Per Adult Female
Control	100	8	15.5
4.15	90	8	24.6
10	100	7	30.7
20	100	9	24.3
40	90	8	14.8
100	90	10	0.2*

* Statistically less (p=0.05) than the control.

Source: ESE, 1993.

CHAIN OF CUSTODY INFORMATION

Environmental Science & Engineering, Inc.
Aquatic Toxicology Department
Gainesville, Florida

Page: 57
ESE QA Form Number: 011A
Effective: MAR 1993

SUBJECT: EFFLUENT LOG

Test Effluent: Outfall Effluent Project Number: 3933000V-0400-3140

Sponsor: ITT Rayonier Date Effluent Received: 9/22/93

Type and Number of Containers Received: 3 x 0.5 gallon jugs (sealed)

Mode of Transportation: ___ Mail ___ Airline ___ UPS ___ FedEx ___ Bus ✓ Other: ITT Rayonier personnel

Label Information: ITT Rayonier
9/20/93 - 9/21/93
1430 - 1430
outfalls 001 + 002
Phipps

Test Requires Renewal? (YES) NO If Yes, when: Daily

INITIAL EFFLUENT CHARACTERISTICS

Temperature Upon Receipt: 2.0°C (Conductivity)/Salinity (28.0): 1700 umhos/cm

pH: 7.8 Total Residial Chlorine: — DO: 7.2 mg/L

Color: Brown Composite: Yes Grab: No Other: *

Storage Location/Conditions: Used when received; remainder stored in effluent storage refrigerator at 4±2°C.

Date Recorded: 9/22/93 Recorded By: KLT

If test requires renewal samples, additional sample receipt/ descriptions should be detailed below. Please provide date received, sample description as requested above, and receiver's initials.

* Alkalinity + Hardness recorded on RAW data sheets.

	Temp (°C)	Cond (umhos/cm)	Salinity (‰)	pH	DO (mg/L)	color	composite
JK Sample #2	9.6	2000	2	7.9	5.9	brown	yes

rec'd 9/24/93 : Fed-X # 7684558232
Alkalinity & Hardness recorded on raw data sheets

MO Sample #3 Temp (°C): 9.2 Cond: (umhos/cm): 2000 Salinity (‰): 2 pH: 7.9
D.O. (mg/L): 8.8 color: brown
Rec'd 9/25/93: Fed-X # 7684558243
Alkalinity & Hardness recorded on raw data sheets.

SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

☐ 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax (912) 352-0165
☐ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (904) 878-3994 — Fax (904) 878-9504
☐ 414 Southwest 12th Avenue, Deerfield Beach, FL 33442 — Phone: (305) 421-7400 — Fax (305) 421-2584
☐ 900 Lakeside Drive, Mobile, AL 36693 — Phone: (205) 666-6633 — Fax (205) 666-6696
☐ 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax (813) 885-7049

ALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

D. NUMBER	PROJECT NUMBER	PROJECT NAME	MATRIX TYPE	REQUIRED ANALYSES	PAGE	OF

ENT NAME	TELEPHONE/FAX NO.
TT RAYONIER	912-427-5424

ENT ADDRESS	CITY, STATE, ZIP CODE
WAY 301 N.	JESUP, GA. 31545

MPLER(S) NAME(S)	CLIENT PROJECT MANAGER
	W. G. MURRAY

ESE Proj. # 3933000V-0400-3140

☐ STANDARD TAT

☐ EXPEDITED TAT *

REPORT DUE DATE _____

* SUBJECT TO RUSH FEES

SAMPLING DATE	SAMPLING TIME	SAMPLE IDENTIFICATION	AQUEOUS MATRIX	NONAQUEOUS MATRIX	OIL MATRIX	AIR MATRIX	NUMBER OF CONTAINERS SUBMITTED									
9/21/93		EFFLUENT SAMPLE					BIO.									
									DIL.	4.15%						
										10%						
										20%						
										40%						
										100%						

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Paul Beal								

CEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
Max Overman	9/22/93	1330						

FOR SAVANNAH LABORATORY USE ONLY

CEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	S.L. LOG NO.	LABORATORY REMARKS
			☐ YES ☐ NO			

SL ~~SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.~~ E.S.E.

☐ 5102 LaRoche Avenue, Savannah, GA 31404 Phone: (912) 354-7858 Fax (912) 352-0165
☐ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 Phone: (904) 878-3994 Fax (904) 878-9504
☐ 414 Southwest 12th Avenue, Deerfield Beach, FL 33442 Phone: (305) 421-7400 Fax (305) 421-2544
☐ 900 Lakeside Drive, Mobile, AL 36693 Phone: (205) 666-6633 Fax (205) 666-6696
☐ 6712 Benjamin Road, Suite 100, Tampa, FL 33634 Phone: (813) 885-7427 Fax (813) 885-7049

IALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

). NUMBER	PROJECT NUMBER	PROJECT NAME	MATRIX TYPE	REQUIRED ANALYSES	PAGE	OF

IENT NAME	TELEPHONE/FAX NO.
TT RAYONIER	912-427-5424

IENT ADDRESS	CITY, STATE, ZIP CODE
470 SAV. HIWAY	JESUP, GA. 31545

MPLER(S) NAME(S)	CLIENT PROJECT MANAGER
L. G. MURRAY	

ESE Proj. # 3933000V-0400-3140

☐ STANDARD TAT

☐ EXPEDITED TAT *

REPORT DUE DATE _____

* SUBJECT TO RUSH FEES

SAMPLING DATE	SAMPLING TIME	SAMPLE IDENTIFICATION	AQUEOUS MATRIX	NONAQUEOUS MATRIX	OIL MATRIX	AIR MATRIX	NUMBER OF CONTAINERS SUBMITTED										
/22-	23/93	EFFLUENT SAMPLE	✓				3	FOR	BIO.								

PLEASE RETURN CHEST

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	9/23/93	16:00	[signature]	9/24/93	1215			

CEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

FOR SAVANNAH LABORATORY USE ONLY

CEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	S.L. LOG NO.	LABORATORY REMARKS
			☐ YES ☐ NO			

SL ~~SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.~~ E.S.E.

☐ 5102 LaRoche Avenue, Savannah, GA 31404 Phone (912) 354 7858
☐ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 Phone (904) 878 3994
☐ 414 Southwest 12th Avenue, Deerfield Beach, FL 33442 Phone (305) 421 7400
☐ 900 Lakeside Drive, Mobile, AL 36693 Phone (205) 666-6633
☐ 6712 Benjamin Road, Suite 100, Tampa, FL 33634 Phone: (813) 885-7427

IALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

). NUMBER	PROJECT NUMBER	PROJECT NAME	MATRIX TYPE	REQUIRED ANALYSES	PAGE	OF

IENT NAME: TT RAYONIER
TELEPHONE/FAX NO.: 912-427-5424
IENT ADDRESS: 470 SAV. HIWAY
CITY, STATE, ZIP CODE: JESUP GA. 31545
MPLER(S) NAME(S): V.G. MURRAY
CLIENT PROJECT MANAGER:

☐ STANDARD TAT
☐ EXPEDITED TAT *
REPORT DUE DATE _____
* SUBJECT TO RUSH FEES

SAMPLING DATE	SAMPLING TIME	SAMPLE IDENTIFICATION	AQUEOUS MATRIX	NONAQUEOUS MATRIX	OIL MATRIX	AIR MATRIX	NUMBER OF CONTAINERS SUBMITTED
23-24/93		EFFLUENT SAMPLE	✓				3 FOR BIO.
		THIS IS THE LAST SHIPMENT OF SAMPLE.					
		ESE Proj. # 3933000Y-0400-3140					
		PLEASE RETURN COOLER UPS					

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
TT Murray	9/24/93	16:00	Mary Overman	9/25/93	1400			
CEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

FOR SAVANNAH LABORATORY USE ONLY

CEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	S.L. LOG NO.	LABORATORY REMARKS
			☐ YES ☐ NO			

Environmental Science & Engineering, Inc.
Aquatic Toxicology Laboratory
Gainesville, Florida

Page: ____
ESE QA Form No.: 021
Effective: FEB 1993

SUBJECT: WATER HARDNESS WORKSHEET

Sponsor: ITT Project Number: 3933000V-0400

Test Substance: Effluent Test Species: C. dubia

Data By: HT Date: 9/22/93 Time: 1430

Normality of EDTA Titrant: ~~1.02~~ WPHT 9/22/93 0.01M

Correction Factor (based on standardization of EDTA Titrant): 1.02

Test Conc'n (units)	Sample Volume (mL)	Dilute to (mL)	Initial Buret Reading (mL)	Final Buret Reading (mL)	Total Titrant Used (mL)	TOTAL HARDNESS (mg/L) [corrected]
20% Reuse/ 80% Milli-Q	100	0.0	0.0	6.6	6.6	67
100% Effluent	25	100	0.0	3.6	3.6	144
100% 9/22/93 Effluent	25	100	0.0	3.3	3.3	135
100% Effluent 9/23/93 mc	25	100	0.0	3.5	3.5	140

Calculation of Total Hardness (mg/L as CaCO3): A x B x 1,000 / mL Sample

where A = mL of Titrant, and
B = mg CaCO3 equivalent to 1.00 mL EDTA Titrant
(1 mg CaCO3 = 1 mL EDTA Titrant)

Total Hardness x Correction Factor = [corrected] Total Hardness

Environmental Science & Engineering, Inc.
Aquatic Toxicology Laboratory
Gainesville, Florida

Page: _____
ESE QA Form Number: 020
Effective: MAR 1993

SUBJECT: WATER ALKALINITY WORKSHEET

Sponsor: ITT
Project Number: 3933000V-0400
Test Substance: Effluent
Test Species: C. dubia

Data By: HT
Date: 9/22/93
Time: 1500

Normality of H2SO4 (Sulfuric Acid): 0.02N

Correction Factor (based on standardization of H2SO4 titrant): 1.00

Test Concns (define units)	Sample Volume (mL)	Dilute To (mL)	Initial Buret Reading (mL)	Final Buret Reading (mL) To pH 4.5	4.2	Titrant Used (mL)	Total Alkalinity (mg/L as CaCO3)
20% Effluent 80% Milli-Q	100	NA ~~0.0~~ (wt) no 9/10/93	0.0	6.0	—	6.0	60
100% Effluent	100	~~0.0~~	0.0	36	—	36.0	360
9/24/93 100% Effluent	100	~~0.0~~	0.0	36.3	—	36.3	363
9/25/93 100% Effluent	100	~~0.0~~	0.0	38.5	—	38.5	385

Calculation of Total Alkalinities > 20 mg/L as CaCO3:

$$\text{Total Alkalinity} = \frac{B \times N \times 50{,}000}{\text{mL sample}}$$

where B = mL titrated
N = normality of acid

Total Alkalinity x Correction Factor = [corrected] Total Alkalinity

Calculation of Total Alkalinities < 20 mg/L as CaCO3:

$$\text{Total Alkalinity} = \frac{(2B-C) \times N \times 50{,}000}{\text{mL sample}}$$

where B = total mL titrant to pH 4.5
C = total mL titrant to pH 4.2
N = normality of acid

CLADOCERAN CHRONIC TEST DATA

Environmental Science & Engineering, Inc.
Aquatic Toxicology Laboratory
Gainesville, Florida

Page: ____
ESE QA FORM: 056
EFFECTIVE: January, 1993

SUBJECT: CERIODAPHNIA CHRONIC TEST DATA

Sponsor: ITT Project No.: 3933000V-0400-3140

Test Substance: Effluent Test Species: Ceriodaphnia dubia

ANIMAL HISTORY

Lot No.: CD92293 Date Neonates Collected: 9/22/93

Age of Neonates (hours): <24 hrs old 8 hrs

See Page No. 140 of Cladoceran Neonate History Log

Condition of Neonates: Normal

TEST CONDITIONS

Protocol: EPA/600/4-89/001

Dilution Water: 20% Perrine/80% Millipore Type Lighting: Fluorescent Photoperiod: 16/8

Test Container: 30 mL Plastic Beaker Solution Volume: 15 mL

TEST SOLUTION PREPARATION

Test Concentration (%) mg/L	CTRL	4.15%	10 %	20%	40%	100%
Amount of Effluent/ Stock Added (ml)	—	8.3	20	40	80	200
Amount of Dilution Water Added (ml)	200	191.7	180	160	120	—
Test Solution Observations						

TEST VALIDITY CRITERIA

Number Young per Surviving Control Adult (Female): 15.5

Percent of Surviving Control Adults (Females) with 3 Broods: 75%

TEST SUMMARY

Test Concentration (%)	Number Young	Number Broods	Female Adults	# Young per Adult	# Broods per Adult
Control	124	22	8	15.5	2.75
4.15	197	23	8	24.6	2.88
10	215	23	7	30.7	3.29
20	219	25	9	24.3	2.78
40	118	18	8	14.8	2.25
100	2	1	10	0.2	0.1

ADDITIONAL COMMENTS: Effluent from outfall 001 + 002.

Test Data Recorded By: KST Date: 9/22/93

Test Summary Recorded By: MO Date: 9/29/93

Environmental Science & Engineering, Inc.
Aquatic Toxicology Laboratory
Gainesville, Florida

Page: ____
ESE QA Form Number: 018
Effective: APR 1993

Project: 3933000V-0400

DAILY LOG

9/22/93 MO — Composite samples of Outfall 001 + 002 effluent were transported to ESE by ITT-Rayonier personnel. A portion of the effluent was warmed to test temperature and used to prepare test concentrations. The test organisms (C. dubia) were added to the test chambers at 1800. Prior to the addition of organisms, the dissolved oxygen levels were measured to see if they had dropped any. Only ~~the D.O.~~ no 9/22/93 in the 100% effluent concentration had the D.O. dropped. At 1800, the D.O. was measured to be 7.8 mg/L (the initial D.O. was 5.8 mg/L; after 5 minutes of aeration, the D.O. had risen to 7.8 mg/L and aeration was stopped). The test chambers will not be aerated.

CTM-5 was placed in the water bath + reset after equilibration.

9/23/93 Test solutions prepared as on 9/22/93 using sample received 9/22/93
Test monitored and solutions renewed
CTM-5 reads min 23°C max 23.5°C (Reset)

9/24/93 JK Test solutions prepared as on 9/22/93 using samples rec'd 9/24/93
Test monitored renewed
CTM-5 reads: min 22.5°C max 23.0°C reset
* 100% effluent was aerated for approximately 10 minutes to raise the DO from 5.0 mg/L to 8.2 mg/L prior to renewal

9/25/93 JK Test solutions prepared as on 9/22/93 using samples rec'd 9/24/93, test monitored renewed
CTM-5 reads min 22°C max 24°C reset
*100% effluent was aerated for 10 minutes to raise DO from 5.9 mg/L to 8.3 mg/L

Environmental Science & Engineering, Inc.
Aquatic Toxicology Laboratory
Gainesville, Florida

Page: ____
ESE QA Form Number: 018
Effective: APR 1993

Project: 3933000V-0400-3140

DAILY LOG

9/26/93 Test fully monitored and renewed using sample received 9/25/93 ; CTM-5 reads min 23°C max 25°C, reset (w/ JK 9/26/93)

9/27/93 Test fully monitored and renewed using sample #3 (rec'd 9/25/93) ; CTM-5 reads min: 24°C, max 25°C, reset

Note: effluent was not aerated.

9/28/93 Test fully monitored and renewed with sample #3. CTM-5 reads min: 23.5°C, max: 25°C. Reset.

9/29/93 CM Test fully monitored. CTM-5 reads min 24°C max 25°C. Test ended.

9/29/93 MO - 10 C. dubia were identified as males (small, ~~tri~~ diamond-shaped) and were marked with ⊙ and M on the data sheets. Males will be included in survival statistics but not in reproduction statistics. MO 9/29/93

Environmental Science and Engineering, Inc.
Aquatic Toxicology Department
Gainesville, Florida

Page: _____
ESE QA Form Number: 106
Effective: August 1990

SUBJECT: DAILY FEEDING OF TEST ORGANISMS

Test Species: C. dubia
Test Substance: Effluent

Sponsor: ITT Rayonier
Project Number: 3933E00EV-0400

Day	Date	Time	Initials	Food Type	Quantity	Comments
0	9/22/93 ~~1810~~	1810	MO	YTC + algae	0.1 ml of each	per replicate
1	9/23/93	1555	JHT	YTC + Algae	0.1 ml of each	per replicate
2	9/24/93	1540	JK	YTC + Algae	0.2 ml* of each	per replicate
3	9/25/93	1200	JK	YTC + Algae	0.2 ml* of each	per replicate
4	9/26/93	1645	JK	YTC Algae	0.1 ml of each	per replicate
5	9/27/93	1615	MO	YTC + algae	0.1 ml of each	per rep.
6	9/28/93	1645	MO	YTC + algae	0.1 ml each	per rep.

*w
9/20

GAINESVILLE, FLORIDA

ESE QA FORM: 055
EFFECTIVE: April, 1986

SUBJECT: CERIODAPHNIA CHRONIC TEST - WATER QUALITY

Sponsor: ITT

Project No.: 39330COV-0400

Test Substance: Effluent

Test Species: Ceriodaphnia dubia

Test Conc.	Parameter	Day 0	Day 1 New	Day 1 Old	Day 2 New	Day 2 Old	Day 3 New	Day 3 Old	Day 4 New	Day 4 Old	Day 5 New	Day 5 Old	Day 6 New	Day 6 Old	Day 7 Old
Control	Temp.	23.3	23.7	23.4	24.2	23.3	23.0	23.7	25.0	25.1	24.6	24.7	24.3	24.8	24.3
	D.O.	8.8	8.6	8.8	8.4	8.8	8.6	8.3	8.4	7.6	8.4	8.2	8.7	8.1	8.7
	pH	8.1	8.1	8.1	8.1	8.2	8.1	8.2	8.1	8.1	8.1	8.0	8.1	8.0	7.9
	Alk.	60	—	—	60	—	60	—	60	—	—	—	—	—	—
	Hard.	67	—	—	67	—	67	—	67	—	—	—	—	—	—
	Conduct.	160	—	—	160	—	160	—	160	—	—	—	—	—	—
4.15%	Temp.	23.2	24.0	23.5	24.3	23.3	23.1	23.7	25.1	25.1	24.6	24.7	24.3	24.8	24.1
	D.O.	8.6	8.6	8.6	8.2	8.6	8.5	8.3	8.3	7.7	8.4	8.1	8.7	8.0	8.6
	pH	8.1	8.1	8.2	8.1	8.1	8.2	8.3	8.1	8.2	8.1	8.0	8.1	8.1	8.0
															—
															—
	Temp.														
	D.O.														
	pH														
10‰	Temp.	23.6	24.1	23.5	24.4	23.3	23.2	23.7	25.1	25.1	24.6	24.8	24.3	25.0	24.1
	D.O.	8.5	8.4	8.6	8.0	8.6	8.4	8.3	8.3	7.7	8.4	8.1	8.6	8.0	8.5
	pH	8.0	8.1	8.3	8.1	8.2	8.1	8.2	8.1	8.2	8.1	8.1	8.1	8.1	8.1
20‰	Temp.	23.4	24.0	23.4	24.4	23.4	23.3	23.8	25.1	25.3	24.5	24.9	24.3	25.0	24.2
	D.O.	8.4	8.3	8.4	7.7	8.5	8.2	8.2	8.3	7.6	8.4	8.0	8.6	8.0	8.5
	pH	8.0	8.0	8.3	8.1	8.3	8.1	8.3	8.1	8.3	8.0	8.2	8.1	8.2	8.2
40‰	Temp.	23.6	24.2	23.5	24.3	23.4	23.5	23.9	25.1	25.4	24.4	25.0	24.4	25.0	24.5
	D.O.	8.1	8.0	8.1	7.4	8.2	7.9	8.1	8.2	7.5	8.3	7.9	8.5	7.9	8.1
	pH	7.9	8.0	8.4	8.0	8.3	8.0	8.3	8.0	8.4	8.0	8.4	8.0	8.4	8.4
100‰	Temp.	23.5	23.7	23.7	24.3	23.5	24.2	24.0	25.0	25.6	24.3	25.1	24.6	25.2	24.7
	D.O.	6.4	6.8	7.4	8.2	7.6	8.3	7.6	7.5	7.6	8.0	7.7	7.5	7.5	7.7
	pH	7.7	7.8	8.4	8.0	8.5	7.8	8.5	7.9	8.6	7.9	8.6	7.9	8.6	8.6
	Alk.	360	—	—	363	—	363	—	385	—	—	—	—	—	—
	Hard.	144	—	—	135	—	135	—	140	—	—	—	—	—	—
	Conduct.	2600	—	—	2600	—	2610	—	2400	—	—	—	—	—	—
	Temp. Device	FS-4	FS-2		FS-4		FS-4		FS-2		FS-2		FS-2		FS-2
	pH Meter	SA250-1	SA250-1		SA250-1		SA250-1		SA250-1		SA250-3		SA250-3		SA250-3
	D.O. Meter	DO-1	DO-1		DO-1		DO-1		DO-1		DO-1		DO-1		DO-1
	Hard. Method	Titr	—		Titr		Titr		Titr		—		—		—
	Alk. Method	Titr	—		Titr		Titr		Titr		—		—		—
	Conductivity Meter	SCT-3	—		SCT 3		SCT 3		SCT 3		SCT 3 9/27/93		—		—
	INITIALS:	HZT	HZT		JK		JK		JK		MO		MO		CM
	DATE:	9/23/93	9/23/93		9/24/93		9/25/93		9/26/93		9/27/93		9/28/93		9/29/93
	TIME:	1600	1515		1530		1105		1545		1530		1610		1600

Hard/Alk = mg/L as $CaCO_3$
Temp. = °C
D.O. = mg/L
Conduct. = umhos/cm

⊛ See daily log mo 9/22/93

JK 9/24/93

HZT 9/23/93

100% pH: 8.5

ESE TOXICOLOGY DEPARTMENT
GAINESVILLE, FLORIDA

PAGE:
ESE QA FORM: 054
EFFECTIVE: April, 1986

SUBJECT: CERIODAPHNIA CHRONIC TEST - SURVIVAL

Sponsor: ITT

Project No.: 3933c00V-0400

Test Substance: Effluent

Test Species: Ceriodaphnia dubia

Test Conc.	Day	1 AD	1 N*	2 AD	2 N	3 AD	3 N	4 AD	4 N	5 AD	5 N	6 AD	6 N	7 AD	7 N	8 AD	8 N	9 AD	9 N	10 AD	10 N
Control	1	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	2	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	3	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	4	A	3	A	0	A	5	A	4	A	0	A	3	A	0	A	5	A	4	A	3
	5	A	0	A	0	A	0	A	0	A	0	A	0	A	6	A	0	A	0	A	0
	6	A	3	A	0	A	6	A	4	A	0	A	4	A	9	A	0	A	3	A	5
	7	A	8	A ●	0	A	9	A	8	A	0 ●	A	9	A	0	A	8	A	7	A	8
			14	M	0		20		16	M	0		16		15		13		14		16
4.15‰	1	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	2	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	3	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	4	A	6	A	3	A	4	A	0	A	4	A	3	A	4	A	6	A	0	A	4
	5	A	0	A	0	A	10	A	0	A	7	A	9	A	8	A	6	DA ●	2	A	9
	6	A	0 ●	A	11	A	0	A	0 ●	A	0	A	0	A	10	A	0			A	13
	7	A ●	0	A	11	A	19	A ●	0	A	14	A	19	A	6	A	15			A	0
		M	0		25		33	M	0		25		31		28		27		2		26
10‰	1	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	2	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	3	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	4	A	0	A	3	A	0	A	3	A	3	A	5	A	3	A	3	A	0	A	4
	5	A	0	A	9	A	0	A	10	A	10	A	9	A	10	A	10	A	0	A	7
	6	A	0	A	0	A	0	A	0	A	0	A	0	A	14	A	15	A	0	A	16
	7	A ●	0	A	12	A ●	0	A	15	A	12	A	16	A	7	A	0	A ●	0	A	19
		M	0		24	M	0		28		25		30		34		28	M	0		46
20‰	1	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	2	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	3	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	4	A	4	A	4	A	4	A	3	A	0	A	2	A	2	A	3	A	2	A	3
	5	A	10	A	7	A	8	A	8	A	0	A	3	A	6	A	9	A	10	A	9
	6	A	0	A	0	A	0	A	0	A	0	A	12	A	15	A	14	A	7	A	12
	7	A	12	A	12	A	11	A	14	A ●	0	A	1	A	0	A	0	A	0	A	12
			26		23		23		25	M	0		18		23		26		19		36
40‰	1	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	2	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	3	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	4	A	2	A	0	A	2	A	1	A	5	A	2	A	1	A	1	A	4	A	0
	5	A	6	A	0	A	4	A	5	A	6	A	3	A	7	A	3	A	6	A	0
	6	A	0	A	0	A	0	A	0	A	0	A	7	A	0	A	6	A	8	A	0
	7	A	9	A ●	0	A	6	A	7	A	9	A	0	A	8	A	0	A	0	D ●	0
			17	M	0		12		13		20		12		16		10		18		

	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
INITIALS:	MO	[illegible]	JK	JK	JK	[illegible]	MO	MO
DATE:	9/22/93	9/23/93	9/24/93	9/25/93	9/26/93	[illegible]	9/28/93	9/29/93
TIME:	1800	1550	1330	1250	1650	[illegible]	1630	1600

*Number of neonates recorded for day observed; not cumulative.

AD = Adult
N = Neonate
A = Alive

M = male

● = identified as being a male

#w1 JK 9/26/93

● MO 9/27/93 (UI)

MO 9/29/93 (Im) (19)

ESE TOXICOLOGY DEPARTMENT
GAINESVILLE, FLORIDA

PAGE:
ESE QA FORM: 054
EFFECTIVE: April, 1986

SUBJECT: CERIODAPHNIA CHRONIC TEST - SURVIVAL

Sponsor: ITT

Project No.: 3933000V-0400

Test Substance: Effluent

Test Species: Ceriodaphnia dubia

Test Conc.	Day	1 AD	1 N*	2 AD	2 N	3 AD	3 N	4 AD	4 N	5 AD	5 N	6 AD	6 N	7 AD	7 N	8 AD	8 N	9 AD	9 N	10 AD	10 N
100%	1	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	2	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	3	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	4	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	5	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	6	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0
	7	A	0	A	0	A	2	A	0	A	0	A	0	A	0	A	0	D	0	A	0
			0		0		2		0		0		0		0		0				0
	1																				
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	6																				
	7																				

INITIALS:	DAY 0 mo	Day 1 [illegible]	Day 2 JK	Day 3 JK	Day 4 JK	DAY 5 mo	DAY 6 mo	DAY 7 MO	DAY 8 [illegible] 9/30/93	
DATE:	9/21/93	9/23/93	9/24/93	9/25/93	9/26/93	9/27/93	9/28/93	9/29/93	9/30/93	
TIME:	1800	1550	1530	1245	1630	1515	1630	1600		

*Number of neonates recorded for day observed; not cumulative.

AD = Adult
N = Neonate
A = Alive

ITT
Cerio survival

Proj # 3933000V-0400

MO 9/30/93

FISHERS EXACT TEST

IDENTIFICATION	NUMBER OF ALIVE	NUMBER OF DEAD	NUMBER OF TOTAL ANIMALS
CONTROL	10	0	10
4.10%	9	1	10
TOTAL	19	1	20

CRITICAL FISHERS VALUE (10,10,10) (p=0.05) IS 6. b VALUE IS 9.
Since b is greater than 6 there is no significant difference between CONTROL and TREATMENT at the 0.05 level.

FISHERS EXACT TEST

IDENTIFICATION	NUMBER OF ALIVE	NUMBER OF DEAD	NUMBER OF TOTAL ANIMALS
CONTROL	10	0	10
10%	10	0	10
TOTAL	20	0	20

CRITICAL FISHERS VALUE (10,10,10) (p=0.05) IS 6. b VALUE IS 10.
Since b is greater than 6 there is no significant difference between CONTROL and TREATMENT at the 0.05 level.

FISHERS EXACT TEST

IDENTIFICATION	NUMBER OF ALIVE	NUMBER OF DEAD	NUMBER OF TOTAL ANIMALS
CONTROL	10	0	10
20%	10	0	10

Prg. # 5753000 01

MD 9/30/93

TOTAL	20	0	20

CRITICAL FISHERS VALUE (10,10,10) (p=0.05) IS 6. b VALUE IS 10.
Since b is greater than 6 there is no significant difference between CONTROL and TREATMENT at the 0.05 level.

FISHERS EXACT TEST

IDENTIFICATION	NUMBER OF ALIVE	NUMBER OF DEAD	NUMBER OF TOTAL ANIMALS
CONTROL	10	0	10
40%	9	1	10
TOTAL	19	1	20

CRITICAL FISHERS VALUE (10,10,10) (p=0.05) IS 6. b VALUE IS 9.
Since b is greater than 6 there is no significant difference between CONTROL and TREATMENT at the 0.05 level.

FISHERS EXACT TEST

IDENTIFICATION	NUMBER OF ALIVE	NUMBER OF DEAD	NUMBER OF TOTAL ANIMALS
CONTROL	10	0	10
100%	9	1	10
TOTAL	19	1	20

CRITICAL FISHERS VALUE (10,10,10) (p=0.05) IS 6. b VALUE IS 9.
Since b is greater than 6 there is no significant difference between CONTROL and TREATMENT at the 0.05 level.

SUMMARY OF FISHERS EXACT TESTS

	NUMBER	NUMBER	SIG

ETI - C. dubia survival Proj. # [illegible]

GROUP	IDENTIFICATION	EXPOSED	DEAD	(P=.05)
	CONTROL	10	0	
1	4.10%	10	1	
2	10%	10	0	
3	20%	10	0	
4	40%	10	1	
5	100%	10	1	

Fisher's Exact Test

Prg. # 3100-

MO 9/30/93

ITT Rayonier - Ceriodaphnia reproduction
File: ITT Transform: NO TRANSFORMATION

Shapiro Wilks test for normality

D = 1316.404

W = 0.857

Critical W (P = 0.05) (n = 50) = 0.947
Critical W (P = 0.01) (n = 50) = 0.930

Data FAIL normality test. Try another transformation.

Warning - The two homogeneity tests are sensitive to non-normal data and should not be performed.

ITT Rayonier - Ceriodaphnia reproduction
File: ITT Transform: NO TRANSFORMATION

Bartletts test for homogeneity of variance

Calculated B statistic = 40.73
Table Chi-square value = 15.09 (alpha = 0.01)
Table Chi-square value = 11.07 (alpha = 0.05)

Average df used in calculation ==> df (avg n - 1) = 7.33
Used for Chi-square table value ==> df (#groups-1) = 5

Data FAIL homogeneity test at 0.01 level. Try another transformation.

NOTE: If groups have unequal replicate sizes the average replicate size is used to calculate the B statistic (see above).

Proj. # 0[illegible]-0400

MO 9/30/93

ITT Rayonier - Ceriodaphnia reproduction
File: ITT Transform: NO TRANSFORMATION

WILCOXON RANK SUM TEST W/ BONFERRONI ADJUSTMENT - Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	RANK SUM	CRIT. VALUE	REPS	SIG
1	Control	15.500				
2	4.10%	24.625	92.00	45.00	8	
3	10%	30.714	84.00	35.00	7	
4	20%	24.333	115.00	56.00	9	
5	40%	14.750	63.50	45.00	8	
6	100%	0.200	55.00	68.00	10	*

Critical values use k = 5, are 1 tailed, and alpha = 0.05

REFERENCE TOXICANT TEST DATA

TRIMMED SPEARMAN-KARBER METHOD. MONTANA STATE UNIV Proj. # 39330000V-0400

FOR REFERENCE, CITE:
HAMILTON, M.A., R.C. RUSSO, AND R.V. THURSTON, 1977.
TRIMMED SPEARMAN-KARBER METHOD FOR ESTIMATING MEDIAN
LETHAL CONCENTRATIONS IN TOXICITY BIOASSAYS.
ENVIRON. SCI. TECHNOL. 11(7): 714-719;
CORRECTION 12(4):417 (1978).

mo 9/30/93

DATE: 9/25/93 TEST NUMBER: DURATION: 48 HOURS
CHEMICAL: SDS SPECIES: C. DUBIA

RAW DATA:

CONCENTRATION(mg/L)	2.50	5.00	10.00	20.00	40.00
NUMBER EXPOSED:	10	10	10	10	10
MORTALITIES:	1	0	7	9	10
SPEARMAN-KARBER TRIM:		5.00%			

SPEARMAN-KARBER ESTIMATES: LC50: 8.82
95% LOWER CONFIDENCE: 6.79
95% UPPER CONFIDENCE: 11.47

NOTE: MORTALITY PROPORTIONS WERE NOT MONOTONICALLY INCREASING.
ADJUSTMENTS WERE MADE PRIOR TO SPEARMAN-KARBER ESTIMATION.

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nvironmental Science & Engineering, Inc.
quatic Toxicology Laboratory
ainesville, Florida

Page: _____
ESE QA FORM: 097SDS
Effective: January 1993

SUBJECT: REFERENCE TOXICANT TEST DATA SHEET

Client: Misc.

Project Number: 3933000V-0400

Test Material

Amount SDS: 0.1002 g
Volume of Milli-Q Water: 100 mL
Date Prepared: 9/25/93

Test Conditions

[X] Definitive
[ ] Screening

[X] Static
Duration : 48 hours

Test Animal History

Species : C dubia
Batch Number : CD 9 24 93
Age / Life Stage : < 24 hours
Date Acclimation / Maintenance Began : 9/25/93
See Page 141 of Cladoceran Neonate History Log for raw data.
Mortality (%) 48 Hrs prior to testing: 0 %

Dilution Water: 20% Perrier : 80% Milli-Q

Lighting : [X] Fluorescent [ ] Incandescent
Photoperiod : 16 hr Light : 8 hr Dark

Test Container Dimensions (cm): 4.4 L x — W x 3.3 H
Test Solution Height : 2 cm
Test Containers : [ ] Open [X] Covered
Test Container Volume : 0.03 Liters
Diluent Volume : 0.015 Liters

Reps / Concentration : 2
Animals / Replicate : 5

Test Area Used	Temperature (C)	Salinity (ppt)
Water bath	25 ~~20~~ +/- 2	0 +/- 0

Protocol Followed: EPA/600/4-89/001 + SOP-A-004

Concentrations Based on: [ ] A.I. [X] W.M.

Container Composition: [ ] Glass [X] Plastic

Test Concentrations: (Units = mg/L):	Control	2.5	5	10	20	40		
Amount Dilution Water Added (mL):	100	99.75	99.5	99	98	96		
Amount SDS Stock Added (mL):	N/A	0.25	0.5	1	2	4		

Additional Observations: _____

Data By: mo Date: 9/25/93

SDS93

Environmental Science & Engineering, Inc.
Aquatic Toxicology Laboratory
Gainesville, Florida

Page: ____
ESE QA Form No.: 097 SDS
Effective: APR 1993

REFERENCE TOXICANT TEST DATA: DAY 0 and 1

Client: MBC.

Project Number: 39330000V-0400

Species: C. dubia

Nominal Concentration (mg/L)	# Alive A	# Alive B	Obs.	Temp. (C)	Sal. (ppt)	D.O. (mg/L)	pH
Date: 9/25/93					Day: 0		
Time: 1350					Analyst: JK		
Control	5	5	None	23.9	—	8.7	8.1
2.5	5	5			—		
5	5	5			—		
10	5	5			—		
20	5	5			—		
40	5	5			—		

Nominal Concentration	# Alive A	# Alive B	Obs. A	Obs. B	Temp. (C)	Sal. (ppt)	D.O. (mg/L)	pH
Date: 9/26/93						Day: 1		
Time: 1500						Analyst: JK		
Control	5	5			-	-	-	-
2.5	4	5	1dead		-	-	-	-
5	5	5			-	-	-	-
10	5	3		2dead		-	-	-
20	4	4	1dead	1dead	-	-	-	-
40	0	0	5dead	5dead	25.6	-	7.6	8.2

Environmental Science & Engineering, Inc.
Aquatic Toxicology Laboratory
Gainesville, Florida

Page: ____
ESE QA Form No.: 097 SDS
Effective: APR 1993

REFERENCE TOXICANT TEST DATA: FINAL DAY

Client: MRC.

Project Number: 3933C00V-0400

Species: C. dubia

Date: ~~9/26~~ 9/27/93

Day: 2

Time: 1500

Analyst: MO

Nominal Concentration (mg/L)	# Alive A	# Alive B	Obs.	Temp. (C)	Sal. (ppt)	D.O. (mg/L)	pH
Control	5	4	None / 1 Dead	24.6	—	8.4	8.1
2.5	4	5	None	↓	—	8.4	8.1
5	5	5	↓	↓	—	8.4	8.1
10	2	1	3 Dead / 2 Dead	↓	—	8.3	8.1
20	0	1	4 Dead / 3 Dead	↓	—	8.3	8.2
40	—	—	—	—	—	—	—

FINAL RESULTS

Nominal Concentration (mg/L)	Number Dead
Control	1
2.5	1
5	0
10	7
20	9
40	10

<< ERNS INITIAL NOTIFICATION REPORT >>
<< REGION 4 >>
Regional Case #: 93-2793

Report Date: 07/31/93 Report Time: 1417 Regional Time: 0 Multiple?: NO
Received By : Multiple Regional Case#:
NRC Report? : YES NRC Case#: 189919 SSI Report?: NO
Date Entered : 06/07/94 Time Entered: 14:12:19 CR_ERNS Case#:

A. REPORTER Confidentiality Requested?: Affiliation:

Reported By : Telephone:
Address :
City/State/Zip: County:

B. DISCHARGER Affiliation: PRIVATE ENTERPRISE

Discharger : ITT RAINIER Telephone:
Contact Name : UNKNOWN, 2nd Telephone:
Address : HWY 301 Facility ID#:
City/State/Zip: JESSOP, GA 31545 County:

C. INCIDENT LOCATION

Address: HWY 301

City/State/Zip: JESSOP, GA 31545
County : WAYNE Milepost:
Latitude : Deg: Min: Sec:
Longitude : Deg: Min: Sec:

D. DATE Discovery Date: 07/31/93 Spill Date: 07/31/93 Spill Time: 1230

E. MATERIAL Material Type: OTHER

Material Name(s)	UN DOT	CAS	CC	QUANTITY	UNIT	WATER QNTY	>RQ
BLACK LIQUOR			NCC	0.00	UNK	0.00	

F. SOURCE Source Type: - FIXED FACILITY -

No. of Tanks: 0 Tank Capacity: 0.00 NONE VID #:
Source Comments:

G. MEDIUM Medium Type: - WATER -

Waterway Affected: ALTAMAHA RIVER

H. CAUSE Cause Type: - NONE SELECTED -

Cause Comments: WATER FROM THE PLANT IS CONTAMINATING THE RIVER

I. DAMAGE Injuries: Deaths: Property Damage > $50,000 : NO

J. ACTIONS Evacuation: NO
NONE

K. NOTIFIED Agency Type: NONE SELECTED

Agency Name:

<< ERNS INITIAL NOTIFICATION REPORT >>
<< REGION 4 >>
Regional Case #: *93-2793*

L. COMMENTS *--See Attachment--*

M. RESPONSE AND EVALUATION Response Comments: *--See Attachment--*

Primary Responding Agency :
Secondary Responding Agency:
Other Responding Agency :

N. REGION SPECIFIC INFORMATION

Fed. Facility *F* Other *F* TSCA *F*
ENPDES *F* RCRA *F* Water *F*
Tributary To:
Comments: See Attached

FOLLOW-UP

C. INCIDENT LOCATION Dun & Bradstreet#:

F. SOURCE Source Code:

G. MEDIUM Medium Code:
Threat(s):

H. CAUSE Cause Code:

J. ACTIONS Evacuation Number: *0*

M. RESPONSE & EVALUATION Incident Status: *NONE SELECTED*

Emergency Response Activity: *NO* Emergency Response Activity Date:
Responding OSC:
Action Memo Date: Action Memo Approved?: *NO*
Release Investigation?: *NO* POLREP Date:
On-Scene Monitoring?: *NO* Telephone Assistance?: *NO*
TDD#:
Enforcement Activities:

ATTACHMENT

--Comments--
NO SHEEN ON WATER, BUT THE WATER TURNS FROM GREEN TO BROWN OR BLACK

--Response Comments--

--Regional Comments--

National Response Center

<< ERNS INITIAL NOTIFICATION REPORT >>
<< REGION 4 >>
Regional Case #: *93-2793*

Report Date: *07/31/93* **Report Time:** *1417* **Regional Time:** *0* **Multiple?:** *NO*
Received By : **Multiple Regional Case#:**
NRC Report? : *YES* **NRC Case#:** *189919* **SSI Report?:** *NO*
Date Entered : *06/07/94* **Time Entered:** *14:12:19* **CR_ERNS Case#:**

A. REPORTER **Confidentiality Requested?:** **Affiliation:**

Reported By : **Telephone:**
Address :
City/State/Zip: **County:**

B. DISCHARGER **Affiliation:** *PRIVATE ENTERPRISE*

Discharger : *ITT RAINIER* **Telephone:**
Contact Name : *UNKNOWN,* **2nd Telephone:**
Address : *HWY 301* **Facility ID#:**
City/State/Zip: *JESSOP, GA 31545* **County:**

C. INCIDENT LOCATION

GA 3620

Address: *HWY 301*

City/State/Zip: *JESSOP, GA 31545*
County : *WAYNE* **Milepost:**
Latitude : **Deg:** **Min:** **Sec:**
Longitude : **Deg:** **Min:** **Sec:**

D. DATE **Discovery Date:** *07/31/93* **Spill Date:** *07/31/93* **Spill Time:** *1230*

E. MATERIAL **Material Type:** *OTHER*

Material Name(s)	UN DOT	CAS	CC	QUANTITY	UNIT	WATER QNTY>RQ
BLACK LIQUOR			*NCC*	*0.00*	*UNK*	*0.00*

F. SOURCE **Source Type:** *- FIXED FACILITY -*

No. of Tanks: *0* **Tank Capacity:** *0.00 NONE* **VID #:**
Source Comments:

G. MEDIUM **Medium Type:** *- WATER -*

Waterway Affected: *ALTAMAHA RIVER*

H. CAUSE **Cause Type:** *- NONE SELECTED -*

Cause Comments: *WATER FROM THE PLANT IS CONTAMINATING THE RIVER*

I. DAMAGE **Injuries:** **Deaths:** **Property Damage > $50,000 :** *NO*

J. ACTIONS **Evacuation:** *NO*
NONE

K. NOTIFIED **Agency Type:** *NONE SELECTED*

Agency Name:

<< ERNS INITIAL NOTIFICATION REPORT >>
<< REGION 4 >>
Regional Case #: *93-2793*

L. COMMENTS *--See Attachment--*

M. RESPONSE AND EVALUATION **Response Comments:** *--See Attachment--*

Primary Responding Agency :
Secondary Responding Agency:
Other Responding Agency :

N. REGION SPECIFIC INFORMATION

Fed. Facility *F* **Other** *F* **TSCA** *F*
ENPDES *F* **RCRA** *F* **Water** *F*
Tributary To:
Comments: **See Attached**

FOLLOW-UP

C. INCIDENT LOCATION **Dun & Bradstreet#:**

F. SOURCE **Source Code:**

G. MEDIUM **Medium Code:**
Threat(s):

H. CAUSE **Cause Code:**

J. ACTIONS **Evacuation Number:** *0*

M. RESPONSE & EVALUATION **Incident Status:** *NONE SELECTED*

Emergency Response Activity: *NO* **Emergency Response Activity Date:**
Responding OSC:
Action Memo Date: **Action Memo Approved?:** *NO*
Release Investigation?: *NO* **POLREP Date:**
On-Scene Monitoring?: *NO* **Telephone Assistance?:** *NO*
TDD#:
Enforcement Activities:

ATTACHMENT

--Comments--
NO SHEEN ON WATER, BUT THE WATER TURNS FROM GREEN TO BROWN OR BLACK

--Response Comments--

--Regional Comments--

Attachment 2
3-Brood Survival & Reproduction
Chronic Test - ABP- GA EPD

AQUATIC BIOMONITORING CHRONIC TESTING

I. T. T. RAYONIER, INC. WPCP

SEPTEMBER 1993

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION
205 BUTLER STREET, S.E.
FLOYD TOWERS EAST
ATLANTA, GEORGIA 30334

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SUMMARY

A 3-brood survival and reproduction chronic test using Ceriodaphnia dubia was conducted September 22-28, 1993 on 3 composite effluent samples from the I. T. T. Rayonier, Inc. Water Pollution Control Plant (WPCP).

A significant reduction in reproduction as compared to the control group occurred in the 100% effluent concentration. All the daphnids in the control and effluent dilutions survived until the test end. The No Observed Effect Concentration (NOEC) and the Lowest Observed Effect Concentration (LOEC) for reproduction equaled 40% and 100% effluent, respectively. The instream wastewater concentration (IWC) is 4.15% effluent under critical low flow environmental conditions. Chronic toxicity is predicted in the receiving stream whenever the effluent IWC is higher than the NOEC. Since the IWC (4.15%) is less than the NOEC (40%), instream chronic toxicity was not predicted. Acute toxicity was not documented in the chronic test.

INTRODUCTION

The Aquatic Biomonitoring Project (ABP), Intensive Surveys Unit of the Environmental Protection Division (EPD), is responsible for performing acute and chronic toxicity tests on treated effluent discharges throughout the State of Georgia. Over the September 20-24, 1993 period, personnel from the Facilities Monitoring Unit (FMU) of EPD collected three 24-hour composite effluent samples from the outfalls 001 and 002 of the I. T. T. Rayonier, Inc. WPCP (NPDES Permit No. GA0003620). The samples were delivered to the ABP base facility by ABP and FMU personnel. The results of the chemical analysis conducted for the compliance sampling inspection are available from the FMU. The WPCP discharge is located in the Water Quality Management Unit 0691 in the Altamaha River Basin. Testing was initiated on

September 22 using the invertebrate test species Ceriodaphnia dubia (daphnid) and was completed on September 28, 1993.

MATERIALS AND METHODS

Testing was performed following the procedures in the U.S. EPA Freshwater Chronic Manual[1] and the recent Revision 1[2]. The test conducted was the "Cladoceran, Ceriodaphnia dubia, Survival and Reproduction Test Method 1002.0." The refrigerated effluent samples were acclimated to room temperature and test dilutions were prepared daily. The first composite sample was used for the test initiation and the day 2 renewal. The 2nd and 3rd composite samples were used for renewals on days 3 & 4 and 5 & 6, respectively. The percent concentrations of the effluent used in this test were 100, 40, 20, 10 and 4.15% plus a dilution water control. The dilution water used in this test was aged reconstituted moderately hard (RMH) water.

The 4.15% effluent concentration represents the treatment facility IWC at critical low flow environmental conditions. This value was obtained by dividing the facility longterm average discharge flow of 63 million gallons per day (mgd) by the sum of that number plus the upstream critical low stream flow (7Q10 or the average 7-day flow having a 10 year recurrence interval). The Water Quality Management Program computed the 7Q10 value of 2250 cubic feet/second for the Altamaha River using the upstream drainage area and productivity factors from nearby locations having flow data. The facility average discharge flow was obtained from the facility discharge records.

The dissolved oxygen (D.O.) concentration was measured using a Yellow Springs Instrument Co. (YSI) Model 57 D.O./Temp. meter (serial #12803). The meter was calibrated daily with tap water using the azide modification of the Winkler titrametric method. The pH measurements were made with a Beckman 44 pH meter (serial #0160179) which was calibrated daily. The specific conductance of each concentration was measured with a VWR Digital Conductivity Meter (serial #023849) calibrated daily (reported values corrected

for cell factor and temperature). Alkalinity was determined using U.S. EPA Method 310.1[3] by titration with sulfuric acid solution N/50 (0.0202-0.0198N). Total hardness was estimated using U.S. EPA Method 130.2[3] by titration with sodium (Di) ethylenediamine tetraacetate (EDTA) after treating with Hydrogen Peroxide.

The total residual chlorine (TRC) was expected to be measured with a HACH DR 100 colorimeter (serial #870723398). It was not possible to measure the TRC in the three composite samples as the sample color and turbidity were above the instrument's capability to zero out with a blank. The HACH colorimeter was checked for accuracy on September 15, 1993 against a series of potassium permanganate standards (0.02, 0.10, 0.50, 1.00, and 2.00 mg/l). Performance of the meter was found to be acceptable.

The test organisms used ranged in age from 18.8-22.3 hours old at the start of the chronic test. The Methods[1,2] require that neonates used in the chronic test be less than 24 hours old and that they all be within an 8 hour age range. The neonates used were obtained from females that had at least 15 total live young in the first three broods and had at least 8 live young in the second or third brood. The organisms were fed daily by adding 0.1 ml each of the daphnid chow mix and the algal food culture to the test cups after they were poured. The cups were placed in the trays according to the randomization grid selected for the test. The test trays were then placed in the incubator for final temperature acclimation prior to transferring the daphnids at the initiation and subsequent daily renewals. The daphnid chow used was a yeast, wheat cereal leaves and trout chow mix. The algal food culture of 34.8-37.9 million cells/ml of Selenastrum capricornutum was grown and concentrated at the ABP base facility. The original culture was obtained from the University of Texas.

The test temperature was maintained at 25 ± 1°C using a Precision dual program illuminated incubator which was set for a 16-hour photoperiod. The water temperatures were continuously recorded inside three sealed test tubes with 25 ml of water using an Electronic Controls Design, Inc. (ECD) Model 50 Datalogger, (Thermocouple, NIST tested), (serial #9108-1566).

The effluent and reference standard toxicant test survival and reproduction data were analyzed using the University of Wyoming, Fish Physiology and Toxicology Laboratory, "TOXSTAT 3.3" statistical computer program.

QUALITY CONTROL

The sensitivity of the test organisms was validated with a 3-brood survival and reproduction chronic standard toxicant test which was conducted using 3.7-8.6 hour old daphnids September 21-28, 1993. The standard toxicant used was cadmium chloride ($CdCl_2$) obtained from the U.S. EPA Cincinnati QA Branch. The nominal test concentrations used were 37.5, 16.9, 6.25, 3.76 and 1.88 μg/l plus a dilution water control of RMH water. The average total hardness of the dilution water was 78 mg/l as $CaCO_3$.

A median lethal concentration (LC50) was not calculated since 50% mortality did not occur within the first 48 hours of the test. The reproduction data were analyzed with the Dunnett's Test to determine whether the mean reproduction was significantly reduced in the cadmium chloride dilutions than that occurred in the RMH water control. The standard toxicant chronic NOEC and LOEC for survival were 16.9 and 37.5 μg/l, respectively. The standard toxicant chronic NOEC and LOEC for reproduction were 6.25 and 16.9 μg/l, respectively. Subsamples of the 37.5, 16.9, 6.25, 3.76, and 1.88 μg/l nominal dilutions were collected and submitted to the EPD Water Quality Laboratory for test concentration verification. The control survival was 100% in the cadmium chloride standard toxicant chronic test and in the effluent chronic test. The U.S. EPA Methods[1,2] require that control survival equal or exceed 90% in acute tests and 80% in chronic tests for test validity.

The minimum D. O. concentration measured during the test period was 4.9 mg/l. This value is equivalent to 59.1% of saturation[4] which is above the 40% minimum amount required when conducting chronic static testing of warm water species.

Interior incubator air and water temperatures were logged daily, and they were maintained at the desired level. The air temperature in the incubator ranged between 23 and 27°C during the test period. The

minimum, maximum and average water temperature values were recorded from the ECD Model 50 Datalogger. The average water temperatures, which were recorded continuously, is summarized in the following table.

Time Period	Day	Min. (°C)	Max. (°C)	Avg. (°C)
PM 930921-22 AM	0	24.3	25.3	24.8
AM 930922-23	1	24.2	25.1	24.7
AM 930923-24	2	24.1	25.3	24.7
AM 930924-25	3	23.8	25.2	24.4
AM 930925-26	4	23.5	24.8	24.2
AM 930926-27	5	23.4	24.9	24.3
AM 930927-28	6	23.4	25.0	24.4

TEST RESULTS

Field TRC measurements were made by FMU personnel at the effluent sampling location using 10% dilutions. The values were:

Date	Sample Type	TRC (mg/l)
930920	Grab 001	1.00
930920	Grab 002	1.30
930921	Grab 001	1.07
930921	Grab 002	2.30
930921	Composite (930920-21)	1.20
930922	Grab 001	0.80
930922	Grab 002	0.80
930923	Grab 001	0.60
930923	Grab 002	0.80
930923	Composite (930922-23)	0.70
930924	Grab 001	0.80
930924	Grab 002	0.80
930924	Composite (930923-24)	0.50

It is not possible to ascertain from the data how much of the measured TRC was due to false positive interferences such as DPD reaction with manganese, nitrite, or strong oxidizers and/or previously introduced residual chlorine compounds. The three composite samples were dark brown in color, slightly turbid with fine suspended solids, and had a pulp mill odor.

The data sheets for the effluent and standard toxicant testing are attached to this report. A summary of the chronic effluent test reproduction and survival data is provided below.

Test Dilution	Mortality At 48 Hours	Mortality At 141 Hours	Mean Live Young/Female	Conc.'s w/Chronic Effect	Chronic Endpoint
Control	None	None	23.9	N/A	N/A
4.15%	None	None	26.5	None	None
10%	None	None	26.0	None	None
20%	None	None	25.4	None	None
40%	None	None	23.1	None	NOEC
100%	None	None	6.9	Yes	LOEC

The Bonforroni T-Test was used to statistically compare the mean number of live young per female in the control and effluent dilutions. The effluent of this treatment facility was found to have chronic effect to daphnids at the 100% concentration. The NOEC and LOEC for reproduction were 40% and 100% of the effluent, respectively. Since the NOEC (40%) is greater than the IWC (4.15%), instream chronic toxicity is not predicted under critical low flow conditions. Acute toxicity was not documented in the chronic test.

REFERENCES

[1]C. I. Weber et al. 1989. Short-term Methods for Estimating The Chronic Toxicity Of Effluents And Receiving Waters To Freshwater Organisms, Second Edition, EPA/600/4-89/001, United States Environmental Protection Agency, EMSL-Cincinnati, Cincinnati, OH 45268.

[2]U.S. EPA. September 1989. Supplement to "Short-term Methods...Chronic...", Revision 1, EPA/600/4-89/001a, U.S.EPA, EMSL-Cincinnati, Cincinnati OH 45268.

[3]United States Environmental Protection Agency. 1983. Methods for Chemical Analysis of Water and Wastes. EPA/600/4-79/020, U. S. EPA, EMSL-Cincinnati, Cincinnati, OH 45268.

[4]Colt, J. 1984. Computation of dissolved gas concentrations in water as functions of temperature, salinity, and pressure. American Fisheries Society Special Publication No. 14.

TEST DATA SHEETS

CH01DPHE.REP

CHRONIC TOXICITY EVALUATION (EPA/600/4-89/001)
SUMMARY OF CLADOCERAN SURVIVAL AND REPRODUCTION TEST DATA

AGENCY CONDUCTING TEST: Georgia DNR-EPD-WQMP-ISU-ABP
TESTING DATES: 930922 (1348-1415) - 930928 (0809-0935)
DILUTION WATER: Reconstituted Moderately Hard (RMH) of 930920

FACILITY TESTED: [illegible] Rayonier, Inc. WPCP
NPDES NUMBER: GA0003620
EFFLUENT: Outfalls 001 & 002
TEST SPECIES: Ceriodaphnia dubia
TEST ORGANISM AGE: 18.8-22.3 hrs. old at test start (1415)
DAILY FEEDING: 0.1 ml ALGAL CONCENTRATE (34.8-37.9 10^3 cells/ml)
0.1 ml DAPHNID CHOW (YWT)

TEMPLATE NUMBER: 6
TEST CONTAINER: Plastic, Anchor-Hocking
CONTAINER SIZE: 30 ml VOLUME: 15 ml

, = TEST ORGANISM ALIVE
E = EPHIPPIAL FEMALE
X = TEST ORGANISM DEAD
M = TEST ORGANISM MISSING
♂ = MALE
AX = ACCIDENTAL DEATH
# = NUMBER OF LIVE YOUNG
G = GRAVID FEMALE (LIVE)
ME = MOLTED EMBRYO(S)
-# = NUMBER OF DEAD YOUNG
I = IMMOTILE = HIGHLY STRESSED

CONC. = RMH

REP. #	CUP #	DAY 1	2	3	4	5	6	7	TTL. LIVE YOUNG
1	11	,	G	5G	1ME 8G	G	12G		25
2	02	,	G	4AX	AX	AX	AX		--
3	43	,	G	4G	6G	G	10G		20
4	44	,	G	4G	7G	G	9G		20
5	35	,	G	4G	7G	G	11G		22
6	16	,	G	5G	9G	G	13G		27
7	07	,	G	6G	G	7G	14G		27
8	18	,	G	5G	7G	G	13G		25
9	59	,	G	5G	8G	G	11G		24
10	20	,	G	5G	8G	G	12G		25

NUMBER OF FEMALES = 9 LIVE YOUNG/FEMALE = 23.9 Σ= 215

CONC. = 20%

REP. #	CUP #	DAY 1	2	3	4	5	6	7	TTL. LIVE YOUNG
1	41	,	G	4G	8G	14G	G		26
2	32	,	G	4G	8G	14G	G		26
3	33	,	G	4G	8G	13G	G		25
4	54	,	G	3G	G	8G	10G		21
5	25	,	G	4G	8G	G	12G		24
6	56	,	G	4G	8G	14G	G		26
7	57	,	G	5G	9G	16G	G		30
8	58	,	G	4G	8G	12G	G		24
9	29	,	G	5G	9G	G	13G		27
10	60	,	G	4G	8G	G	13G		25

NUMBER OF FEMALES = 10 LIVE YOUNG/FEMALE = 25.4 Σ= 254

CONC. = 4.15%

REP. #	CUP #	DAY 1	2	3	4	5	6	7	TTL. LIVE YOUNG
1	51	,	G	4G	9G	15G	G		28
2	42	,	G	4G	8G	15G	G		27
3	13	,	G	4G	8G	4G	11G		27
4	14	,	G	4G	9G	G	14G		27
5	15	,	G	3G	5G	G	7G		15
6	46	,	G	5G	8G	13G	G		26
7	27	,	G	5G	9G	G	16G		30
8	08	,	G	6G	9G	G	16G		31
9	09	,	G	4G	8G	G	15G		27
10	10	,	G	5G	7G	G	15G		27

NUMBER OF FEMALES = 10 LIVE YOUNG/FEMALE = 26.5 Σ= 265

CONC. = 40%

REP. #	CUP #	DAY 1	2	3	4	5	6	7	TTL. LIVE YOUNG
1	31	,	G	5G	8G	13G	G		26
2	52	,	G	5G	8G	10G	G		23
3	23	,	G	4G	8G	G	11G		23
4	34	,	G	5G	8G	G	10G		23
5	55	,	G	4G	8G	9G	G		21
6	36	,	G	5G	7G	6G	G		18
7	47	,	G	6G	7G	12G	G		25
8	28	,	G	5G	7G	G	12G		24
9	49	,	G	4G	9G	10G	G		23
10	40	,	G	6G	8G	G	11G		25

NUMBER OF FEMALES = 10 LIVE YOUNG/FEMALE = 23.1 Σ= 231

CONC. = 10%

REP. #	CUP #	DAY 1	2	3	4	5	6	7	TTL. LIVE YOUNG
1	01	,	G	4G	9G	11G	G		24
2	22	,	G	5G	7G	11G	G		23
3	03	,	G	5G	G	10G	12G		27
4	24	,	G	4G	8G	G	13G		25
5	05	,	G	5G	7G	G	16G		28
6	26	,	G	5G	8G	G	10G		23
7	17	,	G	4G	7G	G	14G		25
8	38	,	G	6G	10G	8G	8G		32
9	39	,	G	5G	8G	G	15G		28
10	30	,	G	4G	7G	G	14G		25

NUMBER OF FEMALES = 10 LIVE YOUNG/FEMALE = 26.0 Σ= [illegible]

CONC. = 100%

REP. #	CUP #	DAY 1	2	3	4	5	6	7	TTL. LIVE YOUNG
1	21	,	G	2ME G	1G	3ME 3G	G		4
2	12	,	G	2G	2ME 4G	5,	G		11
3	53	,	G	2ME 1G	4G	1G	G		6
4	04	,	G	4G	G	1G	3G		8
5	45	,	G	3G	3ME 3G	4ME 2G	G		8
6	06	,	G	1ME 2G	3ME G	G	6ME G		2
7	37	,	G	2G	1ME 3G	5,	G		10
8	48	,	G	1G	4G	G	4ME 1G		6
9	19	,	G	3G	3ME 2G	G	4ME 3G		8
10	50	,	G	3G	3ME 1G	G	3ME 2G		6

NUMBER OF FEMALES = 10 LIVE YOUNG/FEMALE = 6.9 Σ= 69

COMMENTS:

CHO2DPHE.CHM

CHRONIC TOXICITY EVALUATION (EPA/600/4-89/001)
SUMMARY OF SAMPLE CHEMICAL AND PHYSICAL DATA

AGENCY CONDUCTING TEST: Georgia DNR-EPD-VOMP-ISU-ABP
TESTING DATES: 930922 (1348-1415) - 930928 (0809-0935)
DILUTION WATER: Reconstituted Moderately Hard (RMH) of 930920
TEMPLATE #: 5

FACILITY TESTED: J.R.T. Rayonier, Inc. WPCP
NPDES NO.: GA0003620
EFFLUENT: Outfalls 001 & 002

	SAMPLE #1	SAMPLE #2	SAMPLE #3	SAMPLE COMMENTS
TYPE SAMPLE	Composite	Composite	Composite	#1: Dark brown; pulp mill odor; fine solids
DATE(S) COLLECTED	930920-21	930922-23	930923-24	#2: Dark brown; very fine solids
TIME COLLECTED	1430-1430	1000-1000	1000-1000	#3: Dark brown; very fine solids; pulp mill odor
TEST DAYS USED	1 & 2	3 & 4	5 & 6	

	DAY							COMMENTS
CONC.: RMH	1	2	3	4	5	6	7	
TEMP °C *	21.9	23.1	23.5	22.1	23.5	22.6		
D.O. INITIAL	7.8	7.4	7.3	7.35	7.4	7.4		
FINAL	7.7	7.8	7.65	7.9	7.3	7.25		
pH INITIAL	7.87	8.05	8.11	8.06	8.14	8.17		
FINAL	8.29	8.37	8.18	8.45	8.46	8.45		
ALKALINITY mg/l	55	56	56	56	56	56		
HARDNESS mg/l	78	76	80	80	78	76		
CONDUCTIVITY **	280	282	282	284	285	285		
TRC mg/l								

	DAY							COMMENTS
CONC.: 4.15%	1	2	3	4	5	6	7	
TEMP °C *	20.8	22.8	22.3	22.4	22.6	22.8		
D.O. INITIAL	7.8	6.9	7.4	7.35	7.4	7.35		
FINAL	7.9	7.7	7.6	7.7	7.2	7.1		
pH INITIAL	7.74	8.02	8.05	8.07	8.12	8.16		
FINAL	8.37	8.40	8.23	8.43	8.58	8.04		
ALKALINITY mg/l	69	71	84	84	69	70		
HARDNESS mg/l	82	80	80	78	92	84		
CONDUCTIVITY **	384	402	399	389	391	405		
TRC mg/l								

	DAY							COMMENTS
CONC.: 10%	1	2	3	4	5	6	7	
TEMP °C *	21.7	23.2	22.3	22.7	22.6	22.4		
D.O. INITIAL	7.6	7.3	7.3	7.2	7.35	7.3		
FINAL	7.7	7.6	7.5	7.7	7.0	7.4		
pH INITIAL	7.95	8.09	8.07	8.06	8.12	8.15		
FINAL	8.39	8.44	8.29	8.48	8.51	8.30		
ALKALINITY mg/l	--	--	--	--	--	--		
HARDNESS mg/l	--	--	--	--	--	--		
CONDUCTIVITY **	516	528	539	540	535	562		
TRC mg/l								

	DAY							COMMENTS
CONC.: 20%	1	2	3	4	5	6	7	
TEMP °C *	22.0	23.0	22.1	22.9	22.9	23.3		
D.O. INITIAL	7.45	7.35	7.2	6.8	7.25	7.2		
FINAL	7.75	7.7	7.65	7.0	7.2	7.3		
pH INITIAL	8.03	8.07	8.07	8.01	8.09	8.09		
FINAL	8.47	8.53	8.36	8.76	8.66	8.36		
ALKALINITY mg/l	--	--	--	--	--	--		
HARDNESS mg/l	--	--	--	--	--	--		
CONDUCTIVITY **	759	767	772	773	776	783		
TRC mg/l								

	DAY							COMMENTS
CONC.: 40%	1	2	3	4	5	6	7	
TEMP °C *	21.9	22.6	22.1	23.0	23.0	23.1		
D.O. INITIAL	7.4	7.15	7.1	6.7	7.1	7.0		
FINAL	7.4	7.3	7.3	7.7	6.8	7.1		
pH INITIAL	8.07	8.07	8.06	7.98	8.07	8.08		
FINAL	8.52	8.55	8.43	8.58	8.67	8.52		
ALKALINITY mg/l	182	198	188	192	186	180		
HARDNESS mg/l	100E	98E	96E	108E	104E	104E		
CONDUCTIVITY **	1238	1239	1254	1249	1265	1294		
TRC mg/l								

	DAY							COMMENTS
CONC.: 100%	1	2	3	4	5	6	7	
TEMP °C *	21.0	22.5	23.9	23.0	21.7	22.8		
D.O. INITIAL	5.8	5.2	5.1	4.9	5.1	4.9		
FINAL	6.8	6.6	7.2	7.4	6.4	6.8		
pH INITIAL	8.05	7.90	7.88	7.82	7.92	7.91		
FINAL	8.66	8.73	8.59	8.63	8.80	8.71		
ALKALINITY mg/l	368	360	280	388	544	360		
HARDNESS mg/l	148E	142E	146E	148E	140E	150E		
CONDUCTIVITY **	2590	2570	2590	2600	2640	2640		
TRC mg/l ***	****	****	****	****	****	****		

* Temperature readings for chemical data reference only; actual test cups incubated at 25 ± 1°C.
** Corrected for cell factor and temperature at 25°C, units at µmhos/cm.
*** HACH DR100 Colorimeter S/N 870723313 used.
**** Sample color/turbidity above instrument capability to zero out with blank.
NOTE: Total Hardness endpoints estimated = "E"; used Hydrogen peroxide treatment but color change was to muddy brown instead of blue (Organic Ligand Interference).

CHOSDPHX.REP

CHRONIC TOXICITY EVALUATION (EPA/600/4-89/001)
SUMMARY OF CLADOCERAN SURVIVAL AND REPRODUCTION TEST DATA

AGENCY CONDUCTING TEST: Georgia DNR-EPD-WQMP-ISU-ABP
TESTING DATES: 930921 (1522-1555) - 930928 (0755-0837)
DILUTION WATER: Reconstituted Moderately Hard (RMH) of 930920

TEMPLATE NUMBER: 17
TEST CONTAINER: Plastic Anchor Hocking
CONTAINER SIZE: 30 ml VOLUME: 15 ml

TEST TYPE : QUALITY CONTROL
PURPOSE: STANDARD TOXICANT TEST
TOXICANT TESTED: Cadmium Chloride (µg/L nominal)
TEST SPECIES: Ceriodaphnia dubia
TEST ORGANISM AGE: 3.7-8.6 hrs. old at test start (1555)
DAILY FEEDING: 0.1 ml ALGAL CONCENTRATE (34.8 x10 cells/ml)
0.1 ml DAPHNID CHOW (YWT)

✓ = TEST ORGANISM ALIVE
E = EPHIPPIAL FEMALE
X = TEST ORGANISM DEAD
M = TEST ORGANISM MISSING
Y = MALE
AX = ACCIDENTAL DEATH
# = NUMBER OF LIVE YOUNG
G = GRAVID FEMALE (LIVE)
ME = MOLTED EMBRYO(S)
-# = NUMBER OF DEAD YOUNG
! = IMMOTILE * HIGHLY STRESSED

CONC.= RMH

REP. #	CUP #	DAY 1	2	3	4	5	6	7	TTL. LIVE YOUNG
1	01	✓	G	G	5G	7G	G	11G	23
2	32	✓	G	G	4G	7G	G	10G	21
3	53	✓	✓	G	6G	7G	G	10G	23
4	34	✓	G	G	4G	5G	G	9G	18
5	55	✓	G	G	5G	7G	11G	G	23
6	46	✓	G	G	4G	7G	G	9G	20
7	37	✓	✓	G	5G	8G	G	10G	23
8	48	✓	G	G	4G	7G	10G	G	21
9	29	✓	✓	G	4G	8G	G	9G	21
1	30	✓	✓	G	5G	7G	G	10G	22

NUMBER OF FEMALES = 10 LIVE YOUNG/FEMALE = 21.5 Σ= 215

CONC.= 6.25

REP. #	CUP #	DAY 1	2	3	4	5	6	7	TTL. LIVE YOUNG
1	51	✓	G	G	4G	7G	G	10G	21
2	12	✓	G	G	5X	X	X	X	5
3	13	✓	✓	G	1ME 5G	6G	2G	12G	25
4	24	✓	G	G	5G	8G	G	10G	23
5	45	✓	G	G	4G	7G	G	11G	22
6	06	✓	✓	G	4G	7G	G	11G	22
7	17	✓	✓	G	5G	9G	G	11G	25
8	18	✓	✓	G	5G	8G	G	9G	22
9	39	✓	✓	G	5G	7G	G	9G	21
10	50	✓	G	G	4G	8G	9G	G	21

NUMBER OF FEMALES = 10 LIVE YOUNG/FEMALE = 20.7 Σ= 207

CONC.= 1.88

REP. #	CUP #	DAY 1	2	3	4	5	6	7	TTL. LIVE YOUNG
1	21	✓	G	G	5G	8G	G	10G	23
2	42	✓	G	G	4G	8G	G	10G	22
3	03	✓	G	G	4G	8G	G	-1 11G	23
4	44	✓	G	G	6G	7G	G	10G	23
5	15	✓	G	G	5G	6G	G	10G	21
6	26	✓	✓	G	4G	8G	G	11G	23
7	57	✓	G	G	5G	7G	1ME 8G	G	20
8	08	✓	✓	G	4G	7G	G	10G	21
9	49	✓	✓	G	5G	7G	G	10G	22
10	10	✓	G	G	4G	8G	G	11G	23

NUMBER OF FEMALES = 10 LIVE YOUNG/FEMALE = 22.1 Σ= 221

CONC.= 16.9

REP. #	CUP #	DAY 1	2	3	4	5	6	7	TTL. LIVE YOUNG
1	41	✓	✓	G	5G	6*	G	! 4*	15
2	52	✓	G	G	4G	5G	1G	2G	12
3	33	✓	G	G	6G	7G	G	! 5G	18
4	54	✓	G	G	1ME 4G	6G	G	3*	13
5	35	✓	G	G	5G	6G	G	8*	19
6	16	✓	✓	G	5G	G	6G	8*	19
7	27	✓	✓	G	5G	G	6X	X	11
8	28	✓	✓	G	1ME 3G	7G	G	8*	18
9	59	✓	G	G	4G	2ME 1G	G	5X	10
10	40	✓	G	G	4G	5X	X	X	9

NUMBER OF FEMALES = 10 LIVE YOUNG/FEMALE = 14.4 Σ= 144

CONC.= 3.76

REP. #	CUP #	DAY 1	2	3	4	5	6	7	TTL. LIVE YOUNG
1	31	✓	✓	G	4G	7G	G	9G	20
2	22	✓	G	G	5G	8G	G	10G	23
3	23	✓	✓	G	5G	7G	G	12G	24
4	04	✓	G	G	4G	7G	G	11G	22
5	05	✓	✓	G	6G	6G	G	14G	26
6	36	✓	✓	G	5G	8G	G	10G	23
7	07	✓	✓	G	5G	G	9G	13G	27
8	38	✓	✓	G	4G	7G	G	10G	21
9	09	✓	✓	G	4G	G	8G	12G	24
10	20	✓	G	G	4G	6G	G	8G	19

NUMBER OF FEMALES = 10 LIVE YOUNG/FEMALE = 22.8 Σ= 228

CONC.= 37.5

REP. #	CUP #	DAY 1	2	3	4	5	6	7	TTL. LIVE YOUNG
1	11	✓	✓	G	-1 1X	X	X	X	1
2	02	✓	✓	G	5X	X	X	X	5
3	43	✓	✓	G	2X	X	X	X	2
4	14	✓	✓	G	4X	X	X	X	4
5	25	✓	✓	X	X	X	X	X	0
6	56	✓	✓	G	2X	X	X	X	2
7	47	✓	✓	G	2X	X	X	X	2
8	58	✓	✓	G	X	X	X	X	0
9	19	✓	✓	X	X	X	X	X	0
10	60	✓	✓	G	2*	X	X	X	2

NUMBER OF FEMOZALES = 10 LIVE YOUNG/FEMALE = 1.9 Σ= 19

COMMENTS:

CHRONIC TOXICITY EVALUATION (EPA/600/4-89/001)
SUMMARY OF SAMPLE CHEMICAL AND PHYSICAL DATA

AGENCY CONDUCTING TEST: Georgia DNR-EPD-WQMP-ISU-ABP
TESTING DATES: 930921 (1522-1555) - 930928 (0755-0837)
DILUTION WATER: Reconstituted Moderately Hard (RMH) of 930920
TEMPLATE #:

TEST TYPE: QUALITY CONTROL
PURPOSE: STANDARD TOXICANT TEST
TOXICANT TESTED: Cadmium Chloride (µg/l as Cd)

TYPE SAMPLE	Mixed using stock of 930201 from EPA Ampule lot #784
TEST CONCENTRATIONS	Mixed 930921
CHECK SAMPLES	Day 1 start: 6.25, 16.9, 37.5 ; Day 2 start: none ; Day 3 start: none
TO WQ LAB	Day 4 start: none ; Day 5 start none ; Day 6 start: none ; Day 7 start: ALL

	DAY							COMMENTS
CONC.: RMH	1	2	3	4	5	6	7	
TEMP °C *	21.5	21.9	23.1	23.5	22.[illegible]	23.5	22.6	
D.O. INITIAL	7.8	7.8	7.4	7.3	7.35	7.4	7.4	
FINAL	7.4	8.05	7.5	8.1	8.[illegible]	8.3	8.1	
pH INITIAL	7.85	7.87	8.05	8.11	8.06	8.14	8.17	
FINAL	8.14	8.36	8.36	8.29	8.53	8.63	8.48	
ALKALINITY mg/l	56	55	56	56	56	55	56	
HARDNESS mg/l	78	78	76	80	80	78	76	
CONDUCTIVITY **	279	280	282	282	284	285	285	
TRC mg/l								

	DAY							COMMENTS
CONC.: 1.88µg/l	1	2	3	4	5	6	7	
TEMP °C *								
D.O. INITIAL								
FINAL	7.65	7.90	7.7	7.7	8.[illegible]	8.0	7.9	
pH INITIAL								
FINAL								
ALKALINITY								
HARDNESS								
CONDUCTIVITY **								
TRC mg/l								

	DAY							COMMENTS
CONC.: 3.76µg/l	1	2	3	4	5	6	7	
TEMP °C *								
D.O. INITIAL								
FINAL	7.7	7.90	7.9	7.8	8.0	7.9	8.1	
pH INITIAL								
FINAL								
ALKALINITY								
HARDNESS								
CONDUCTIVITY **								
TRC mg/l								

	DAY							COMMENTS
CONC.: 6.25µg/l	1	2	3	4	5	6	7	
TEMP °C *								
D.O. INITIAL								
FINAL	7.8	8.0	7.8	7.9	7.9	7.9	8.1	
pH INITIAL								
FINAL								
ALKALINITY								
HARDNESS								
CONDUCTIVITY **								
TRC mg/l								

	DAY							COMMENTS
CONC.: 16.9µg/l	1	2	3	4	5	6	7	
TEMP °C *								
D.O. INITIAL								
FINAL	7.7	7.90	7.8	7.9	7.9	7.9	8.0	
pH INITIAL								
FINAL								
ALKALINITY								
HARDNESS								
CONDUCTIVITY **								
TRC mg/l								

	DAY							COMMENTS
CONC.: 37.5µg/l	1	2	3	4	5	6	7	
TEMP °C *								
D.O. INITIAL								
FINAL	7.75	7.90	7.75	7.9	8.[illegible]	7.9	[illegible]	
pH INITIAL								
FINAL								
ALKALINITY								
HARDNESS								
CONDUCTIVITY **								
TRC mg/l								

* Temperature readings for chemical data reference [illegible] test cubs incubated at 25 ± 1°C.
** Corrected for cell factor and temperature at 25°C. [illegible] µmhos/cm.

ANALYSIS REPORT

Center For Applied Engineering, Inc.
Environmental Testing Services

Date of Report: 06/22/95
C-of-C Number: C9257
Date Collected: 05/17/95 14:00
Collected By: cst
Date Received: 05/18/95 08:50
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

Attention: Walter Murray
Rayonier, Inc.
P.O. BOX 2070
Jesup GA 31545

Sample Desc: Grab Sample, NPDES Outfall, Jesup, GA

Cust Proj:

Lab ID: 95 0006371

	Result	Unit	Det. Limit	Procedure	Test Date
METALS					
TOTAL					
Silver, Total	0.31	UG/L	.25	200.8	05/23
Aluminum, Total	360	UG/L	17	200.7	05/23
Arsenic, Total	BDL	UG/L	1.55	200.8	05/23
Barium, Total	180	UG/L	7.8	200.7	05/23
Beryllium, Total	5.8	UG/L	.15	200.7	05/23
Cadmium, Total	BDL	UG/L	.6	200.8	05/23
Chromium, Total	BDL	UG/L	3.5	200.8	05/23
Copper, Total	9.5	UG/L	.2	200.8	05/23
Iron, Total	250	UG/L	6.1	200.7	05/26
Mercury, Total	BDL	UG/L	.2	245.1	05/25
Manganese, Total	500	UG/L	1.9	200.7	05/23
Nickel, Total	16.8	UG/L	.35	200.8	05/23
Lead, Total	1.98	UG/L	.25	200.8	05/23
Antimony, Total	BDL	UG/L	.4	200.8	05/23
Selenium, Total	BDL	UG/L	.58	270.2	05/26
Thallium, Total	0.22	UG/L	.15	200.8	05/23
Zinc, Total	36.2	UG/L	.35	200.8	05/23
TOTAL, SALTS					
Magnesium, Total	14	MG/L	.14	200.7	05/23
ORGANIC					
PEST/PCB-GC					
4,4'-DDD	BDL	UG/L	.036	8080	05/23
4,4'-DDE	BDL	UG/L	.027	8080	05/23
4,4'-DDT	BDL	UG/L	.046	8080	05/23
Aldrin	BDL	UG/L	.038	8080	05/23
alpha-BHC	BDL	UG/L	.032	8080	05/23
Aroclor-1016	BDL	UG/L	.77	8080	05/23
Aroclor-1221	BDL	UG/L	.99	8080	05/23
Aroclor-1232	BDL	UG/L	.72	8080	05/23
Aroclor-1242	BDL	UG/L	.79	8080	05/23
Aroclor-1248	BDL	UG/L	.59	8080	05/23
Aroclor-1254	BDL	UG/L	.8	8080	05/23
Aroclor-1260	BDL	UG/L	.69	8080	05/23
beta-BHC	BDL	UG/L	.07	8080	05/23
Chlordane (Technical)	BDL	UG/L	.88	8080	05/23
delta-BHC	BDL	UG/L	.041	8080	05/23
Dieldrin	BDL	UG/L	.072	8080	05/23
Endrin aldehyde	BDL	UG/L	.033	8080	05/23

Note 'BDL' = Below Detection Limit

Distribution of Report:

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Donald Haertel
Laboratory Manager

ANALYSIS REPORT

Center For Applied Engineering, Inc.
Environmental Testing Services

Date of Report: 06/22/95
C-of-C Number: C9257
Date Collected: 05/17/95 14:00
Collected By: cst
Date Received: 05/18/95 08:50
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

Attention: Walter Murray
Rayonier, Inc.
P.O. BOX 2070
Jesup GA 31545

Sample Desc: Grab Sample, NPDES Outfall, Jesup, GA

Cust Proj:

Lab ID: 95 0006371

	Result	Unit	Det. Limit	Procedure	Test Date
Endosulfan II	BDL	UG/L	.021	8080	05/23
Endrin	BDL	UG/L	.041	8080	05/23
Endosulfan sulfate	BDL	UG/L	.056	8080	05/23
Endosulfan I	BDL	UG/L	.046	8080	05/23
gamma-BHC (Lindane)	BDL	UG/L	.025	8080	05/23
Heptachlor epoxide	BDL	UG/L	.035	8080	05/23
Heptachlor	BDL	UG/L	.044	8080	05/23
Toxaphene	BDL	UG/L	.66	8080	05/23
SEMI-VOL-GC/MS					
1,2,4-Trichlorobenzene	BDL	UG/L	5	8270	05/23
1,2-Dichlorobenzene	BDL	UG/L	5	8270	05/23
1,2-Diphenylhydrazine	BDL	UG/L	5	8270	05/23
1,3-Dichlorobenzene	BDL	UG/L	5	8270	05/23
1,4-Dichlorobenzene	BDL	UG/L	5	8270	05/23
2,4,6-Trichlorophenol	BDL	UG/L	5	8270	05/23
2,4-Dinitrophenol	BDL	UG/L	5	8270	05/23
2,4-Dinitrotoluene	BDL	UG/L	5	8270	05/23
2,6-Dinitrotoluene	BDL	UG/L	5	8270	05/23
2-Chloronaphthalene	BDL	UG/L	5	8270	05/23
2-Chlorophenol	BDL	UG/L	5	8270	05/23
2-Nitrophenol	BDL	UG/L	5	8270	05/23
4,6-Dinitro-2-methylphenol	BDL	UG/L	5	8270	05/23
4-Bromophenyl phenyl ether	BDL	UG/L	5	8270	05/23
4-Chloro-3-methylphenol	BDL	UG/L	5	8270	05/23
4-Chlorophenyl phenyl ether	BDL	UG/L	5	8270	05/23
4-Nitrophenol	BDL	UG/L	5	8270	05/23
Acenaphthene	BDL	UG/L	5	8270	05/23
Acenaphthylene	BDL	UG/L	5	8270	05/23
Anthracene	BDL	UG/L	5	8270	05/23
Benzidine	BDL	UG/L	5	8270	05/23
Bis(2-ethylhexyl)phthalate	BDL	UG/L	5	8270	05/23
Benzo(a)anthracene	BDL	UG/L	5	8270	05/23
Benzo(a)pyrene	BDL	UG/L	5	8270	05/23
Benzo (b) fluoranthene	BDL	UG/L	5	8270	05/23
Benzo (k) fluoranthene	BDL	UG/L	5	8270	05/23
Benzo (g,h,i) perylene	BDL	UG/L	5	8270	05/23
Butyl benzyl phthalate	BDL	UG/L	5	8270	05/23
Chrysene	BDL	UG/L	5	8270	05/23
bis-(2-Chloroethyl) ether	BDL	UG/L	5	8270	05/23
bis-(2-Chloroisopropyl) ether	BDL	UG/L	5	8270	05/23

Note 'BDL' = Below Detection Limit

Distribution of Report:

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Donald Haertel
Laboratory Manager

ANALYSIS REPORT

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Environmental Testing Services

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Attention: Walter Murray
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P.O. BOX 2070
Jesup GA 31545

Sample Desc: Grab Sample, NPDES Outfall, Jesup, GA

Cust Proj:

Lab ID: 95 0006371

	Result	Unit	Det. Limit	Procedure	Test Date
Dibenzo (a,h) anthracene	BDL	UG/L	5	8270	05/23
Di-n-butylphthalate	BDL	UG/L	5	8270	05/23
3,3'-Dichlorobenzidine	BDL	UG/L	5	8270	05/23
2,4-Dichlorophenol	BDL	UG/L	5	8270	05/23
Diethylphthalate	BDL	UG/L	5	8270	05/23
2,4-Dimethylphenol	BDL	UG/L	5	8270	05/23
Dimethylphthalate	BDL	UG/L	5	8270	05/23
n-Nitrosodimethylamine	BDL	UG/L	5	8270	05/23
n-Nitroso-di-n-propylamine	BDL	UG/L	5	8270	05/23
Di-n-octylphthalate	BDL	UG/L	5	8270	05/23
bis-(2-Chloroethoxy) methane	BDL	UG/L	5	8270	05/23
Fluorene	BDL	UG/L	5	8270	05/23
Fluoranthene	BDL	UG/L	5	8270	05/23
Hexachlorocyclopentadiene	BDL	UG/L	5	8270	05/23
Hexachlorobutadiene	BDL	UG/L	5	8270	05/23
Hexachlorobenzene	BDL	UG/L	5	8270	05/23
Hexachloroethane	BDL	UG/L	5	8270	05/23
Indeno(1,2,3-cd)pyrene	BDL	UG/L	5	8270	05/23
Isophorone	BDL	UG/L	5	8270	05/23
Naphthalene	BDL	UG/L	5	8270	05/23
Nitrobenzene	BDL	UG/L	5	8270	05/23
n-Nitrosodiphenylamine	BDL	UG/L	5	8270	05/23
Pentachlorophenol	BDL	UG/L	5	8270	05/23
Phenol	BDL	UG/L	5	8270	05/23
Phenanthrene	BDL	UG/L	5	8270	05/23
Pyrene	BDL	UG/L	5	8270	05/23
VOLATILES-GC/MS					
1,1,1-Trichloroethane	BDL	UG/L	.91	8260	05/19
1,1,2,2-Tetrachloroethane	BDL	UG/L	.78	8260	05/19
1,1,2-Trichloroethane	BDL	UG/L	.39	8260	05/19
1,1-Dichloroethane	BDL	UG/L	.96	8260	05/19
1,1-Dichloroethene	BDL	UG/L	.92	8260	05/19
1,2-Dichloroethane	BDL	UG/L	.89	8260	05/19
1,2-Dichloropropane	BDL	UG/L	.81	8260	05/19
2-Chloroethyl vinyl ether	BDL	UG/L	.74	8260	05/19
Acrolein	BDL	UG/L	3.2	8260	05/19
Acrylonitrile	BDL	UG/L	4.1	8260	05/19
Benzene	BDL	UG/L	.84	8260	05/19
Bromodichloromethane	BDL	UG/L	.58	8260	05/19
Bromoform	BDL	UG/L	.73	8260	05/19

Note 'BDL' = Below Detection Limit

Distribution of Report:

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Donald Haertel
Laboratory Manager

ANALYSIS REPORT

Center For Applied Engineering, Inc.
Environmental Testing Services

Date of Report: 06/22/95
C-of-C Number: C9257
Date Collected: 05/17/95 14:00
Collected By: cst
Date Received: 05/18/95 08:50
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

Attention: Walter Murray
Rayonier, Inc.
P.O. BOX 2070
Jesup GA 31545

Sample Desc: Grab Sample, NPDES Outfall, Jesup, GA

Cust Proj:

Lab ID: 95 0006371

	Result	Unit	Det. Limit	Procedure	Test Date
Bromomethane	BDL	UG/L	.85	8260	05/19
Carbon tetrachloride	BDL	UG/L	.93	8260	05/19
Chloroform	BDL	UG/L	.86	8260	05/19
Chlorobenzene	BDL	UG/L	.68	8260	05/19
Chloroethane	BDL	UG/L	.92	8260	05/19
Chloromethane	BDL	UG/L	1	8260	05/19
cis-1,3-Dichloropropene	BDL	UG/L	.79	8260	05/19
Dichlorodifluoromethane	BDL	UG/L	.74	8260	05/19
Dibromochloromethane	BDL	UG/L	.72	8260	05/19
Ethylbenzene	BDL	UG/L	.81	8260	05/19
Methylene chloride	BDL	UG/L	.85	8260	05/19
Trichloroethene	BDL	UG/L	.92	8260	05/19
Trichlorofluoromethane	BDL	UG/L	.71	8260	05/19
Tetrachloroethene	BDL	UG/L	.66	8260	05/19
Toluene	BDL	UG/L	.87	8260	05/19
trans-1,2-Dichloroethene	BDL	UG/L	.85	8260	05/19
trans-1,3-Dichloropropene	BDL	UG/L	.78	8260	05/19
Vinyl chloride	BDL	UG/L	.9	8260	05/19
WET CHEM CHEMICAL					
Cyanide, Total	BDL	MG/L	.005	335.2	05/25
Chemical Oxygen Demand	976	MG/L	100	410.4	05/22
Fluoride	0.62	MG/L	.05	340.2	05/25
MBAS (Surfactants, Foaming Agents)	BDL	MG/L	.8	425.1	05/19
Ammonia as N (NH3+NH4)	2.2	MG/L	.016	350.1	05/26
Nitrate & Nitrite as N	0.32	MG/L	.01	353.2	05/23
Oil & Grease	1	MG/L	1	413.1	05/23
Sulfate	430	MG/L	2	375.4	05/25
Total Phenolics	0.051	MG/L	.005	420.1	05/23
Total Kjeldahl Nitrogen	5.9	MG/L	.11	351.2	05/24
Total Nitrogen	6.22	MG/L	.01	TKN+NOX	05/29
Total Organic Carbon	59	MG/L	1	415.1	05/22
Phosphorus, Total	1.0	MG/L	.015	365.3	05/25

Note 'BDL' = Below Detection Limit

Distribution of Report:

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Donald Haertel
Laboratory Manager

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PH-ONE (813) 577-9334 • FAX (813) 5[illegible]5384

GEORGIA

FISCAL YEAR 1987 NPDES PERMIT REVIEW

FACILITY: T. T. Rayonier, Inc.

NPDES No: GA0003620

APPLICATION DRAFT ✓ (20 days) FINAL (15 days)

____ NEW (10 days)

✓ MAJOR INDUSTRIAL

____ MAJOR MUNICIPAL

____ MINOR PRIMARY

____ MODIFICATION (circle one: Major Ind/Mun. or Minor Pri)

ROUTING:

1. DATE RECEIVED 10/19/87
2. UNIT CHIEF RC 10/19
3. ASSIGNED TO Parlee DUE 11/8/87
4. UNIT CHIEF (If Problems)
5. PERMITS CLERK
6. FILES

COMMENTS:

Rationale + FS provide complete documentation

Limits more stringent than guidelines

2C Screening ok

WQ check WLA - See Part III Special Req'ts Request add. WQ Data R 11/6

ACTION TO BE TAKEN: _____

COMPLETED BY DATE

ITT Rayonier GA0003620
Major Industrial

App. Jesup, Ga
dissolved pulp + bleached Kraft pulp manf. by Kraft process
Cert. letter for No TCP/PCP does not conform w/ guidelines

001 Altamaha River Process + San + RO
002 Altamaha River " " "
Production 1740 tons/day production increases scheduled 1940 by 1990

2C Screening
001 Flow 14.3 MGD (LTA)
Ammonia 0.56 mg OK

T	25-37	Amm	25	30
pH	7.4-8.4	6.9	0.131	0.131
Phenols	70 µg	8.4	0.37	0.37
Remainder	BDL			

002 Flow 47.7 MGD
Amm 0.56 OK
T 25-37
pH 6.9-7.9
Chloroform 280 µg addressed in Rationale < Gold Book 28.9
E-H Phthalate 23
Remainder BDL

2C Okay

River Data provided

FS / Rationale eff. limits set to meet WQS

Complete documentation

Guidelines OK

PERMIT NO. GA 0003620

Major-P

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Georgia Water Quality Control Act (Georgia Laws 1964, p. 416, as amended), hereinafter called the "State Act," the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.), hereinafter called the "Federal Act," and the Rules and Regulations promulgated pursuant to each of these Acts,

ITT RAYONIER, INC.
P. O. Box 207
Jesup, Georgia 31545

is authorized to discharge from a facility located at

U. S. Highway 301 North
Jesup, Wayne County, Georgia

to receiving waters Altamaha River

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, and III hereof.

This permit shall become effective on the date signed by the Director of the Environmental Protection Division.

This permit and the authorization to discharge shall expire at midnight, November 1, 1992.

Signed this _____ **day of** _____.

DRAFT

Director,
Environmental Protection Division

EPD 2.21-1

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning effective date and lasting through November 1, 1992, the permittee is authorized to discharge from outfall(s) serial number(s) 001 and 002 - Process wastewater, sanitary wastes, and stormwater runoff.

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations				Monitoring Requirements		
	kg/day (lbs/day)		Other Units(Specify)				
	Daily Avg.	Daily Max.	Daily Avg.	Daily Max.	Measurement Frequency	Sample Type	Sample Location
Flow-m^3Day (MGD)	-	-	-	-	Continuous	Recorder	Influent or Effluent
BOD_5							
May 1-November 30	10,115(22,300)	15,173(33,450)	-	-	Daily	Composite	Effluent
December 1-April 30	14,515(32,000)	21,772(48,000)	-	-	"	"	"
TSS	19,056(42,010)	35,199(77,600)	-	-	Daily	Composite	Effluent
BOD_{40}	-	-	-	-	Monthly	Composite	Effluent
Color	-	-	-	-	Weekly	Composite	Effluent

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored daily by grab sample at final effluent.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

1. The effluent sample location shall be defined as the discharge stream after treatment, but prior to mixing with any other waters.

2. See Part III, Section B.1. for river monitoring requirements.

3. The pollutant limitations above represent the sum of the pollutants from Outfall 001, added to the pollutants from Outfall 002.

4. See Part III, Section B.2. through B.4. regarding possible changes in the wasteload allocation for BOD_5.

DRAFT

B. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

   The permittee will be in compliance with the effluent limitations on the effective date of the permit.

2. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

DRAFT

Note: EPD as used herein means the Division of Environmental Protection of the Department of Natural Resources.

C. MONITORING AND REPORTING

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Reporting

Monitoring results obtained during the previous one month shall be summarized for each month and reported on an Operation Monitoring Report (Form WQ 1.45), postmarked no later than the 15th day of the month following the completed reporting period. The first report is due on December 15, 1987.
The EPD may require reporting of additional monitoring results by written notification. Signed copies of these, and all other reports required herein, shall be submitted to the following address:

Georgia Environmental Protection Division
Industrial Wastewater Program
205 Butler Street, S.E., Floyd Towers East
Suite 1070
Atlanta, Georgia 30334

3. Definitions

a. The "daily average" discharge means the total discharge by weight during a calendar month divided by the number of days in the month that the production or commercial facility was operating. Where less than daily sampling is required by this permit, the daily average discharge shall be determined by the summation of all the measured daily discharges by weight divided by the number of days sampled during the calendar month when the measurements were made.

b. The "daily maximum" discharge means the total discharge by weight during any calendar day.

c. The "daily average" concentration means the arithmetic average of all the daily determinations of concentration made during a calendar month. Daily determinations of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during that calendar day.

DRAFT

d. The "daily maximum" concentration means the daily determination of concentration for any calendar day.

e. "Weighted by flow value" means the summation of each sample concentration times its respective flow in convenient units divided by the sum of the respective flows.

f. For the purpose of this permit, a calendar day is defined as any consecutive 24-hour period.

4. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations published pursuant to Section 304(g) of the Federal Act.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The exact place, date, and time of sampling;

b. The dates the analyses were performed;

c. The person(s) who performed the analyses;

d. The analytical techniques or methods used; and

e. The results of all required analyses.

6. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Operation Monitoring Report Form (WQ 1.45). Such increased monitoring frequency shall also be indicated. The EPD may require more frequent monitoring or the monitoring of other pollutants not required in this permit by written notification.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained by the permittee for a minimum of three (3) years, or longer if requested by the State Environmental Protection Division.

DRAFT

A. MANAGEMENT REQUIREMENTS

1. Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increases, or process modifications which will result in new, different, or increased discharges or pollutants must be reported by submission of a new NPDES application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the EPD of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

2. Noncompliance Notification

If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the permittee shall provide the Water Protection Branch of EPD with the following information, in writing, within five (5) days of becoming aware of such condition:

a. A description of the discharge and cause of noncompliance; and

b. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

3. Facilities Operation

The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

4. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to navigable waters resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

DRAFT

5. Bypassing

Any diversion from or bypass of facilities covered by this permit is prohibited, except (i) where unavoidable to prevent loss of life or severe property damage, or (ii) where excessive storm drainage, runoff, or infiltration would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The permittee shall operate the treatment works, including the treatment plant and total sewer system, to minimize discharge of the pollutants listed in Part I of this permit from combined sewer overflows or bypasses. The permittee shall monitor all overflows and bypasses in the sewer and treatment system. A record of each overflow and bypass shall be kept with information on the location, cause, duration, and peak flow rate. Upon written notification by EPD, the permittee may be required to submit a plan and schedule for reducing bypasses, overflows, and infiltration in the system.

6. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the State.

7. Power Failures

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall either:

a. In accordance with the Schedule of Compliance contained in Part I, provide an alternative power source sufficient to operate the wastewater control facilities;

or, if such alternative power source is not in existence, and no date for its implementation appears in Part I,

b. Halt, reduce or otherwise control production and/or all discharges from wastewater control facilities upon the reduction, loss, or failure of the primary source of power to said wastewater control facilities.

B. RESPONSIBILITIES

DRAFT

1. Right of Entry

The permittee shall allow the Director of EPD, the Regional Administrator of EPA, and/or their authorized representatives, agents, or employees, upon the presentation of credentials:

a. To enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit; and

b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to sample any discharge of pollutants.

2. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharges emanate, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Water Protection Branch of EPD.

3. Availability of Reports

Except for data determined by the Director of EPD to be confidential under Section 16 of the State Act or the Regional Administrator of the U. S. Environmental Protection Agency under Section 308 of the Federal Act, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the Atlanta office of the EPD. Effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 22(b) of the State Act.

4. Permit Modification

After written notice and opportunity for a hearing, this permit may be modified, suspended, revoked or reissued in whole or in part during its term for cause including, but not limited to, the following:

a. Violation of any conditions of this permit;

b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge; or

d. To comply with any applicable effluent limitation issued pursuant to the order the United States District Court for the District of Columbia issued on June 8, 1976, in Natural Resources Defense Council, Inc. et.al. v. Russell E. Train, 8 ERC 2120(D.D.C. 1976), if the effluent limitation so issued:

(1) is different in conditions or more stringent than any effluent limitation in the permit; or

(2) controls any pollutant not limited in the permit.

DRAFT

5. Toxic Pollutants

Notwithstanding Part II, B-4 above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Federal Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for this pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition. A draft permit will be provided for review and comments prior to issuance.

6. Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

7. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Federal Act.

8. Water Quality Standards

Nothing in this permit shall be construed to preclude the modification of any condition of this permit when it is determined that the effluent limitations specified herein fail to achieve the applicable State water quality standards.

9. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

10. Expiration of Permit

Permittee shall not discharge after the expiration date. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit such information, forms, and fees as are required by the agency authorized to issue permits no later than 180 days prior to the expiration date.

DRAFT

11. Contested Hearings

Any person who is aggrieved or adversely affected by an action of the Director of EPD shall petition the Director for a hearing within thirty (30) days of notice of such action.

12. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

13. Best Available Technology Economically Achievable

Notwithstanding Part II, B-4 above, if an applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 301(b)2 of the Federal Act for a pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with such effluent standard or prohibition. A draft permit will be provided for review and comments prior to issuance.

14. The permittee will implement best management practices to control the discharge of hazardous and/or toxic materials from ancillary manufacturing activities. Such activities include, but are not limited to, materials storage areas; in-plant transfer, process and material handling areas; loading and unloading operations; plant site runoff; and sludge and waste disposal areas.

PART III

A. PREVIOUS PERMITS

1. All previous State water quality permits issued to this facility, whether for construction or operation, are hereby revoked by the issuance of this permit. This action is taken to assure compliance with the Georgia Water Quality Control Act, as amended, and the Federal Clean Water Act, as amended. Receipt of the permit constitutes notice of such action. The conditions, requirements, terms and provisions of this permit authorizing discharge under the National Pollutant Discharge Elimination System govern discharges from this facility.

DRAFT

B. SPECIAL REQUIREMENTS

1. River samples shall be collected and analyzed twice a month during the months, May through November. Samples shall be taken from the U.S. 301 Highway bridge, the ITT Rayonier marker just upstream from the confluence of Penholloway Creek and the Altamaha River, and the monitoring station at Everett City. Sampling shall be done near midstream or at a point which is judged to be representative of the river. Collection of samples shall be taken when flows are less than 10,000 cfs and when the river is at steady flow conditions. The time of collection at the various points shall coincide with time of travel for the river. Samples shall be analyzed for the following:

   a. BOD_5 and BOD_{40}

   b. Dissolved Oxygen

   c. pH

   d. Temperature

   Also, river stage and associated flow at Doctortown should be reported during periods scheduled for sampling whether or not sampling is actually conducted during that time.

2. The data from the river sampling program described above will be used by the Environmental Protection Division to refine and update the current stream model. If water quality violations are documented, limitations in Part I, Section A.1. will be adjusted accordingly.

3. The effluent limitations for BOD_5 for the December through April period may be modified to equal the limitations for the May through November period. The Director will provide written notification to the permittee 180 days prior to this permit modification.

4. Limits on page 2 are based on the permittee's anticipated production rate of 1740 ADTPD in 1988. This assumes that 38 percent of production is dissolving kraft and 62 percent of production is bleached kraft. The permittee anticipates that production will be increased to 1940 ADTPD in 1990 and is requesting a corresponding increase in the wintertime (December 1 - April 30) BOD_5 limitation from 32,000 lbs. per day to 35,000 lbs. per day on a daily average basis.

DRAFT

B. SPECIAL REQUIREMENTS (continued)

By December 1, 1989, the Division will be provided with the expected projected production for the following calendar year and with a summary of the actual production for the previous twelve month period. The effluent limitations will be adjusted in proportion to the projected production and shall not exceed the effluent limits commensurate with the 1940 ADTPD under this permit. This assumes approximately the same ratio of dissolving kraft to market bleached kraft production. These limitations will then remain in effect for the duration of the permit.

If the ratio of dissolving kraft to market bleached kraft changes, certain adjustments may have to be made in the limitations, but in no case will the daily allowable BOD_5 exceed 35,000 lbs. per day.

5. Any discharge point sources of stormwater runoff shall not cause any water quality violations in the stream.

DRAFT

C. BIOMONITORING AND TOXICITY REDUCTION REQUIREMENTS

The permittee may not discharge toxic wastes in concentrations or combinations which are harmful to humans, fish or aquatic life. The permittee shall not discharge an effluent which will kill 10% or more of the exposed test organisms in 96 hours or less, when the test solution contains volumes of effluent and dilution water proportional to the plant design flow and the 7Q10 flow of the receiving stream.

1. If toxicity is suspected in the permittee's effluent, the Division may require the permittee to develop a screening program for whole effluent biomonitoring. The schedule will be as follows for this screening approach:

   a. Within 90 days of Division notification, a study plan detailing the test methodology and test organisms shall be submitted for conducting forty-eight hour acute static renewal tests of the final effluent. If residual chlorine is present in the final effluent from treatment and/or disinfection processes, a prechlorinated or dechlorinated sample will also be tested.

   b. Within 90 days of Division approval of the study plan, the permittee shall conduct and submit the results of the forty-eight hour static renewal tests.

2. If toxicity is found in the permittee's effluent based upon the results of the screening process, the permittee shall, within 90 days of written notification by the Division, submit a Toxicity Reduction Evaluation (TRE) plan to the Division. (Note: Toxicity is defined to be a situation in which the effluent quality is such that 10% or more of the test organisms are killed within 96 hours, in a test solution which contains volumes of effluent and dilution water proportional to the plant design flow and the 7Q10 flow of the receiving stream.) The TRE plan shall detail the action the permittee will implement to eliminate toxicity. Within 270 days of Division approval of the TRE plan, the permittee shall complete implementation of the TRE plan and conduct follow-up biomonitoring of the effluent in accordance with the approved TRE plan. If toxicity is still indicated, the permittee shall continue the TRE plan. The TRE plan shall not be complete until the permittee has eliminated the toxicity in its effluent. On a case specific basis, chronic toxicity testing procedures may be required to verify that the toxicity has been eliminated.

3. If toxicity is not indicated initially, or if there are substantial changes in the effluent composition, the permittee may be required to repeat the forty-eight hour static renewal test upon notification by the Division. On a case specific basis, chronic toxicity testing procedures may also be required. Biomonitoring of the effluent will be required at a minimum of once every three years unless otherwise noted.

Upon approval by the Division, all study plans and TRE plans will become part of the requirements of this permit.

DRAFT

Summary of NPDES Permit Rationale

Name ITT Rayonier NPDES No. GA0003620

Location Jesup, Ga. Major Discharge ✓

Minor Discharge _____ Date 10/2/87 Prepared by L. Kloet

Draft permit is first issuance _____ reissuance with no modifications from previous permit _____ modification of existing permit ✓.

Discharge is industrial ✓ municipal _____ privately owned (domestic wastewater only) _____. If industrial, point source category is Pulp, Paper & Paperboard subcategory is Dissolving Kraft & Market Bleached Kraft production level is 1740 ADT/day SIC code is 2611.

Facility located on stream segment that is and the basis for derivation of limitation is:

✓ Stream water quality limited
- ✓ Based on water quality model
- _____ Based on instream calculation at 7 day, 10 year low flow

_____ Stream effluent limited
- _____ Based on promulgated guidelines
- _____ Based on plant's demonstrated performance
- _____ Based on demonstrated technology

Discussion:

Based on 40 CFR 430.60 Subpart F Dissolving Kraft + 40 CFR 430.70 Subpart G Market Bleached Kraft. 38% production is dissolving kraft, 62% is market bleached kraft.

1740 ADT/day x .38 = 661 ADT/day Dissolving Kraft

BOD5 661 x 24.5 = 16,200 lbs avg daily 661 x 47.2 = 31,200 lbs daily max

TSS 661 x 40.1 = 26,500 lbs avg daily 661 x 74.6 = 49,300 lbs daily max

1740 x .62 = 1080 ~~lbs~~ ADT/day mkt bleached kraft

BOD5 1080 x 16.1 = 17,400 lbs avg daily 1080 x 30.9 = 33,400 lbs daily max

TSS 1080 x 32.8 = 35,400 lbs avg daily 1080 x 60.8 = 65,700 lbs daily max

Promulgated Limits	daily avg	max daily
BOD5 lbs/day	33,600	64,600
TSS " "	61,900	[illegible]

* Existing limits more stringent than guidelines.

Cont'd Summary of NPDES Permit Rationale

Existing BOD_5 limits May - Nov of 22,300 lbs/day will not be changed. December - April BOD_5 limitations will be increased from 30,000 lbs/day to 32,000 lbs/day. This is in recognition of increased production from 1,551 ADT/day to 1,740 ADT/da According to the model, 10,000 lbs of assimilative capacity remain in the Altamaha

Capital improvements are projected and producti is scheduled to increase by 200 ADT/day to 1940 ADT/day by 1990. December - April BOD_5 limits will then increase to 35,000 lbs/day, which will leave 7,000 lbs/day of assimilative capacity in the Altamaha River. Before this additional allocation is granted, the permittee must document that the planned production has been reached and capital improvements ha been made.

Chloroform has been found in detectable concentrations and is one of the 65 Section 307 (a toxic pollutants. Gold book lists acute toxicity at 28.9 mg/l. Company conc. was 280 ~~mg~~/l, considerably less than acute toxicity level. Therefo substance is not in toxic concentrations. No monitoring or limitations will be specified in permit.

APPROVAL
INITIALS _____
DATE _____

NPDES WASTELOAD ALLOCATION

PART I (to be completed by requesting program):
PURPOSE OF REQUEST - Increased production

FACILITY NAME ITT Rayonier COUNTY Wayne
NPDES PERMIT NO. GA 0003620 [ ] NEW [X] MODIFICATION FACILITY NO. 00000305
RECEIVING STREAM Altamaha R. CLASSIFICATION Fishing BASIN Altamaha WQMU 0600
CONSTRUCTION GRANT FACILITY [ ] YES [X] NO USGS QUAD Doctortown
TYPE OF DISCHARGE [ ] DOMESTIC [X] INDUSTRIAL BOTH (give proportion) _____
TYPE(S) OF INDUSTRIAL CONTRIBUTIONS 100% process wastewater - pulp mill
FLOW(S) REQUESTED _____ DESCRIPTION OF TREATMENT UNITS (Clarifier followed by ASB)
32,000 lbs. BOD_5 Daily Avg. Dec.- April
35,000 lbs. BOD_5 Daily Avg. Dec.- April
ADDITIONAL INFORMATION (history, special request, etc.)
See memo detailing special request and history

ATTACHMENTS: #1 LOCATION MAP #2 Data collected by ITT Rayonier; #3 Background Info.
RETURN COPIES TO: Nolton Johnson TITLE Asst.Br.Ch. PROGRAM IWP DATE 10/5/87
_____ TITLE _____ PROGRAM _____ DATE _____
_____ TITLE _____ PROGRAM _____ DATE _____
IF THERE ARE QUESTIONS CONTACT Larry Kloet AT PHONE NO. 656-4887

PART II (to be completed by the Water Quality Management Program): or ATTACH COPY OF WASTELOAD ALLOCATION MODEL

TYPE OF MODEL: TABLETOP [ ] CALIBRATED [ ] CAN NOT BE MODELED [ ]
EXPLAIN HOW CALIBRATED OR WHY CAN NOT BE MODELED _____

TYPE OF MODEL [ ]ANNUAL [ ]SEASONAL IF SEASONAL INCLUDE PARAMETERS FOR CRITICIAL MONTH ONLY
DESIGN TEMP _____ HW DRAINAGE AREA(mi^2) _____ HW 7Q10(cfs) _____
7Q10 YIELD (cfs mi^2) _____ VELOCITY (RANGE - fps) _____ AVG. STREAMFLOW (cfs) _____
SLOPE (RANGE - fpm) _____ K1 _____ K3 _____ K_2 _____ (base e per day - 20°C)
ESCAPE COEFF. (ft^{-1}) _____ SUM OF MODEL REACHS (miles) _____
MINIMUM DISSOLVED OXYGEN IS _____ AT A pt. _____ MILES BELOW OUTFALL

RECOMMENDED LIMITATIONS
(monthly average concentrations, mg/l)

Q, (cfs) _____ BOD_5 _____ NH_3-N _____ DO _____ BOD_{uc}/BOD_5 _____ OTHER ( ) _____
Q_2, (cfs) _____ BOD_5 _____ NH_3-N _____ DO _____ BOD_{uc}/BOD_5 _____ OTHER ( ) _____

ADDITIONAL COMMENTS _____

PREPARED BY _____ DATE _____ REVIEWED BY _____ DATE _____
LETTER SENT TO FACILITY OWNER (DATE) _____
LETTER SENT TO EPA (DATE) _____

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION
270 Washington Street, S. W.
Atlanta, Georgia 30334

FACT SHEET

APPLICATION FOR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT TO DISCHARGE TREATED WASTEWATER TO WATERS OF THE STATE OF GEORGIA

Application No. GA 0003620 Date October 6, 1987

1. SYNOPSIS OF APPLICATION

a. Name and Address of Applicant

ITT Rayonier, Inc.
P. O. Box 207
Jesup, Georgia 31545

b. Description of Applicant's Operation

Pulp and Paper Mill, produces market bleached kraft and dissolving kraft.

c. Production Capacity of Facility

1740 ADT/day, may be increased to 1940 ADT/day by 1990.

d. Applicant's Receiving Waters

Altamaha River

For a sketch showing the location of the discharge(s), see Attachment A.

e. Description of Existing Pollution Abatement Facilities

Screening
Primary Clarification
Nutrient Addition
Aeration Basin

f. Description of Discharges (as reported by applicant)

Serial 001 and 002 Combined

Average Flow	-	62 mgd
Average Winter Temperature	-	22°C
Average Summer Temperature	-	34°C
pH Range (std. units)	-	7.0 to 8.4

Pollutants which are present in significant quantities or which are subject to effluent limitation are as follows:

Effluent Characteristic	Reported Load
BOD_5	32 mg/l
Total Suspended Solids	57 mg/l

Stormwater Runoff Point Sources

Average Flow	-	Varies
Average Winter Temperature	-	N/A
Average Summer Temperature	-	N/A
pH Range (std. units)	-	7.1

Pollutants which are present in significant quantities or which are subject to effluent limitation are as follows:

Effluent Characteristic	Reported Load
BOD_5	5 mg/l
Total Suspended Solids	2 mg/l

2. PROPOSED EFFLUENT LIMITATIONS

Serial 001 and 002 - Combined

Permitted Maximum Temperature - N/A
Permitted pH Range (std. units) - 6.0 - 9.0

Effluent Characteristic	Discharge Limitation
BOD_5	
May 1 - November 30	22,300 lbs/day Avg.Daily 33,450 lbs/day Max.Daily
December 1 - April 30	32,000 lbs/day Avg.Daily 48,000 lbs/day Max.Daily

BOD_5 limitations may be increased to 35,000 lbs/day average daily and 52,500 lbs/day maximum daily during wintertime months (December 1 - April 30) if anticipated production in 1990 is reached.

Serial 002 - N/A

Permitted Maximum Temperature -
Permitted pH Range (std. units) -

Effluent Characteristic	Discharge Limitation

3. MONITORING REQUIREMENTS

The applicant will be required to monitor regularly for flow and those parameters limited in Section 2 above with sufficient frequency to ensure compliance with the permit conditions. Frequency, methods of sampling, and reporting dates will be specified in the final permit.

4. PROPOSED COMPLIANCE SCHEDULE FOR ATTAINING EFFLUENT LIMITATIONS

N/A

5. PROPOSED SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE DISCHARGE

See Part III, Special Requirements of NPDES permit, attached.

6. WATER QUALITY STANDARDS AND EFFLUENT STANDARDS APPLIED TO THE DISCHARGE

The Altamaha River is classified as fishing. The effluent limitations were derived to meet this classification.

7. PROCEDURES FOR THE FORMULATION OF FINAL DETERMINATIONS

a. Comment Period

The Georgia Environmental Protection Division (EPD) proposes to issue an NPDES permit to this applicant subject to the effluent limitations and special conditions outlined above. These determinations are tentative.

Interested persons are invited to submit written comments on the permit application or on EPD's proposed determinations to the following address:

Georgia Environmental Protection Division
205 Butler Street, S.E.
Floyd Towers East, Room 1070
Atlanta, Georgia 30334

All comments received prior to
will be considered in the formulation of final determinations with regard to this application.

b. Public Hearings

Any applicant, affected state or interstate agency, the Regional Administrator of the U. S. Environmental Protection Agency (EPA) or any other interested agency, person or group of persons may request a public hearing with respect to an NPDES permit application if such request is filed within thirty (30) days following the date of the public notice for such application. Such request must indicate the interest of the party filing the request, the reasons why a hearing is requested, and those specific portions of the application or other NPDES form or information to be considered at the public hearing. The Director shall hold a hearing if he determines that there is sufficient public interest in holding such a hearing. If a public hearing is held, notice of same shall be provided at least thirty (30) days in advance of the hearing date.

In the event that a public hearing is held, both oral and written comments will be accepted; however, for the accuracy of the record, written comments are encouraged. The Director or his designee reserves the right to fix reasonable limits on the time allowed for oral statements and such other procedural requirements as he deems appropriate.

Following a public hearing, the Director, unless he should decide to deny the permit, may make such modifications in the terms and conditions of the proposed permit as may be appropriate and shall issue the permit. Notice of issuance or denial will be circulated to those persons or groups who participated in the hearing; to those persons or groups who submitted written comments to the Director on the proposed permit within thirty (30) days from the date of the public notice of the application for permit; and to all persons or groups included on the EPD mailing list.

c. Contested Hearings

Any person who is aggrieved or adversely affected by the issuance or denial of a permit by the Director of EPD may petition the Director for a hearing if such petition is filed in the office of the Director within thirty (30) days from the date of notice of such permit issuance or denial. Such hearing shall be held in accordance with the EPD Rules, Water Quality Control, subparagraph 391-3-6-.01.

Petitions for a contested hearing must include the following:

1. The name and address of the petitioner;

2. The grounds under which petitioner alleges to be aggrieved or adversely affected by the issuance or denial of a permit;

3. The reason or reasons why petitioner takes issue with the action of the Director;

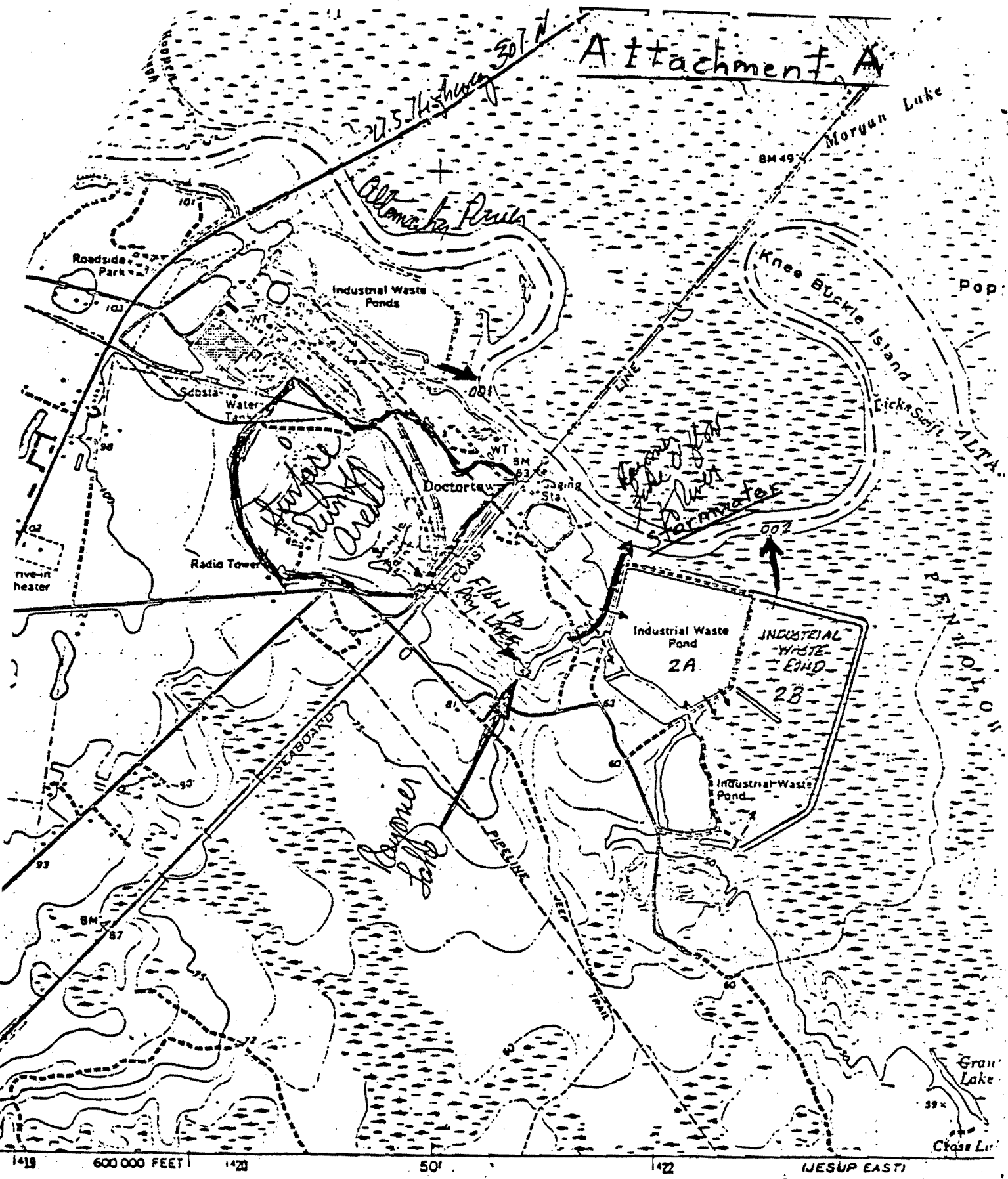
4. All other matters asserted by petitioner which are relevant to the action in question.

d. Issuance of the Permit When No Public Hearing is Held

If no public hearing is held, and, after review of the written comments received, the Director determines that a permit should be issued and that his determinations as set forth in the proposed permit are substantially unchanged, the permit will be issued and will become final in the absence of a request for a Contested Hearing. Notice of issuance or denial will be circulated to those persons who submitted written comments to the Director on the proposed permit within thirty (30) days from the date of the public notice of such proposed permit; and to all persons or groups included on the EPD mailing list.

If no public hearing is held, but the Director determines, after a review of the written comments received, that a permit should be issued but that substantial changes in the proposed permit are warranted, public notice of the revised determinations will be given and written comments accepted in the same manner as the initial notice of application was given and written comments accepted pursuant to EPD Rules, Water Quality Control, subparagraph 391-3-6-.06(7)(b). The Director shall provide an opportunity for public hearing on the revised determinations. Such opportunity for public hearing and the issuance or denial of a permit thereafter shall be in accordance with the procedures as are set forth above.

Attachment A



SCALE 1:24 000

1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 5 FEET
DATUM IS MEAN SEA LEVEL

12/10/80

B. SPECIAL REQUIREMENTS

1. River samples shall be collected and analyzed twice a month during the months, May through November. Samples shall be taken from the U.S. 301 Highway bridge, the ITT Rayonier marker just upstream from the confluence of Penholloway Creek and the Altamaha River, and the monitoring station at Everett City. Sampling shall be done near midstream or at a point which is judged to be representative of the river. Collection of samples shall be taken when flows are less than 10,000 cfs and when the river is at steady flow conditions. The time of collection at the various points shall coincide with time of travel for the river. Samples shall be analyzed for the following:

   a. BOD_5 and BOD_{40}

   b. Dissolved Oxygen

   c. pH

   d. Temperature

   Also, river stage and associated flow at Doctortown should be reported during periods scheduled for sampling whether or not sampling is actually conducted during that time.

2. The data from the river sampling program described above will be used by the Environmental Protection Division to refine and update the current stream model. If water quality violations are documented, limitations in Part I, Section A.1. will be adjusted accordingly.

3. The effluent limitations for BOD_5 for the December through April period may be modified to equal the limitations for the May through November period. The Director will provide written notification to the permittee 180 days prior to this permit modification.

4. Limits on page 2 are based on the permittee's anticipated production rate of 1740 ADTPD in 1988. This assumes that 38 percent of production is dissolving kraft and 62 percent of production is bleached kraft. The permittee anticipates that production will be increased to 1940 ADTPD in 1990 and is requesting a corresponding increase in the wintertime (December 1 - April 30) BOD_5 limitation from 32,000 lbs. per day to 35,000 lbs. per day on a daily average basis.

B. SPECIAL REQUIREMENTS (continued)

By December 1, 1989, the Division will be provided with the expected projected production for the following calendar year and with a summary of the actual production for the previous twelve month period. The effluent limitations will be adjusted in proportion to the projected production and shall not exceed the effluent limits commensurate with the 1940 ADTPD under this permit. This assumes approximately the same ratio of dissolving kraft to market bleached kraft production. These limitations will then remain in effect for the duration of the permit.

If the ratio of dissolving kraft to market bleached kraft changes, certain adjustments may have to be made in the limitations, but in no case will the daily allowable BOD_5 exceed 35,000 lbs. per day.

5. Any discharge point sources of stormwater runoff shall not cause any water quality violations in the stream.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

JUL 12 1989

REF: 4WM-FP

Mr. Jack C. Dozier, P.E., Chief
Water Protection Branch
Environmental Protection Division
Georgia Department of Natural Resources
Floyd Towers East - Room 1058
205 Butler Street, S.E.
Atlanta, Georgia 30334

RE: NPDES Overview

Dear Mr. Dozier:

We have begun our review of the draft permit modifications and your June 29, 1989, correspondence for the following facilities:

Gilman Paper Company	GA0001953
Federal Paper Board Company, Inc.	GA0002801
ITT Rayonier, Inc.	GA0003620
Brunswick Pulp and Paper Company	GA0003654
The Proctor and Gamble Cellulose Company	GA0049336

At this time, we request an extension of review time in order to allow evaluation of the Study Plan to Conduct Dioxin Monitoring in Fish Tissue from the Vicinity of Five Georgia Bleached Kraft Mills by EPA personnel at our Environmental Services Division. We anticipate completing our review and providing comments to these modifications by August 1, 1989. If we are not advised to the contrary, we will assume that this extension has been granted.

If you have any questions, please call Yvonne Martin at 347-3012.

Sincerely yours,

John T. Marlar, Chief
Facilities Performance Branch
Water Management Division

Martin ~~[illegible]~~ 7/10 Childress 7/11 Patrick

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

February 14, 2002

Ms. Stacy Wix
Industrial Wastewater Unit
GA EPD
GA Department of Natural Resources
4220 International Parkway
Suite 101
Atlanta, GA 30364

Re: NPDES Permit for GA 0003620
Rayonier - Jesup, GA

Dear Ms. Wix:

In a previous letter to you dated September 7, 2000, I inadvertently indicated that the applicable effluent guidelines for the Rayonier-Jesup mill include both 40 CFR 430.12 (subpart A) and 430.22 (subpart B). The mill is only subject to the Subpart A guidelines, which are for Dissolving Kraft mills.

If you have any questions or comments regarding our review, please contact me at 404/562-9308 or by email at shell.karrie-jo@epa.gov.

Yours truly,

Karrie-Jo Robinson-Shell, P.E.
Environmental Engineer
Permits, Grants and Technical Assistance Branch
Water Management Division

cc: Dana Dolloff - Rayonier
Justine Thompson - GA Center for the Law and Public Interest

Mr. Dana B. Dolloff
Director, Environmental Affairs
Rayonier Inc.
50 North Laura St.
Jacksonville, FL 32202

Dear Mr. Dolloff:

The purpose of this letter is to respond to your letter dated February 6, 2002, in which you requested clarification of the applicability of effluent limitations guidelines for the dissolving kraft subcategory. You indicated that the applicability of the dissolving kraft effluent limitations in the NPDES permit reissued for the Rayonier dissolving kraft mill in Jesup Georgia has been challenged by the Altahama Riverkeeper.

I have again reviewed our regulations which apply in this case. The proposed preamble indicated that the Agency was considering revising its subcategorization to distinguish among grades of products made at these mills, in addition to proposing revised effluent limitations. However, the proposed BPT, BCT, and BAT effluent limitations guidelines did not include such a change in applicability. The final Cluster Rules focused on Subparts B and E and deferred final rulemaking for Phase III subcategories and thus did not address the applicability language. The final regulation simply brought forward the existing BPT, BCT, and BAT effluent limitations guidelines for the dissolving kraft subcategory, Subpart A, Dissolving Kraft, §430.10, and they "apply to production of dissolving pulp at kraft mills." We are aware this applicability language is not exactly the same as it was proposed and could lead to differing interpretations, as is apparently the case for the Jesup mill. The Agency's ongoing Phase III rulemaking effort will lead to revised promulgated effluent limitations guidelines for the dissolving kraft and dissolving sulfite subcategories. The applicability language for both Subparts A and D will be addressed in that rulemaking.

The Technical Development Document (TDD) for the proposed Cluster Rules addresses this subject, in Chapter 5, Subcategorization, specifically Sections 5.3.1 and 5.4.1. These sections provide the underlying basis for the applicability of Subpart A as it currently exists. Both of these sections indicate that the subcategorization underlying the previously existing effluent limitations guidelines for the dissolving kraft subcategory applies to both dissolving ***and papergrade*** pulps produced at dissolving kraft mills. See the proposed TDD at pages 5-6 (BPT and BCT for conventional pollutants) and 5-26 (BAT for toxic and nonconventional pollutants). This is consistent with the

applicability language in the proposed regulation for Subpart A which reads: "The provisions of this subpart are applicable to discharges resulting from the production of pulp ***and paper*** at dissolving kraft mills." (See the proposed regulation, §430.10, Subpart A, Applicability; description of the dissolving kraft subcategory, at 58 FR 66191; emphasis added).

I trust this addresses your concern regarding the applicability of the existing effluent limitations guidelines for the dissolving kraft subcategory. If there are any further questions on this matter, please feel free to contact me at (202) 260-7189.

Sincerely,

Donald F. Anderson
Acting Chief, Chemical Engineering Branch
Engineering and Analysis Division (4303)

cc: Karrie-Joe Robinson Shell, EPA Region 4
CarolAnn Siciliano, OGC
Jan Pickrell, OWM

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

JUN 16 1989

REF: 4WM-FP

Mr. Jack C. Dozier, P.E., Chief
Water Protection Branch
Environmental Protection Division
Georgia Department of Natural Resources
Floyd Towers East - Room 1058
205 Butler Street, S.E.
Atlanta, Georgia 30334

RE: NPDES Overview

Dear Mr. Dozier:

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ITT Rayonier, Inc.	GA0003620
Brunswick Pulp and Paper Company	GA0003654
The Proctor and Gamble Cellulose Company	GA0049336

At this time, we request a copy of each fact sheet which should include supporting documentation for the calculation of the dioxin limitations.

Also, we request a copy of the Study Plan to Conduct Dioxin Monitoring in Fish Tissue from the Vicinity of Five Georgia Bleached Kraft Mills, March 31, 1989, referenced in the permit modifications.

Our review will proceed upon receipt of this information. If you have any questions, please call Yvonne Martin at 347-3012.

Sincerely yours,

John T. Marlar, Chief
Facilities Performance Branch
Water Management Division

Martin _____ Childress _____ Patrick _____

Georgia Department of Natural Resources
205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

July 26, 1989

Mr. R. A. McCrary
Manager of Environmental Affairs/Pulp Products
Southeast Operations
ITT Rayonier, Inc.
P. O. Box 207
Jesup, Georgia 31545

Re: NPDES Permit No. GA 0003620

Dear Mr. McCrary:

Please find enclosed copies of two letters we recently received from the U. S. Environmental Protection Agency, Region IV, concerning modifications to your facility's NPDES permit. We are reviewing these letters, and would appreciate receiving your comments by August 3, 1989 to aid in our response.

Sincerely,

Nolton G. Johnson, P.E.
Assistant Chief
Water Protection Branch

NGJ:lhk
Enclosure

cc: Mr. John T. Marlar

Georgia Department of Natural Resources
205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

November 20, 1987

Mr. John T. Marlar, Chief
Facilities Performance Branch
Water Management Division
U.S. Environmental Protection Agency
345 Courtland Street
Atlanta, Georgia 30365

RE: ITT Rayonier, Inc.
NPDES Permit No. GA0003620

Dear Mr. Marlar:

We are in receipt of your November 6, 1987 letter requesting more data on the discharge at ITT Rayonier and the Altamaha River. We would like to respond to each point as follows:

(1) We have not published the Water Quality Monitoring Data for Georgia Steams since 1983, when we began full utilization of STORET. D.O. and temperature data should be easily obtained in STORET. If you have problems obtaining this data in the computer, please contact us.

(2) & (3) DMR data and the stream survey data are in the files in our Industrial Wastewater Program. You are invited to come to our office and examine these files any day during normal working hours.

(4) & (5) We do not have daily stream flow records at the Doctortown USGS Gage. We do have plots of daily values as published by USGS available in our files. However, we question why you would need these in your review of our proposed permit.

ITT Rayonier's NPDES permit expires December 5, 1987 and we are looking for an expeditious review by your agency. We intend to reissue this permit prior to December 5, 1987 to avoid having a backlogged permit.

Sincerely,

Jack C. Dozier

Jack C. Dozier, P.E., Chief
Water Protection Branch

JCD/lkb