

# Allen Matkins

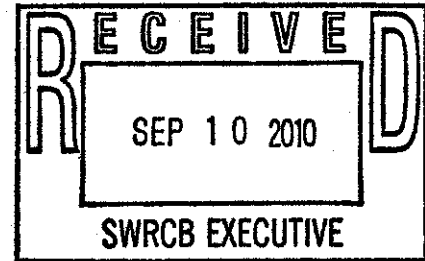
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## Via Electronic Mail

September 10, 2010

Jeanine Townsend  
Clerk to the Board  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812-0100



**Re: California Ocean Plan - Triennial Review**

Dear Ms. Townsend:

This office represents Freshwater Tissue Company LLC ("Freshwater"), owner of the kraft pulp mill ("Mill") located on the Samoa Peninsula in Humboldt County, California. The Mill is the subject of NPDES Permit No. CA0005894/WDR Order No. R1-2010-0033, issued by the North Coast Regional Water Quality Control Board. I write on behalf of Freshwater in response to the July 27, 2010 solicitation by the State Water Resources Control Board of comments on, or suggestions of issues that should be addressed in, the next amendment of the Water Quality Control Plan - Ocean Waters of California ("Ocean Plan"). Freshwater's comments pertain to the omission, in Appendix VII/Table VII-1 of the 2009 and 2005 versions of the Ocean Plan, of three exceptions to "Table A" Effluent Limitations that the State Board granted to the Mill in 1977 and 1987. To Freshwater's knowledge, these exceptions have never been revoked or revised. Freshwater urges the State Board to recognize and acknowledge the validity of these exceptions in the next iteration of the Ocean Plan.

Every Ocean Plan adopted by the State Board, beginning with the first one that was adopted in 1972, has included effluent limitations specified in a table designated "Table A." Every version of Table A has included effluent limitations for, among other things, suspended solids, settleable solids, and turbidity. Every version of the Ocean Plan adopted by the State Board, beginning with the 1972 Ocean Plan, has also included provisions authorizing the State Board to make exceptions in appropriate cases to Ocean Plan requirements, including, in particular, Table A effluent limitations.<sup>1</sup>

<sup>1</sup> The language authorizing exceptions to Ocean Plan requirements has evolved over the years. The original Ocean Plan, adopted in 1972, provided: "Effluent quality requirements may be less restrictive than those set forth in Chapter IV, Table A, of this plan provided that the Regional Board finds that the discharge shall comply with all water quality objectives set forth in Chapter II and all effluent quality requirements set forth in Chapter IV, Table B. Less restrictive

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The Mill requires substantial volumes of water in order to manufacture pulp. Since at least the 1970s, water used in the pulp-making process is drawn directly from the Mad River near its mouth, about ten miles north of the Mill. Were the River water not diverted for use at the Mill, it would flow into the Pacific Ocean. The Mad River water contains silt and other solids. The volume of solids in the raw process water drawn from the River varies, with much higher solids content during the rainy season. Some of these solids are removed in a raw water treatment plant in order to render the water suitable for use as process water in the Mill. The solids have historically been discharged, together with the Mill's process wastewater and other flows, through an outfall located in the open Ocean west of the Mill. Until the mid-1990s, the outfall was positioned approximately one-half mile offshore. In the 1990s, the outfall was extended to a point approximately 1 ½ miles offshore.

In 1977, at the request of Louisiana-Pacific Corporation ("LP"), then the owner of the Mill, and of Crown-Simpson Pulp Company ("Simpson"), then owner of a neighboring kraft pulp mill that obtained and treated its process water and discharged its raw water treatment plant solids in the same fashion as the Mill, the State Board granted exemptions from the settleable solids, suspended solids, and turbidity limitations set forth in Table A of the then applicable Ocean Plan. According to the State Board's opinion in Order 77-6 (March 17, 1977):

The dischargers . . . have requested that a variance from Ocean Plan Table A limitations for suspended solids be granted (a relaxation of limitations down to the level required by the Guidelines), and that the limitations on suspended solids and turbidity be applied only to waste generated in the pulp mills. Each company buys untreated Mad River water from the Humboldt Bay Municipal Water District and operates a water treatment plant to clarify, filter, and soften the water. The dischargers contend that wastes generated in the water treatment facilities consist almost entirely of material that would have been deposited in the ocean by the Mad River had the water not been diverted.

We agree that, in this instance, it is proper to apply the suspended solids on a net basis. There is ample evidence in a [sic] record to

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effluent quality requirements shall be effective only upon approval by the State Board. (Chapter VI.D, p. 8.) The exception provision was modified in the 1978 Ocean Plan (Chapter VI.G, pp. 8-9), in the 1983 Ocean Plan (Chapter VI.F, p. 11), and again in the 1988 Ocean Plan (Chapter VI.F, p. 13). The exceptions provisions in the 1990, 1997, and 2001 versions of the Ocean Plan were identical to the exception provision in the 1988 version. The 2005 version retained the language of the preceding versions but added a provision for review of exceptions at the time of Triennial Reviews, and for reopening, revoking or re-issuing of exceptions following a public hearing. The 2009 version retains the language of the 2005 version. Each version since 1978 has required the concurrence of the U.S. Environmental Protection Agency ("EPA") in exceptions granted by the State Board, and each version since 1978 has included, as grounds for the issuance of an exception, conditions that "the exception will not compromise protection of ocean waters for beneficial uses," and that "the public interest will be served."

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support granting the variance requested from Ocean Plan, Table A, and to support application of effluent limitations for suspended solids contained in the [federal Effluent Limitation] Guidelines [for wastewater discharge] on a net basis.

Since it is extremely difficult to measure turbidity on a net basis and since the waste Streams from the manufacturing processes typically have low turbidity, it is appropriate that no turbidity limitations be imposed.

The dischargers have presented ample evidence that settleable solids and floating particulates need not be specifically controlled in this instance because all applicable water quality objectives can be met without imposing such controls. . .

On this basis the State Board adopted revised Waste Discharge Requirements ("WDRs") for the two mills. The revised WDRs contained the following language with respect to the Mill:

7. Regarding the exemptions from Ocean Plan effluent limitations requested by the discharger:

\* \* \*

b. Suspended solids. Discharge of suspended solids at the rates specified herein will not interfere with compliance with the water quality objectives set forth in Chapter II of the Ocean Plan and will not interfere with compliance with the effluent quality requirements set forth in Chapter IV, Table B of the Ocean Plan. Since the suspended solids from the water treatment plant consist of silt from the Mad River that would normally be discharged to the ocean, it is appropriate that the limitations on suspended solids be on a net basis [i.e., net of the water treatment plant solids discharge, and hence consisting solely of solids from other flows, including process wastewater]. Thus, the monitoring requirements will be established so as to give credit for suspended solids resulting from water treatment plant operators.

c. Settleable solids. The absence of any limitations on settleable solids will not interfere with compliance with the water quality objectives set forth in Chapter II of the Ocean Plan and will not interfere with compliance with the effluent quality requirements set forth in Chapter IV, Table B of the Ocean Plan.

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d. Turbidity. The absence of any limitations on turbidity will not interfere with compliance with the water quality objectives set forth in Chapter II of the Ocean Plan and will not interfere with compliance with the effluent quality requirements set forth in Chapter IV, Table B of the Ocean Plan in that the turbidity from the water treatment plant consists of silt and clay from the Mad River that would normally be discharged to the ocean.

Copies of Order 77-6, found at 1977 Cal. ENV LEXIS 22 and 23, are enclosed. There is no provision in the Ocean Plan for expiration of exceptions that the State Board has granted, and the exceptions did not have expiration dates written into them by the State Board. To Freshwater's knowledge, the State Board has never revoked these three Ocean Plan exceptions as granted in Order 77-6.<sup>2</sup> Although Freshwater has not obtained documents reflecting EPA's review of and concurrence in these exceptions, it is beyond doubt that EPA reviewed Order 77-6 very carefully, inasmuch as EPA vetoed this order insofar as the Order granted variances from the federal Effluent Limitations Guidelines for discharge in the Mill's process wastewater of biochemical oxygen demand ("BOD") and pH, and this veto led to a major dispute with EPA and in the federal courts. 42 Fed. Reg. 28167-72 (June 2, 1977) (EPA General Counsel Recommendation); *In re Louisiana Pacific Corporation*, 10 E.R.C. 1841 (1977) (Administrator's Decision); *Crown Simpson Pulp Co., et al., v. Costle*, 599 F.2d 897 (9<sup>th</sup> Cir. 1979), rev'd, 445 U.S. 193 (1979); *Crown Simpson Pulp Co., et al., v. Costle*, 642 F.2d 343 (9<sup>th</sup> Cir. 1981).<sup>3</sup> Throughout all this litigation there is no mention of

<sup>2</sup> On May 25, 2010, this office submitted a Public Records Act request to the State Board for:

All documents pertaining to exceptions to "Table A" effluent limitations or "Table B" water quality objectives set forth in the Water Quality Control Plan - Ocean Waters of California ("California Ocean Plan"), that were requested, proposed, granted or denied at any time since 1972, with respect to discharges of wastewater of any kind (including water treatment plant discharges) from the former Louisiana-Pacific Corporation kraft pulp mill on the Samoa peninsula, Humboldt County, California (NPDES #CA0005894) ("Former LP Mill"), or from the former Simpson Paper Company pulp mill, also on the Samoa peninsula, Humboldt County, California (NPDES #CA0005282). The Former LP Mill is currently owned by Freshwater Tissue Company LLC, and its current address is One TCF Drive, Samoa, CA 95564. The former Simpson Paper Company mill has been dismantled. This request calls for all records regarding all exceptions that were requested, proposed, granted or denied with respect to any Table A effluent limitations and any Table B water quality objectives, for either of the two identified mills, contained in any version of the California Ocean Plan from 1972 to the present.

The documents furnished by the State Board in response to this request included no documents suggesting that the State Board had revoked the Ocean Plan exceptions set forth in Order 77-6, except to the extent that the exception to the suspended solids limitation set forth in Table A of the Ocean Plan was issued again in State Board Resolution No. 87-103.

<sup>3</sup> At about the same time that it issued its Public Records Act request to the State Board, this office issued a federal Freedom of Information Act (FOIA) request to EPA, seeking the same category of documents. The response from EPA did not include documents relating to Order 77-6.

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an EPA disapproval of the three Ocean Plan exceptions at issue here. On this basis alone it must be assumed that EPA concurred with these exceptions.

On November 17, 1987, the State Board adopted Resolution No. 87-103, which re-issued to both mills a second exception for the suspended solids limitation in Table A. A copy of this Resolution is enclosed. Resolution No. 87-103 included the following determinations:

... 7. The dischargers have submitted material, including a laboratory study, which indicates that the discharge of suspended solids does not adversely affect beneficial uses of ocean waters, including marine habitat

8. Compliance with the suspended solids limitation would be expensive and would cause significant disposal problems. . .

The Staff Report supporting Resolution 87-103, a copy of which is enclosed, recited essentially the same grounds for granting the exception to the suspended solids limitation that the State Board had cited in 1977 for the suspended solids, settleable solids and turbidity limitations:

Water used in the pulp-making process is drawn directly from the Mad River near its mouth, about ten miles north of the mills. The solids that enter the mills' water systems are mud and suspended materials from the river water. These solids are removed in a water treatment plant, mixed with other effluent components, and discharged to the ocean. The amount of solids discharged from each mill varies with silt levels in the river. It can reach 400 tons per day during major storms, and about 50 tons per day as an average. Essentially all of the suspended solids diverted to the mills from the Mad River are discharged into the ocean.

The usual rationale for regulation of suspended solids emission does not seem to apply to the pulp mills, since the influent solids are a fraction of the same river mud and detritus that reach the ocean by natural means. While there are not chemical analyses available for this material, there is no reason to believe it is toxic.

The Staff Report goes on to explain that, after the raw water treatment processes, "Mad River mud solids move through the pulp mills essentially unchanged. Hence there is no reason to believe that the discharge of suspended solids from the mills has any biological effect other than those arising from its diversion ten miles downcoast from the natural discharge point. The diversion seems inconsequential since silt loads from the Mad River move alongshore with currents and are a normal feature of the ocean environment offshore of the mills." Finally, the Staff Report discussed alternative methods of solids disposal but did not favor them.

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After issuance of Resolution 87-103, waste discharge permits for the Mill – issued to LP and to successor owners of the Mill as dischargers - have included suspended solids limitations applicable solely to the raw water treatment plant solids discharge that take into account the seasonal variations in solids discharge and that reflect the State Board's exception from Table A limitations that would otherwise apply to this discharge.

It is not clear, from the record Freshwater has been able to obtain, why the owners of the mills sought a renewed exception from the Table A suspended solids limitation for the raw water treatment plant discharge in the 1980s. As noted, there is no evidence that Order 77-6 had been revoked. (Indeed, we have found no evidence that it was ever revoked.) Nor is it clear from the available record why, having made the decision to seek a renewed exception for the suspended solids effluent limitation, the mill owners did not seek exceptions from the Table A settleable solids and turbidity limitations as well. As suggested by in Order 77-6, the core justification for the exceptions to each of the limitations in this suite of three solids-related waste constituents is the same – the solids all come from the Mad River and would be discharged to the ocean anyway if they were not diverted to the Mill as part of the raw process water supply.

In any event, until the issuance by the Regional Water Board of waste discharge requirements in July 2010 through Order R1-2010-0033, the NPDES permits for the Mill have not included settleable solids or turbidity limits applicable to Mill discharges that include solids from the raw water treatment plant. The absence of such limits in these prior permits that apply Ocean Plan requirements in other ways reflects a tacit but conscious acknowledgement of the continuing applicability and validity of Order 77-6. It is Freshwater's understanding that, in this year's permitting process, the Regional Water Board declined in Order R1-2010-0033, to recognize these other two exceptions after consultation with State Board staff.

Unfortunately, with the imposition of the Ocean Plan Table A limitations on settleable solids and turbidity with respect to the raw water solids discharge, the beneficial effect of the continued recognition in the July 2010 wastewater discharge requirements for the Mill of the exception for suspended solids is rendered academic. Based on information available to Freshwater, very expensive, environmentally disadvantageous solids handling measures, similar to those that would have been required to comply with the Table A limitations for suspended solids, will be needed in order to comply with the newly-imposed Table A limitations for settleable solids and turbidity. These are measures that the State Board staff rejected in its analysis of alternative solids disposal methods in its 1987 Staff Report that supported Resolution 87-103, and that led the State Board to declare in that Resolution, to be "expensive," and to find to "cause significant disposal problems." The solids that are measured through the settleable solids and turbidity limitations now imposed in the current permit are the same solids that, upon discharge, would, in the language of Resolution 87-013, "not adversely affect beneficial uses of ocean waters, including marine habitat."

Freshwater acknowledges that, since 2005, the Ocean Plan has specified that existing exceptions to Ocean Plan requirements will be revisited in Triennial Reviews. Freshwater will be

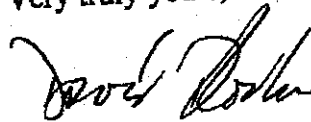
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prepared at the appropriate time during the next Triennial Review to demonstrate why the Ocean Plan exceptions granted in 1977 and 1987 should be renewed or reissued. But, in the meantime, the State Board should acknowledge that those exceptions remain in effect. Specifically, it should identify them in the next iteration of the Ocean Plan, in the same manner that it acknowledged the existence of other exceptions – some also dating back to the 1970s - in Appendix VII of the 2005 and 2009 versions of the Plan. It is one thing to review existing exceptions and conduct a hearing to determine whether they should be reopened, revoked or reissued. It is another to refuse to acknowledge their continuing existence at all. Freshwater does not know why these exceptions were excluded from the Appendix VII of the 2005 and 2009 Ocean Plans, and is unaware of any legal justification for their omission. With respect to the 1977 exceptions, at least, it is reasonable to assume that the exceptions were omitted because documentation of them was not found in the State Board's files when the lists were compiled. Whatever the reason for their exclusion, they should be restored to the list now that they have been identified.

Thank you for considering these comments. Please do not hesitate to contact me if you have any questions.

Very truly yours,



David D. Cooke

DDC  
Enclosures

cc: Bob Simpson  
Jim Lund  
Anton Jaegel  
Catherine Kuhlman  
John Short  
Charles Reed

# ENCLOSURES





## LEXSEE 1977 CAL. ENV LEXIS 22

In the Matter of the Review of Crown Simpson Pulp Co. and Louisiana-Pacific Corporation Orders Nos. 76-133 (NPDES No. CA0005282) and 76-134 (NPDES No. CA0005894) of the California Regional Water Quality Control Board, North Coast Region

Order No. WQ 77-6

State of California  
State Water Resources Control Board

1977 Cal. ENV LEXIS 22

March 17, 1977

**CORE TERMS:** discharger, variance, guideline, effluent, plant, energy, regulation, pulp, water quality, waste discharge, tons, solids, environmental, technology, suspended, chemical, issuance, Federal Water Pollution Control Act, fundamental difference, promulgated, flexibility, reduction, turbidity, sludge, ocean, non-water, pollutant, modification, engineering, uniformity

**BEFORE:** [\*1] W. Don Maughan, Vice Chairman, John E. Bryson, Chairman, W. W. Adams, Member, Roy E. Dodson, Member, Jean Auer, Member

**OPINIONBY:** MAUGHAN**OPINION:**

On August 26, 1976, the California Regional Water Quality Control Board, North Coast Region (Regional Board) adopted waste discharge requirements (Orders Nos. 76-133, NPDES No. CA0005282 and 76-134, NPDES No. CA0005894) for Crown Simpson Pulp Co. (Crown Simpson) and Louisiana-Pacific Corporation (Louisiana-Pacific) (hereinafter sometimes collectively referred to as "dischargers"), respectively. On September 3, 1976, the United States Environmental Protection Agency (EPA) issued a letter of objection to the Regional Board orders prescribing waste discharge requirements for the dischargers. On October 7, and October 27, 1976, Crown Simpson and Louisiana-Pacific, respectively, filed petitions in the Ninth Circuit Court of Appeal requesting the Court to overturn the action of the Administrator of EPA, Region IX, in objecting to the granting of a variance by the Regional Board. On October 21, 1976, the State Water Resources Control Board (State Board) adopted Resolution No. 76-108 to review the action of the Regional Board. On December 22, 1976, the State Board [\*2] held a hearing regarding the establishment of appropriate waste discharge requirements for the dischargers.

**I. BACKGROUND**

The dischargers each operate bleached kraft pulp mills located on the Samoa Peninsula, on the west side of Humboldt Bay. Louisiana-Pacific also operates a saw and plywood mill at this location. Louisiana-Pacific was formed in September 1972 from a portion of Georgia-Pacific Corporation.

Each pulp mill produces about 600 air dry tons per day of bleached kraft pulp. The Louisiana-Pacific saw mill produces about 500,000 board feet per day of lumber. Each mill primarily discharges through a separate ocean outfall about 2,500 feet long with the diffuser located at a depth of 30-40 feet. The outfalls are about one mile apart.

The dischargers are presently discharging under waste discharge requirements issued by the Regional Board on September 4, 1968. Monitoring and reporting is being done under the requirements of Monitoring and Reporting Pro-

grams Nos. 74-211 (Crown Simpson) and 74-212 (Louisiana-Pacific) which were issued December 31, 1974, effective February 1, 1976.

On December 4, 1974, the Regional Board adopted waste discharge requirements for the dischargers. [\*3] At that time formally promulgated EPA effluent limitations guidelines were not available. EPA objected to the Regional Board orders on the basis that the Regional Board failed to implement fully the provisions of Section 301 of the Federal Water Pollution Control Act n1 by not imposing effluent limitations which would require achievement of "best practicable control technology currently available" (BPCTCA) by July 1, 1977.

n1 33 U.S.C. 1251 et. seq.

Subsequently, the State Board reviewed the Regional Board orders both on its own motion and in response to petitions filed by each of the dischargers. The State Board, after receiving evidence at a hearing on March 7, 1975, remanded the orders to the Regional Board with the direction that effluent limitations based on BPCTCA be included. If formally promulgated guidelines were available, they were to be applied. Otherwise, the Regional Board, after considering all relevant evidence, was to establish limitations based on its best judgment of what constituted BPCTCA. [\*4]

On February 19, 1976, EPA promulgated Effluent Limitations Guidelines and Standards, Pulp, Paper, and Paperboard Point Source Category (Guidelines) n2. The Guidelines contain a variance provision for each subcategory of this Point Source Category. The variance provision is set forth, in pertinent part, at page 5 of this Order. On July 6, 1976, various corrections to the Guidelines (mostly of typographical errors) were promulgated. On January 6, 1977, EPA further modified the Guidelines. The effect of this latest modification on these dischargers is limited to a slight relaxation of the limitations on BOD[5] and total suspended solids.

n2 Title 40, Code of Federal Regulations, Part 430.

After hearing extensive testimony at its June 24, 1976, July 29, 1976, and August 26, 1976, meetings, the Regional Board adopted Order No. 76-133 (NPDES CA0005282) for Crown Simpson and Order No. 76-134 (NPDES CA0005894) for Louisiana-Pacific on August 26, 1976.

On September 3, 1976, EPA issued a letter of objection to the Regional [\*5] Board orders. Grounds cited by EPA were inclusion of effluent limitations less stringent than the Guidelines without prior approval by the Administrator. It appears that EPA's objection on procedural issues could have been precluded had the Regional Board orders included Guideline limitations and provisions that the alternate limits for BOD and pH would become effective only upon approval by the Administrator.

## II. ISSUES AND FINDINGS

The dischargers requested (and the Regional Board granted) a variance from the EPA Guidelines for BOD and pH based both on a claim of "fundamental difference" in accordance with the variance provisions of the Guidelines and on precedent established in the decisions of several U.S. Courts of Appeals; particularly the Fourth Circuit's decision in the case of Appalachian Power Company v. Train n3 (hereinafter, Appalachian). The dischargers have also requested several variances from Ocean Plan requirements. n4 Finally, they have raised a procedural objection to the State Board's resolution of the question as to whether a variance from EPA Guideline limitations is appropriate at this time. The dischargers contend that the State Board should not take [\*6] action on this question pending resolution in the Federal courts of certain lawsuits involving the validity of EPA's Guidelines and variance provisions. Each of the dischargers' contentions will be discussed separately below.

n3 545 F. 2d 1351.

n4 Water Quality Control Plan for Ocean Waters of California adopted by the State Board on July 6, 1972.

1. Contention that the Dischargers' Facilities are Fundamentally Different in that they Discharge to Ocean Waters.

The dischargers argue that the fact that they discharge to the ocean with its vast diluting and buffering capacity is sufficient for a finding of "fundamental difference" under the variance provision of EPA's Guidelines. They base this on the following portion of the currently applicable variance provision:

"An individual discharger . . . may submit evidence . . . that . . . factors relating to the equipment or facilities involved, the processes applied, or other such factors related to such discharger are fundamentally different from the factors [\*7] considered in the establishment of the guidelines." (Emphasis Added)

Since none of the bleached kraft pulp mills considered by EPA in the process of Guideline development discharge to the ocean, the dischargers contend that this fact alone is sufficient to establish fundamental difference.

The State Board disagrees with the contention of petitioners that a variance from the Guidelines based upon a finding of fundamental difference should be granted because of the type of receiving water. This position is supported by the following quotations from the Legislative History of the Federal Water Pollution Control Act:

"The balancing test between total cost and effluent reduction benefits is intended to limit the application of technology only where the additional degree of effluent reduction benefits is wholly out of proportion to the costs of achieving such marginal level of reduction for any class or category of sources.

"The Conferees agreed upon this limited cost-benefit analysis in order to maintain uniformity within a class and category of point sources subject to effluent limitations, and to avoid imposing on the Administrator any requirement to consider the location of [\*8] sources within a category or to ascertain water quality impact of effluent controls, or to determine the economic impact of controls on any individual plant in a single community." n5

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" . . . the intent of the Conferees is that effluent limitations applicable to individual point sources within a given category or class be as uniform as possible. The Administrator is expected to be precise in his guidelines . . . so as to assure that similar point sources with similar characteristics, regardless of their location or the nature of the water into which the discharge is made, will meet similar effluent limitations." n6

n5 Exhibit 1 to the remarks of Senator Muskie, Senate Consideration of the Report of the Conference Committee, as set forth in A Legislative History of the Water Pollution Control Act Amendments of 1972, Congressional Research Service, Library of Congress, Vol. 1, January 1973, at 170.

n6 Conference Report, House-Senate Conference Committee, discussion of Section 304 of the conference substitute, as set forth in A Legislative History of the Water Pollution Control Act Amendments of 1972, op. cit., note 5, at page 309.

[\*9]

The argument advanced by the dischargers (variance based on type of the receiving water) is, in our opinion, the essence of what Congress intended to avoid with the Federal Water Pollution Control Act Amendments of 1972. The legislative history of the Amendments reflects a conclusion that regulation of pollution based on a comparison of cost with receiving water benefits on a plant by plant basis was unworkable from a practical regulatory standpoint. Congress based the Amendments on pre-defined minimum levels of treatment technology which were to be applied regardless of the type of receiving water.

2. Contention that Biochemical Oxygen Demand (BOD) and pH do not constitute pollutants in this specific case and that the present discharges have no adverse environmental effects.

The dischargers presented extensive evidence both before the Regional Board and before the State Board that there are no adverse environmental effects associated with their present discharges. Dr. Joseph, Regional Board Executive Officer, agreed that he knew of no evidence that indicates that, in the case of these two discharges, BOD is a problem.

The State Board publication Water Quality Criteria n7 [\*10] states:

"In itself, BOD is not a pollutant and exercises no direct harm. Only by depressing the dissolved-oxygen content to levels that are inimical to fish life and other beneficial uses does BOD exert an indirect effect. Where reaeration, dilution, and/or photosynthetic action offset or minimize this depletion, BOD does not interfere with the reasonable uses of the water."

n7 McKee and Wolf, *Water Quality Criteria*, Second Edition, State Water Resources Control Board, Pub. No. 3A, Reprint June 1, 1976, at page 147.

Thus, while some of the organic compounds which contribute to the BOD may cause problems in the receiving water, the State Board does not dispute the dischargers' contention that BOD, in and of itself, is not a pollutant when properly discharged into a marine environment. Further, the record contains no evidence to contradict this conclusion, and there is evidence that the dissolved oxygen content of the seawater is not depressed to any noticeable degree outside the initial dilution zone.

The dischargers [\*11] have also submitted substantial evidence that the discharge of waste outside the 5-9 pH range permitted by the EPA Guidelines has no effect on a marine environment.

The EPA Development Document n8 cites no adverse effects of pH that would be of concern in the marine environment.

n8 Development Document for Advanced Notice of Proposed or Promulgated Rule Making for Effluent Limitations Guidelines and New Source Performance Standards for the Bleached Kraft, Groundwood, Sulfite, Soda, Deink, and Non-integrated Paper Mills Segment of the Pulp, Paper, and Paperboard Mills, August 1975.

Concerning pH, *Water Quality Criteria* n9 also states:

"Conversely, the concentration of weakly dissociated acids and bases markedly affects the pH value and the ease with which it can be altered. For this reason, pH should not be confused with acidity and alkalinity. The presence of carbonates, phosphates, borates, and similar ions give water a buffering power so that the addition of an acid or base is less likely to be deleterious." [\*12]

n9 *Op. Cit.*, footnote 7, at page 235.

It cannot be said that the discharge from these two plants is exceptionally low in either acidity or alkalinity, but the buffering capacity of seawater is so strong that there is no reason to doubt the testimony of the dischargers' experts that the receiving water pH is not changed more than 0.2 units outside the initial dilution zone. Thus, with pH, also, there is no evidence in the record to dispute the dischargers' allegation that the high or low pH of their discharges causes no problem when diffused into seawater.

In summary, it has been clearly shown, in this particular case, that neither the discharge of BOD nor pH results in a discernible impact or a threat of damage to the marine environment. EPA in its Development Document cites the reasons why it has selected BOD and pH as pollutants to be controlled in the discharge from pulp mills. The discussion of BOD effects in the Development Document indicates that BOD must be controlled because it depresses dissolved oxygen [\*13] levels resulting in damage to fish populations (such as delayed hatching of eggs and decreased tolerance to certain toxicants) and damage to fish food organisms. The Development Document points out that death may result if dissolved oxygen is reduced severely by high levels of BOD. n10 The discussion of pH effects in the Development Document indicates that low pH water supplies may corrode household plumbing and, thus, add heavy metals to drinking water supplies. Extremes of pH or rapid changes in pH may stress or kill aquatic life and toxicity of many materials is increased by changes in pH. n11 As the above discussion indicates, the reasons cited by EPA for the Guideline BOD and pH requirements are not valid in this case. The dischargers have submitted adequate evidence to refute the presumptions made by EPA regarding the polluting nature of BOD and pH.

n10 Development Document, *op. cit.*, note 8, at 188.

n11 Id., at 192.

Therefore, based on the record before us, we must conclude that there do not appear [\*14] to be any environmental benefits which will be derived by requiring these dischargers to meet either the Ocean Plan or Guideline limitations for BOD or pH.

3. Contention that Judicial Precedent Dictates that a Broad Range of Factors including Non-water Quality Environmental Effects and Energy Requirements be Considered in Deciding whether Guideline Numbers should be applied to a Particular Discharger

The dischargers assert that the Regional Board and State Board should be guided in resolving the question of "fundamental difference" by the logic contained in the decision in the Appalachian case.

The variance provision under consideration in Appalachian was identical to the provision which has been promulgated by EPA for the sources under consideration here. The operative language from the variance provision is set forth at page 5 above. The court found in Appalachian that the provision did not allow for adequate flexibility in application of nationwide guidelines to particular point sources and remanded the variance provision to EPA for modifications which would allow for reconsideration at the permit issuance stage of all factors required by P.L. 92-500 to be considered at the [\*15] time guidelines are originally developed. Specifically, the court stated:

"As we noted in *duPont*, 541 F.2d 1018, Nos. 74-1261, et al, provisions for variances are appropriate to the regulatory process. This particularly so in the case of regulations having presumptive applicability throughout the nation. The factors to be taken into consideration, however, ought ordinarily to be at least as broad as the factors relied upon in establishing the limitation if the provision is to have meaning. In the instant case, EPA has said that a variance from the 1977 standards will be granted only where 'the factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from those factors considered in establishing the guidelines'. Thus, only technical and engineering factors, exclusive of cost, may be considered in granting or denying a variance. Based upon the Act taken as a whole, we are of the opinion that such a variance clause is unduly restrictive and, accordingly, 40 CFR 423.12(a), must be set aside and remanded for further consideration."

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"... [w]e note that both § 304 (1977) [\*16] and § 306 (new sources) provide that the factors to be taken into consideration in determining the 1977 and new source standards include not only the engineering aspects of the various types of control technology, but also (1) the total cost of application of such technology (cost of achieving such effluent reduction and (2) the resulting non-water quality environmental impact (including energy requirements). The EPA has offered no reasoned explanation for limiting the variance clause to considerations of technical and engineering factors only. Certainly the adverse non-water quality environmental impact which may result from the strict application of the agency's effluent limitations to a particular plant is as significant as the technological difficulties which may be encountered. The same may be said for a consideration of energy requirements." n12 (Emphasis Supplied.)

n12 Op. cit., note 3 at 1358-1359.

The court in Appalachian described, as follows, how the uniformity in effluent requirements which Congress [\*17] anticipated from permit within a point source category could be maintained while, nevertheless, providing for a reasonable amount of flexibility in the permit program:

"... we believe that the solution which most nearly satisfies congressional intent is recognition that the regulations are presumptively applicable to permit applications." (citation omitted) Thus, the issuer of a permit under § 402 may consider whether a particular applicant is to be held strictly to the confines of the agency's regulations. The burden of proof remains upon the applicant, however. Only after he has established the inappropriateness of the regulations as applied to him, for example, employing the generic factors of §§ 304, 306 or any specific variance clauses promulgated thereunder, need the permit issuer go beyond the regulations. Of course, the permit issuer does not have unreviewable dis-

cretion in determining whether limitations prescribed under a particular regulation should be deemed inapplicable to any individual point source. Under § 402(d)(2), EPA may prevent the issuance of any permit to which it objects. Thus, through the exercise of this veto power, the agency may insure [\*18] that the permit grantors give proper recognition to the need for uniformity in the application of the Act while at the same time recognizing variables which may exist from location to location and plant to plant." n13 (Emphasis supplied.)

n13 Id. at 1358.

Other courts have echoed the opinion of the Appalachian court with regard to the need for flexibility in a regulatory program involving standards which are applied nationwide. For example, the Second Circuit in *Natural Resources Defense Council v. EPA* stated:

"Not all of the thousands of plants in operation can be expected to fit into prefabricated molds or templates. By specifying a permit procedure, Congress implicitly conferred on the permit-grantor the privilege of construing the broader regulations in light of the specific type of plant applying for the permit. Without variance flexibility, the program might well founder on the rocks of illegality." n14

n14 537 F.2d 642 at 647. See also: *E.I. DuPont de Nemours and Co. v. Train*, 541 F.2d 1018 at 1028 (Fourth Circuit) and *American Paper Institute v. Train*, 9 ERC 1065 at 1070. (District of Columbia Circuit.)

[\*19]

Section 304 (b)(1)(B) of the Federal Water Pollution Control Act sets out the factors which are to be considered by the Administrator of EPA in specifying effluent guidelines for BPCCTCA for non-publicly owned treatment works. According to the Appalachian court, as quoted above, all of those same factors must be considered again at the time of permit issuance where a discharger challenges the application of guideline limitations to his facilities. The factors listed in Section 304(b)(1)(B) are as follows:

"... the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application, ... the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, non-water quality environmental impact (including energy requirements), and such factors as the Administrator deems appropriate." n15 (Emphasis supplied).

n15 33 U.S.C. 1314(b)(1)(B).

There have been no [\*20] decisions in the Ninth Circuit which would indicate the proper application of variance regulations as a part of the NPDES permit program and we, of course, are not bound, in a strict legal sense, by the Fourth Circuit's decision in *Appalachian*. However, the *Appalachian* decision does leave a cloud on the continued viability of all variance provisions containing the same language as the provision considered in *Appalachian*. Further, we find the reasoning in the *Appalachian* decision compelling. Therefore, in the following discussion we evaluate the dischargers' arguments with regard to their entitlement to a variance based upon the costs, the non-water quality environmental impacts and the energy requirements of compliance with Guideline limitations.

4. Contention that the Costs are Disproportionate to the Water Quality Benefits and thus justify the Issuance of a Variance.

The dischargers introduced evidence that it would cost approximately \$ 18 1/4 million for each facility for construction of the necessary treatment facilities to meet all Guideline and Ocean Plan limitations with the exception of the Ocean Plan chromium requirements. Operation and maintenance costs are expected to [\*21] be \$ 1 1/4 million per year for each plant. Therefore, the total capital expenditure would be \$ 36.5 million with an annual operation cost of \$ 2.5 million. These costs are in addition to the costs which have already been incurred by the dischargers in constructing their existing ocean outfalls and diffusers. These costs were approximately \$ 2 million each and represent cost which are not required by the Guidelines and would generally not be imposed upon similar discharges to a freshwater stream. The expected costs are substantial in that the original mills together cost approximately \$ 110 million.

The dischargers contend that a variance should be granted because if the Guideline limitations are imposed they will sustain the above costs with no discernible water quality benefit. However, it should be noted that with regard to economic costs the Appalachian case found that a narrow consideration was required at the permitting stage.

In Appalachian the court specifically found that it was not necessary for EPA to provide for an analysis of economic costs versus water quality benefits on a plant-by-plant basis at the permit issuing stage, but that provision should be made for consideration [\*22] of cost differentials between the guideline plants and the particular plant for which a permit is sought. Specifically, the court stated:

"In requiring that EPA give weight to the relevant statutory factors in developing a subsequent variance provision, we in no way intend to imply that EPA's regulations must provide for a detailed cost-benefit analysis at the permit granting stage. As we indicated in *du Pont*, 541 F.2d 1018, Nos. 75-1261, et al., an overall cost-benefit analysis for each category or subcategory satisfies the mandate of § S304 in this regard. The variance provision should, however, allow the permit issuer to consider significant cost differentials of the particular point source involved." n16

n16 Appalachian, op cit, note 3, at footnote 23, page 1360.

In this case, the dischargers have offered no evidence that the costs which they would sustain to meet the Guidelines are substantially different from the costs EPA found would be sustained on an industry-wide basis, and we find that with regard [\*23] to economic costs, the dischargers have not sustained the burden of proof required in order to overcome the presumptive applicability of the Guideline limitations.

5. Contention that the Adverse Non-water Quality Environmental Effects and Energy Requirements justify the Issuance of a Variance.

In support of their position, the dischargers submitted evidence regarding the chemicals required, the direct and indirect power requirements, and potential sludge disposal problems. In summary the evidence is:

1. Chemical requirements: The chemical requirements for each facility are estimated to be approximately 4,320 tons per year of caustic soda, 546 tons per year of anhydrous ammonia, and 335 tons per year of phosphoric acid. Therefore, the total chemical requirements for both plants would be 8,640 tons per year of caustic soda, 1,092 tons per year of anhydrous ammonia, and 670 tons per year of phosphoric acid.
2. Energy requirements: For each facility the energy requirements would be 42,121,000 KWH/yr for construction (direct and indirect amortized over a 15 year period), 24,183,000 KWH/yr for operation of the facility for BOD removal, and 7,812,000 KWH/yr for the production of [\*24] the necessary chemicals. Therefore, the total energy requirements for both plants would be 148,232,000 KWH/yr.
3. The process of BOD removal would result in 4,200 tons per year of biological sludge from each plant which, because of the unique situation of the dischargers' location on a sand spit in a heavy rainfall area, represent a very difficult problem regarding satisfactory means of disposal.

With regard to the consumption of energy, at the present time the generating capacity of the north coastal area only marginally exceeds the demand during the peak, mid-winter demand period. Additional demand will aggravate this energy problem. To supply the total annual demand, both direct and indirect, associated with the removal of BOD and pH adjustment at both plants would require the burning of 200,000 barrels of low sulphur fuel oil. The dischargers allege that burning of this amount of oil would result in two million pounds of air pollutants. This amount of power would supply approximately 21,000 homes.

With regard to the sludge disposal problem, it is not probable that a suitable disposal site can be located near the pulp mills because of the sandy nature of the Samoa Peninsula. [\*25] If truck hauling is required, additional energy would be required. The alternative of incineration of sludge would also require energy and may result in air pollution.

On the other hand, as previously discussed, the dischargers have shown there is no expected environmental benefit to be gained by installation of the treatment facilities necessary to comply with the BOD and pH limitations.

In appraising the evidence related to non water quality environmental effects and energy requirements the Board must at least in part appraise the significance in terms of the potential environmental benefits to be gained as a result of the imposition of the EPA Guidelines. In this case we have unrefuted evidence presented by the dischargers and con-

currred with by the Regional Board Executive Officer that the existing discharges result in no water quality problems. Secondly, there is no expected or predictable water quality improvement to be achieved as the result of imposition of the EPA Guidelines. In light of these facts (the magnitude of the chemical and energy requirements, and the potential air and land management problems associated with sludge disposal) we can only conclude the evidence [\*26] justifies the variance requested. n17

n17 The alternative BOD and pH limitations contained in the permits attached to and adopted by this order are identical to the limitations for those constituents contained in the Regional Board orders. Those limitations are as follows:

Constituent	Louisiana Pacific	30-day Average	Daily Maximum
BOD[5] (pulp)	Units		
pH	lbs/day	48,800	97,600
	within the limits 3.0 and 10.0		
Constituent	Crown Simpson	30-day Average	Daily Maximum
BOD[5] (pulp)	Units	48,000	96,000
pH	lbs/day		
	within the limits 3.0 and 10.0		

If the Guideline limitations were applied to the dischargers

their BOD and pH requirements would be as follows:

Constituents	Louisiana Pacific	30-day Average	Daily Maximum
BOD[5] (pulp)	Units	9,821	18,849
pH	lbs/day		
	within the limits 5.0 and 9.0		
Constituents	Crown Simpson	30-day Average	Daily Maximum
BOD[5] (pulp)	Units	9,660	18,540
pH	lbs/day		
	within the limits 5.0 and 9.0		

In granting the requested [\*27] variance, we are mindful of the intent of Congress in adopting the Federal Water Pollution Control Act that the regulation of discharges to the waters of the United States from similar dischargers be as uniform as possible. We feel that the concept of "presumptive applicability" of guidelines as enunciated by the Fourth Circuit in Appalachian provides for maintenance of this uniformity. Further, we feel that a flexible variance procedure such as that required by the Fourth Circuit will strengthen, rather than weaken, the regulatory process. As was stated by the District of Columbia circuit in Portland Cement Association v. Ruckleshaus, n18 "... a regulatory system which allows flexibility, and a lessening of firm proscriptions in a proper case, can lend strength to a system as a whole. The limited safety valve permits a more rigorous adherence to an effective regulation...."

n18 486 F.2d 375 at 399, cert. denied 417 U.S. 921, followed in Natural Resources Defense Council v. EPA, 537 F.2d 642 at 647.

[\*28]

6. Contention that Dischargers should be Granted Variances from the Ocean Plan.

The dischargers have accepted the Guideline limitations for the suspended solids discharged by their pulp mills (turbidity is not a guideline parameter). They have requested that a variance from Ocean Plan n19 Table A limitations for suspended solids be granted (relaxation of limitations down to the level required by the Guidelines), and that the limitations on suspended solids and turbidity be applied only to waste generated in the pulp mills. Each company buys untreated Mad River water from the Humboldt Bay Municipal Water District and operates a water treatment plant to



clarify, filter, and soften the water. The dischargers contend that wastes generated in the water treatment facilities consist almost entirely of material that would have been deposited in the ocean by the Mad River had the water not been diverted.

n19 See Footnote 4.

We agree that, in this instance, it is proper to apply the suspended solids limitations on a net [\*29] basis. There is ample evidence in a record to support granting the variance requested from Ocean Plan, Table A, and to support application of effluent limitations for suspended solids contained in the Guidelines on a net basis.

Since it is extremely difficult to measure turbidity on a net basis and since the waste Streams from the manufacturing processes typically have low turbidity, it is appropriate that no turbidity limitations be imposed.

The dischargers have presented ample evidence that settleable solids and floating particulates need not be specifically controlled in this instance because all applicable water quality objectives can be met without imposing such controls. The dischargers have, further, presented ample evidence that the discharge of wastewater with pH within the limits of 3.0 to 10.0 will result in compliance with all applicable water quality objectives.

At the State Board hearing on December 22, 1976, the dischargers indicated that they would meet the limitations for grease and oil, toxicity, heavy metals (other than chromium), and phenolic compounds. Thus, no relief from the Ocean Plan limitations for these parameters is necessary.

We are aware of the [\*30] difficulties involved in compliance with the Ocean Plan limitations for chromium and it is likely that the limitation will be changed as a result of the Ocean Plan review before the Table B limitations become effective. It is clear that the requirements for postponement of the compliance date contained in the Ocean Plan have been met and hence such an extension of time should be granted even though revision of the Plan is likely.

#### 7. Contention that a Decision by the State Board should be Held in Abeyance pending the Outcome of Litigation

We find no merit in the dischargers' request that their petition be held in abeyance pending the outcome of litigation in the federal courts regarding EPA's authority to issue relatively inflexible guidelines. We have been authorized to administer the NPDES permit program under Section 402 of the Federal Water Pollution Control Act, and unnecessary delay in the issuance of appropriate permits for the dischargers serves no useful purpose.

Further, the United States Supreme Court's decision in the duPont case, one of the decisions which the dischargers asked that we await, has now been rendered. With regard to variances, the decision does nothing [\*31] more than confirm the holding of the Fourth Circuit in the duPont case that a provision for variances from the 1977 limitations is required. n20 It does not clarify what the scope of the variance provision should be.

n20 E.I. duPont de Nemours and Company et al. v. Russell E. Train et al., 45 LW 4212 at 4217.

### III. CONCLUSIONS

After review of this matter, and for the reasons heretofore expressed, we conclude that the actions of the Regional Board in adopting Orders Nos. 76-133 and 76-134 were generally appropriate and proper except that the Regional Board adopted effluent limitations less stringent than limitations based on the presumptively applicable EPA Guidelines without allowance for the required approval by the Administrator of EPA.

#### IV. ORDER IT IS HEREBY ORDERED THAT:

1. Regional Board Orders Nos. 76-133 and 76-134 be set aside and replaced by the waste discharge requirements attached hereto and identified as Exhibit A and Exhibit B, which are hereby adopted.
2. The Executive Officer of the State Board [\*32] forward to the Administrator of EPA all necessary information, data, and documents submitted by petitioner, together with a copy of this Order.
3. The waste discharge requirements, Exhibits A and B, be remanded to the Regional Board for all purposes including, but not limited to such modifications (if any) as are necessary to bring them into conformance with the effluent

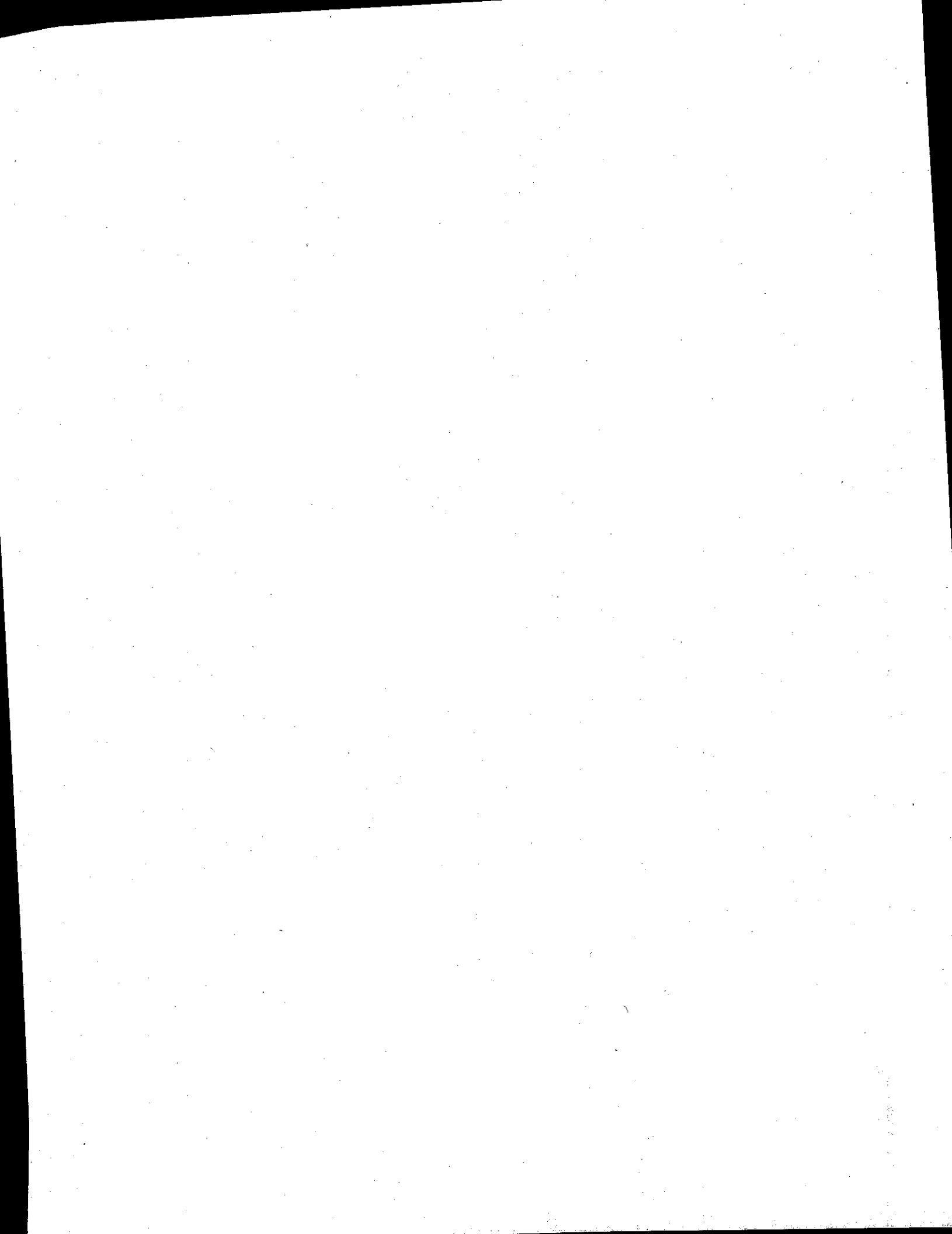
limitations determined to be appropriate by the Administrator of EPA subsequent to his review of this Order, other future modification of requirements as may be deemed necessary, and all appropriate enforcement activities.

In addition, the State Board directs the Regional Board to prepare and issue an appropriate self-monitoring program to be applied to the dischargers for which the State Board has issued the waste discharge requirements.

Finally, the dischargers are granted an extension of time until July 1, 1983, to meet the effluent quality requirement for chromium contained in the Ocean Plan.

**Legal Topics:**

For related research and practice materials, see the following legal topics:  
Environmental Law Water Quality Clean Water Act Discharge Permits Effluent Limitations Real Property Law Water Rights Procedure Real Property Law Zoning & Land Use Special Permits & Variances





LEXSEE 1977 CALENV LEXIS 23

WASTE DISCHARGE REQUIREMENTS FOR CROWN SIMPSON PULP COMPANY  
Humboldt County NPDES NO. CA0005882

Order No. 77-6

State of California  
State Water Resources Control Board

1977 Cal. ENV LEXIS 23

March 17, 1977

**CORE TERMS:** discharger, effluent, waste discharge, emission, concentration, monitoring, interfere, solids, water quality, maximum allowable, suspended, pollutant, monthly, Federal Water Pollution Control Act, exceeded, variance, dilution, guideline, water treatment, regulation, ocean, groundwater, notify, constituent, calculated, occurring, turbidity, pulp, noncompliance, notification

**BEFORE:** [\*1] John E. Bryson, Chairman, W. Don Maughan, Chairman, Roy E. Dodson, Member W. W. Adams, Member, Jean Auer, Member

**OPINION:**

**EXHIBIT A**

The California State Water Resources Control Board (State Board) finds that:

1. The Crown Simpson Pulp Company submitted an application for a U. S. Army Corps of Engineers permit to discharge (075-OYS-2-003032) dated June 28, 1971. The application has been supplemented by information supplied by the discharger in letters to the California Regional Water Quality Control Board, North Coast Region (Regional Board), in a technical report pursuant to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan), in documents submitted in relation to appeal and review proceedings, and in monitoring reports filed with the Regional Board.
2. Crown Simpson Pulp Company discharges effluents containing pollutants from kraft pulping processes, pulp bleaching processes and pulp drying processes located in its bleached kraft market pulp mill and from its water treatment plant processes into the Pacific Ocean, a water of the United States. Minor amounts of steam vault liquors from softwood veneer manufacturing processes which use direct steaming for [\*2] the conditioning of logs at the Simpson Timber Company Plywood Mill and domestic sewage from the Crown Simpson mill are contained in the discharge. The effluents, which flow at up to 30 MGD, are discharged through diffusers located near latitude 40 degrees, 48' N., longitude 124 degrees, 12' W. from a 2414-foot outfall at a depth of about 35 to 40 feet.

The discharger has eliminated discharge of industrial process wastes to Humboldt Bay, however, the proximity of mill operations to the bay may result in discharge of spills, waste-bearing stormwater runoff or leachate from chips or fuel to Humboldt Bay.

Mill activities may result in discharge of waste or leachate from chips or fuel to groundwater of the Samoa Peninsula.

3. The Regional Board adopted the Water Quality Control Plan for the North Coastal Basin (Basin Plan) on March 20, 1975, and adopted revisions thereto on March 25, 1976. The Basin Plan incorporates the Ocean Plan and the Water

Quality Control Policy for the Enclosed Bays and Estuaries of California. It contains effluent limitations and water quality objectives for Pacific Ocean discharges and prohibits most discharges to Humboldt Bay.

Provisions of the [\*3] Basin Plan, including Ocean Plan effluent limitations, are applicable to the discharge.

4. The beneficial uses of Pacific Ocean and Humboldt Bay include:

- a. industrial water supply
- b. navigation
- c. water contact recreation
- d. noncontact water recreation
- e. ocean commercial and sport fishing
- f. marine habitat
- g. fish migration
- h. fish spawning
- i. shellfish harvesting

5. The beneficial uses of shallow fresh groundwater on the Samoa Peninsula include domestic water supply. The uncertainty of supply and the susceptibility of this water to degradation from over pumping, percolation of sewage, by salinity from dredged material disposal and other activities has encouraged development by the Humboldt Bay Municipal Water District (HBMWD) of a water system utilizing Mad River supply. Groundwater in areas relying upon its use should be protected with minimum risk of degradation from waste discharges.

6. The discharger has requested exemptions from:

a. Ocean Plan Table A effluent limitations on:

Floating particulates  
Suspended solids  
Settleable solids  
Turbidity, and  
pH;

b. Ocean Plan Table B effluent limitations on chromium

c. the time schedule [\*4] provision of State Board Resolution No. 74-5; and

d. EPA Effluent Limitations Guidelines based limitations on:

BOD and pH.

7. Regarding the exemptions from Ocean Plan effluent limitations requested by the discharger:

a. Floating Particulates. The absence of any limitations on floating particulates will not interfere with compliance with the water quality objectives set forth in Chapter II of the Ocean Plan and will not interfere with compliance with the effluent quality requirements set forth in Chapter IV, Table B of the Ocean Plan.

b. Suspended Solids. Discharge of suspended solids at the rates specified herein will not interfere with compliance with the water quality objectives set forth in Chapter II of the Ocean Plan and will not interfere with compliance with the effluent quality requirements set forth in Chapter IV, Table B of the Ocean Plan. Since the suspended solids from the water treatment plant consist of silt from the Mad River that would normally be discharged to the ocean, it is appropriate that the limitations on suspended solids be on a net basis. Thus, the monitoring requirements will be established so as to give credit for suspended solids [\*5] resulting from water treatment plan operations.

c. **Settleable Solids.** The absence of any limitations on settleable solids will not interfere with compliance with the water quality objectives set forth in Chapter II of the Ocean Plan and will not interfere with compliance with the effluent quality requirements set forth in Chapter IV, Table B of the Ocean Plan.

d. **Turbidity.** The absence of any limitations on turbidity will not interfere with compliance with the water quality objectives set forth in Chapter II of the Ocean Plan and will not interfere with compliance with the effluent quality requirements set forth in Chapter IV, Table B of the Ocean Plan in that the turbidity from the water treatment plant consists of silt and clay from the Mad River that would normally be discharged to the ocean.

e. **pH.** Discharge of effluents with a pH within the range specified herein will not interfere with compliance with the water quality objectives set forth in Chapter II of the Ocean Plan and will not interfere with compliance with the effluent quality requirements set forth in Chapter IV, Table B of the Ocean Plan.

f. **Chromium and Time Schedule Provision of State Board Resolution [\*6] No. 74-5.** The discharger has presented substantial evidence that compliance with chromium limitations based on Chapter IV, Table B of the Ocean Plan is not possible through application of source controls and the best practicable control technology currently available.

8. On June 21, 1976, the discharger submitted to the Regional Board a request for variance from EPA effluent limits based on fundamentally different factors. The request was supplemented by testimony and evidence presented by the discharger during the course of public hearings before both the Regional Board and the State Board.

Based upon said testimony and evidence, the State Board finds that effluent exceeding the EPA guideline limitations for BOD and pH has substantially no adverse effect on the marine environment when properly diffused; that there will be few if any water quality benefits associated with treatment for BOD or pH, that there will be substantial environmental and energy costs associated with treatment for BOD and/or pH; and that, therefore, under the precedent established by the U. S. Court of Appeals (Fourth Circuit) in its decision in the case of *Appalachian Power Company vs. Train*, a variance [\*7] from the EPA guideline limitations is warranted. The State Board therefore grants herein a variance from effluent limitations from EPA guideline limitations for pH and for BOD generated in the pulp mill, subject to final approval of the variance by the Administrator of EPA.

9. Except as provided in Finding 8, above, effluent limitations pursuant to Section 301 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharge. The limits are contained in Code of Federal Regulations.

10. The discharger has requested that limits for BOD as established in Code of Federal Regulations be deleted from requirements for discharge to open ocean waters by diffusers. The State Board finds that adoption of BOD limitations is appropriate to its regulation of discharges to the Pacific Ocean.

11. The State Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written views and recommendations.

12. The State Board in a public hearing heard and considered all comments pertaining to the discharge.

13. [\*8] The discharger is currently discharging under waste discharge requirements issued by the Regional Board on September 4, 1968, and is monitoring and reporting under Monitoring and Reporting Program No. 74-211 adopted by the Regional Board on December 31, 1974.

**THEREFORE, IT IS HEREBY ORDERED** that the Crown Simpson Pulp Company, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and the provisions of the Federal Water Pollution Control Act, and regulations guidelines adopted thereunder, shall comply with the following:

**A. Prohibitions**

1. The discharge of waste to Humboldt Bay is prohibited.

2. The discharge of waste to shallow groundwaters of the Samoa Peninsula, except in which groundwater is unsuitable for domestic use, is prohibited.
3. The discharge of waste to the Pacific Ocean, except as provided under D. 2. of this order, is prohibited.
4. Discharge of radioactive materials in excess of the limits prescribed in Section 30269 of the California Administrative Code is prohibited.
5. Discharge of any wastewater pollutants resulting from plywood manufacturing which utilizes veneer as a raw material is prohibited. [\*9]

#### B. Effluent Limitations

1. The discharge of an effluent to the Pacific Ocean which exceeds the following is prohibited:

Constituents	Units	30-day a Average	30-day b Median	30-day c 90th %ile	Daily Maximum
Flow	MGD	30	--	--	44.4
BOD[5] (pulp)	lbs/day d	9,660	--	--	18,540
BOD[5] (Veneer)	lbs/ft <sup>3</sup> >f lbs/day	0.015 142.5	-- --	-- --	0.045 427.5
Suspended Solids e (pulp)	lbs/day	19,680	--	--	36,480
Grease & Oil	mg/l	--	10	15	--
pH	within the limits 5.0 and 9.0				

a The average of values in any 30 consecutive day period. Compliance will not be determined if fewer than four samples are analyzed.

b The value which is not exceeded in 50 percent of the samples in any 30 consecutive day period. Compliance will not be determined if fewer than four samples are analyzed.

c The value which is not exceeded in 90 percent of the samples in any 30 consecutive day period. Compliance will not be determined if fewer than four samples are analyzed.

d Based on 600 tons per day average annual production.

[\*10]

e In addition to the suspended solids in the raw water supply.

f Pounds of BOD [5] per cubic foot of production in terms of veneer, if that is the final product of this facility, or per cubic foot of plywood if the veneer is further processed into plywood at this facility.

2. The discharge of an effluent in excess of the following limits is prohibited: g h

Constituents	Units	50% of time	10% of time
Arsenic	mg/l	0.01	
Cadmium	mg/l	0.02	0.02
Copper	mg/l	0.2	0.03
Lead	mg/l	0.1	0.3
Mercury	mg/l	0.001	0.2
Nickel	mg/l	0.1	0.002
Silver	mg/l	0.02	0.2
Zinc	mg/l	0.3	0.04
Cyanide	mg/l	0.1	0.5
Phenolic Compounds	mg/l	0.5	0.2
Total Chlorine Residual	mg/l	1.0	1.0
Ammonia (expressed as nitrogen)	mg/l	40.0	2.0
Total Identifiable Chlorinated Hydrocarbons i	mg/l		60.0
Toxicity Concentration	mg/l	0.002	0.004
	tu	1.5	2.0

i Total Identifiable Chlorinated Hydrocarbons shall be measured by summing the individual concentrations of DDT, DDD, DDE, aldrin, BHC, chlordane, endrin, heptachlor, lindane, dieldrin, polychlorinated biphenyls, and other identifiable chlorinated hydrocarbons.

[\*11]

3. The discharge of an effluent in excess of the following limits is prohibited: g h

g The maximum allowable daily mass emission rate for each constituent listed in Item 2 above shall be calculated from the total waste flow occurring each specific day and the concentration specified in waste discharge requirements as that not to be exceeded more than 10 percent of the time. The mass emission rate of the discharge during any 24-hour period shall not exceed the maximum allowable daily mass emission rate.

h The maximum allowable monthly mass emission rate for each constituent listed in Item 2 above shall be calculated from the total waste flow occurring in each specific month and the concentration specified in waste discharge during any monthly period shall not exceed the maximum allowable monthly mass emission rate.

Constituent	Units	50% of time	10% of time
Total Chromium	mg/l	0.005	0.01

g The maximum allowable daily mass emission rate for each constituent listed in Item 2 above shall be calculated from the total waste flow occurring each specific day and the concentration specified in waste discharge requirements as that not to be exceeded more than 10 percent of the time. The mass emission rate of the discharge during any 24-hour period shall not exceed the maximum allowable daily mass emission rate.

[\*12]



h The maximum allowable monthly mass emission rate for each constituent listed in Item 2 above shall be calculated from the total waste flow occurring in each specific month and the concentration specified in waste discharge during any monthly period shall not exceed the maximum allowable monthly mass emission rate.

4. Upon approval by the Administrator of EPA of the finding of "fundamental difference" cited in Finding 8, above, the following limitations shall apply in lieu of the limitations in B. 1., above, for the following parameters. The limitations contained in B. 1. shall continue to apply for all other parameters. Should the Administrator approve a variance but find that limitations other than the following are appropriate, the Regional Board shall revise these waste discharge requirements consistent with the limitations approved by the Administrator.

Constituent	Units	30-day Average	Daily Maximum
BOD[5] (pulp)	lbs/day d	48,000	96,000
pH	within the limits 3.0 and 10.0		

d Based on 600 tons per day average annual production.

[\*13]

C. Receiving Water Limitations

1. The discharge shall not cause floating particulates, foam, or grease and oil to be visible.
2. The discharge shall not cause aesthetically undesirable discoloration of the ocean surface.
3. The transmittance of natural light shall not be significantly reduced at any point outside the initial dilution zone.
4. The discharge shall not cause the dissolved oxygen concentration outside the initial dilution zone at any time to be depressed more than 10 percent from that which occurs naturally.
5. The discharge shall not cause the pH outside the initial dilution zone to be changed at any time more than 0.2 units from that which occurs naturally.
6. The discharge shall not cause a violation of any other applicable existing water quality standard for the receiving water adopted pursuant to the Federal Water Pollution Control Act and implementing regulations. If more or less stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act and implementing regulations, the Regional Board shall revise or modify this order in accordance with such more or less [\*14] stringent standards.
7. In areas where shellfish are harvested, the discharge shall not cause the median total coliform organism concentration to exceed 70 per 100 ml nor shall the total coliform organism concentration exceed 230 per 100 ml 10 percent of the time.
8. The concentration of organic materials in marine sediments shall not be increased above that which would degrade marine life.
9. The discharge shall not cause toxic conditions to exist in the receiving water.

10. The discharge shall not cause the following limits to be exceeded after initial dilution:

Constituents	Units	50 Percentile	90 Percentile	Maximum
Grease and Oil	mg/m <math>\diamond</math>	10	20	--
Floating Particulates	mg dry wt/m <math>\diamond</math>	1.0	1.5	--

Toxicity	Constituents	Units Toxicity Units	50 Percentile	90 Percentile	Maximum 0.05
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D. Provisions

- Neither the treatment nor the discharge of pollutants shall create a pollution or a nuisance as defined by the California Water Code.
- The discharge shall achieve rapid initial dilution and effective dispersion to minimize concentrations of pollutants not removed by treatment. The diffusion system shall provide an initial dilution of effluent with seawater exceeding 100:1 at least [\*15] 50 percent of the time and exceeding 80:1 at least 90 percent of the time.
- The Crown Simpson Pulp Company shall comply with the following time schedules to assure compliance with Effluent Limitations B.1, B.2., B.3., and B. 4. All other provisions of this permit shall be applicable upon adoption.

Task Limitations B. 1. and B. 4.	Compliance Date	Report of Compliance Due
Commence preparation of plans and specifications for control facilities Compliance	April 1, 1977 July 1, 1977	April 15, 1977 July 15, 1977
Limitations B. 2. Progress report Commence construction of control facilities Compliance	May 1, 1977  January 1, 1978 July 1, 1978	May 15, 1977  January 15, 1978 July 15, 1978
Limitations B. 3. Progress report Progress report Progress report Progress report Commence preparation of plans and specifications for control facilities Progress report Commence construction of control facilities Progress report Compliance [*16]	October 1, 1977 July 1, 1978 April 1, 1979 January 1, 1980  July 1, 1980 April 1, 1981  January 1, 1982 October 1, 1982 July 1, 1983	October 15, 1977 July 15, 1978 April 15, 1979 January 15, 1980  July 15, 1980 April 15, 1981  January 15, 1982 October 15, 1982 July 15, 1983

The discharger shall submit to the Regional Board on or before each compliance report date, a report detailing his compliance or noncompliance with the specific date and task.

If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the discharger will be in compliance. The discharger shall notify the Regional Board by when he has returned to compliance with the time schedule.

- The discharger shall notify the Regional Board not later than 180 days in advance of implementation of any plans to alter production capacity of the product line of the manufacturing, producing or processing facility by more than ten percent. Such notification shall include submittal of a new Report of Waste Discharge and appropriate filing fee.

5. The discharger shall file with the Regional Board a Report of Waste Discharge at least 120 days before making any material change or proposed change in the character, location or volume of the discharge.
6. The discharger shall submit to the Regional Board by January 30 of each year, an annual summary of the quantities of all chemicals, listed by both trade and chemical names which [\*17] are used for cooling and/or boiler water treatment and which are discharged.
7. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from his liabilities under federal, state, or local laws other than those adopted pursuant to the Federal Water Pollution Control Act, nor guarantee the discharger a capacity right in the receiving waters.
8. The discharge of any radiological, chemical, or biological warfare agent is prohibited.
9. The discharger shall permit the Regional Board:
  - a. entry upon premises (during normal business hours) in which an effluent source is located or in which any required records are kept;
  - b. access to copy any records required to be kept under terms and conditions of this order;
  - c. inspection of monitoring equipment or records; and
  - d. sampling of any discharge.
10. All discharges authorized by this order shall be consistent with the terms and conditions of this order. The discharge of any pollutant more frequently than or at a level in excess of that identified and authorized by this order shall constitute a violation of the terms and [\*18] conditions of this order.
11. The discharger shall comply with a Monitoring and Reporting Program issued by the Regional Board Executive Officer and the General Provisions for Monitoring and Reporting and any modifications to these documents as specified by the Regional Board Executive Officer. Monitoring reports shall be submitted to the Regional Board and U. S. Environmental Protection Agency for each month, by the 15th day of the following month, beginning not later than the date specified in the Monitoring and Reporting Program issued by the Regional Board Executive Officer. Monitoring and Reporting Program No. 74-211 shall remain in effect until superseded or revoked.
12. The discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed by the discharger to achieve compliance with the waste discharge requirements.
13. Collected screenings, sludges, and other solids removed from liquid waste shall be disposed of at a legal point of disposal, and in accordance with the provisions of Division 7.5 of the California Water Code. For the purpose of this requirement, a legal point of disposal is defined as [\*19] one for which waste discharge requirements have been prescribed by a Regional Water Quality Control Board and which is in full compliance therewith.
14. After notice and opportunity for a hearing, this order may be terminated or modified for cause, including, but not limited to:
  - a. violation of any term or condition contained in this order;
  - b. obtaining this order 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 authorized discharge.

15. 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 Water Pollution Control Act, or amendments thereto, for a toxic pollutant which is present in the discharge authorized herein and such standard or prohibition is more stringent than any limitation upon such pollutant in this order, the Regional Board shall conduct a public hearing and consider revising or modifying this order in accordance with such toxic effluent standard or prohibition and so notify the discharger.

[\*20]

16. In the event the discharger is unable to comply with any of the conditions of this order due to:

- a. breakdown of waste treatment equipment;
- b. accidents caused by human error or negligence; or
- c. other causes such as acts of nature;

the discharger shall notify the Regional Board Executive Officer by telephone as soon as he or his agents have knowledge of the incident and confirm this notification in writing within two weeks of the telephone notification. The written notification shall include pertinent information explaining reasons for the noncompliance and shall indicate what steps were taken to correct the problem and the dates thereof, and what steps are being taken to prevent the problem from recurring.

17. This order expires five years from the date of adoption and the discharger must file a Report of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of such date as application for issuance of new waste discharge requirements.

18. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the discharger, the discharger shall [\*21] notify the succeeding owner or operator of the existence of this order by letter, a copy of which shall be forwarded to the Regional Board.

19. By January 1, 1981, the discharger shall submit to the Regional Board a plan for achieving effluent limitations representing Best Available Technology Economically Achievable as determined by applying the EPA effluent limitations guidelines applicable to this discharge on that date. If the discharger desires a variance for economic reasons under the provisions of Section 301(c) of the FWPCA, such a request, along with all supporting material required by applicable regulations, shall be submitted to the Regional Board by July 1, 1980.

20. The discharger shall submit to the Regional Board each month with the monthly effluent monitoring report a summary of the quantity of chromium contained in any chemicals used which reach the waste stream or which might reach the waste stream in the event of an upset or breakdown.

21. This order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act, or amendments thereto, and shall take effect at the end of ten [\*22] days from the date of adoption hereof, provided the Regional Administrator has no objections.

22. These waste discharge requirements supersede the waste discharge requirements issued by the Regional Board on September 4, 1968.

## EXHIBIT B

### WASTE DISCHARGE REQUIREMENTS FOR LOUISIANA-PACIFIC CORPORATION Humboldt County

The California State Water Resources Control Board (State Board) finds that:

1. Louisiana-Pacific Corporation and its predecessor, Georgia-Pacific Corporation, have submitted applications for federal permits, a technical report pursuant to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan), and supplemental information in letters and petitions which describe the corporation's discharges to the Pacific Ocean and Humboldt Bay.

2. Louisiana-Pacific Corporation discharges effluents containing pollutants from kraft pulping processes, pulp bleaching processes, and pulp drying processes located in its bleached kraft market pulp mill; from its water treatment plant processes; and from a hydraulic barker at its sawmill into the Pacific Ocean, a water of the United States. Minor amounts of steam vault liquors from softwood veneer manufacturing [\*23] processes which use direct steaming for the conditioning of logs, powerplant wastewaters, wastebearing stormwater runoff, and domestic sewage are contained in the discharge. These effluents, which flow at up to 30 MGD, are discharged through diffusers located near Latitude 40 degrees, 47'N., Longitude 124 degrees, 14'W., from a 3000-foot outfall at a depth of 35 to 40 feet. This discharge is hereby designated 001.

The discharger has eliminated discharge of industrial process wastes to Humboldt Bay, however, the proximity of mill operations to the bay may result in discharge of spills, waste-bearing stormwater runoff or leachate from chips or fuel to Humboldt Bay.

The discharger discharges noncontact cooling water from two compressors, hereby designated 002 and 003, and a powerplant hereby designated 004, to Humboldt Bay at points located near Latitude 40 degrees, 47'N., Longitude 124 degrees, 13'W.

Mill activities may result in discharge of waste or leachate from chips or fuel to groundwater of the Samoa Peninsula.

3. The Regional Board adopted the Water Quality Control Plan for the North Coastal Basin (Basin Plan) on March 20, 1975, and adopted revisions thereto on [\*24] March 25, 1976. The Basin Plan incorporates the Ocean Plan and the Water Quality Control Policy for the Enclosed Bays and Estuaries of California. It contains effluent limitations and water quality objectives for Pacific Ocean discharges and prohibits most discharges to Humboldt Bay.

4. The beneficial uses of Pacific Ocean and Humboldt Bay include:

- a. industrial water supply
- b. navigation
- c. water contact recreation
- d. noncontact water recreation
- e. ocean commercial and sport fishing
- f. marine habitat
- g. fish migration
- h. fish spawning
- i. shellfish harvesting

5. The beneficial uses of shallow fresh groundwater on the Samoa Peninsula include domestic water supply. The uncertainty of supply and the susceptibility of this water to degradation from over pumping, percolation of sewage, by salinity from dredged material disposal and other activities has encouraged development by the Humboldt Bay Municipal Water District (HBMWD) of a water system utilizing Mad River supply. Groundwater in areas relying upon its use should be protected with minimum risk of degradation from waste discharges.

6. The discharger has requested exemptions from:

a. Ocean Plan [\*25] Table A effluent limitations on:

Floating particulates  
Suspended solids  
Settleable solids  
Turbidity, and  
pH;

b. Ocean Plan Table B effluent limitations on chromium

c. the time schedule provision of State Board Resolution No. 74-5; and

d. EPA Effluent Limitations Guidelines based limitations on:

BOD and pH.

7. Regarding the exemptions from Ocean Plan effluent limitations requested by the discharger:

a. **Floating Particulates.** The absence of any limitations on floating particulates will not interfere with compliance with the water quality objectives set forth in Chapter II of the Ocean Plan and will not interfere with compliance with the effluent quality requirements set forth in Chapter IV, Table B of the Ocean Plan.

b. **Suspended Solids.** Discharge of suspended solids at the rates specified herein will not interfere with compliance with the water quality objectives set forth in Chapter II of the Ocean Plan and will not interfere with compliance with the effluent quality requirements set forth in Chapter IV, Table B of the Ocean Plan. Since the suspended solids from the water treatment plant consist of silt from the Mad River that would normally be [\*26] discharged to the ocean, it is appropriate that the limitations on suspended solids be on a net basis. Thus, the monitoring requirements will be established so as to give credit for suspended solids resulting from water treatment plant operators.

c. **Settleable Solids.** The absence of any limitations on settleable solids will not interfere with compliance with the water quality objectives set forth in Chapter II of the Ocean Plan and will not interfere with compliance with the effluent quality requirements set forth in Chapter IV, Table B of the Ocean Plan.

d. **Turbidity.** The absence of any limitations on turbidity will not interfere with compliance with the water quality objectives set forth in Chapter II of the Ocean Plan and will not interfere with compliance with the effluent quality requirements set forth in Chapter IV, Table B of the Ocean Plan in that the turbidity from the water treatment plant consists of silt and clay from the Mad River that would normally be discharged to the ocean.

e. **pH.** Discharge of effluents with a pH within the range specified herein will not interfere with compliance with the water quality objectives set forth in Chapter II of the Ocean [\*27] Plan and will not interfere with compliance with the effluent quality requirements set forth in Chapter IV, Table B of the Ocean Plan.

f. **Chromium and Time Schedule Provision of State Board Resolution No. 74-5.** The discharger has presented substantial evidence that compliance with chromium limitations based on Chapter IV, Table B of the Ocean Plan is not possible through application of source controls and the best practicable control technology currently available.

8. On June 21, 1976, the discharger submitted to the Regional Board a request for variance from EPA effluent limits based on fundamentally different factors. The request was supplemented by testimony and evidence presented by the discharger during the course of public hearings before both the Regional Board and the State Board.

Based upon said testimony and evidence, the State Board finds that effluent exceeding the EPA guideline limitations for BOD and pH has substantially no adverse effect on the marine environment when properly diffused; that there will be few if any water quality benefits associated with treatment for BOD or pH, that there will be substantial environmental and energy costs associated with [\*28] treatment for BOD and/or pH; and that, therefore, under the precedent established by the U. S. Court of Appeals (Fourth Circuit) in its decision in the case of *Appalachian Power Company vs. Train*, a variance from the EPA guideline limitations is warranted. The State Board therefore grants herein a variance from effluent limitations from EPA guideline limitations for pH and for BOD generated in the pulp mill, subject to final approval of the variance by the Administrator of EPA.

9. EPA has not promulgated an effluent guideline for hydraulic barking operations associated with saw mills. The State Board finds that application of a separate limit based on the EPA Guidelines for the Barking Subcategory of the Timber Products Processing Point Source Category (40.CFR 429.12) for BOD and suspended solids contributed by the sawmill hydraulic barker is appropriate.

10. Except as provided in Finding 8, above, effluent limitations pursuant to Section 301 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharge. The limits are contained in Code of Federal Regulations.

11. The discharger has requested that limits for BOD as established in [\*29] Code of Federal Regulations be deleted from requirements for discharge to open ocean waters by diffusers. The State Board finds that adoption of BOD limitations is appropriate to its regulation of discharges to the Pacific Ocean.

12. The State Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written views and recommendations.

13. The State Board in a public hearing heard and considered all comments pertaining to the discharge.

14. The discharger is currently discharging under waste discharge requirements issued by the Regional Board on September 4, 1968, and is monitoring and reporting under Monitoring and Reporting Program No. 74-212 adopted by the Regional Board on December 31, 1974.

IT IS HEREBY ORDERED THAT Louisiana-Pacific Corporation, in order to meet the provisions contained in Division 7 of the California Water Code and regulations and guidelines adopted thereunder, shall comply with the following:

A. Prohibitions

1. The discharge of waste to Humboldt Bay, except as provided under B. 4. of this order, [\*30] is prohibited.
2. The discharge of waste to shallow groundwaters of the Samoa Peninsula, except in which groundwater is unsuitable for domestic use, is prohibited.
3. The discharge of waste to the Pacific Ocean, except as provided under D. 2. of this order, is prohibited.
4. Discharge of radioactive materials in excess of the limits prescribed in Section 30269 of the California Administrative Code is prohibited.
5. Discharge of any wastewater pollutants resulting from plywood manufacturing which utilizes veneer as a raw material is prohibited.

B. Effluent Limitations

1. The discharge of an effluent to the Pacific Ocean which exceeds the following is prohibited:

Constituents	Units	30-day a Average	30-day b Median	30-day c 90th %ile	Daily Maximum
Flow	MGD	30	--	--	36
BOD[5] (pulp)	lbs/day d	9,821	--	--	18,849
BOD[5] (Hyd. Barker)	lbs/cu.ft lbs/day	0.03 1,500	--	--	0.09 4,500
BOD[5] (Veneer)	lbs/cu.ft. g lbs/day	0.015 283	--	--	0.045 849
Suspended Solids e					

Constituents (pulp)	Units	30-day a Average	30-day b Median	30-day c 90th %ile	Daily Maximum
Suspended Solids e (Hyd. Barker)	lbs/day d	20,008	--	--	37,088
Grease & Oil	lbs/ft. f lbs/day	0.144 7,200	--	--	0.431 21,550
pH [*31]	mg/l	--	10	15	--
within the limits 5.0 and 9.0.					

a The average of values in any 30 consecutive day period. Compliance will not be determined if fewer than four samples are analyzed.

b The value which is not exceeded in 50 percent of the samples in any 30 consecutive day period. Compliance will not be determined if fewer than four samples are analyzed.

c The value which is not exceeded in 90 percent of the samples in any 30 consecutive day period. Compliance will not be determined if fewer than four samples are analyzed.

d Based on 610 tons per day average annual production.

e In addition to the suspended solids in the raw water supply.

f Pounds of BOD[5] or suspended solids per cubic foot of wood processed through the hydraulic barker.

g Pounds of BOD[5] per cubic foot of production in terms of veneer, if that is the final product of this facility, or per cubic foot of plywood if the veneer is further processed into plywood at this facility.

h The maximum allowable daily mass emission rate for each constituent listed in Item 2 above shall be calculated from the total waste flow occurring each specific day and the concentration specified in waste discharge requirements as that not to be exceeded more than 10 percent of the time. The mass emission rate of the discharge during any 24-hour period shall not exceed the maximum allowable daily mass emission rate.

[\*32]

2. The discharge of an effluent in excess of the following limits is prohibited: h i

Constituents	Units	50% of time	10% of time
Arsenic	mg/l	0.01	0.02
Cadmium	mg/l	0.02	0.03
Copper	mg/l	0.2	0.3
Lead	mg/l	0.1	0.2
Mercury	mg/l	0.001	0.002
Nickel	mg/l	0.1	0.2
Silver	mg/l	0.02	0.04
Zinc	mg/l	0.3	0.5
Cyanide	mg/l	0.1	0.2



Constituents	Units	50% of time		10% of time	
		mg/l	0.5	1.0	2.0
Phenolic Compounds	mg/l	1.0		2.0	
Total Chlorine Residual	mg/l	40.0		60.0	
Ammonia (expressed as nitrogen)					
Total Identifiable Chlorinated Hydrocarbons j	mg/l	0.002		0.004	
Toxicity Concentration	tu	1.5		2.0	

h The maximum allowable daily mass emission rate for each constituent listed in Item 2 above shall be calculated from the total waste flow occurring each specific day and the concentration specified in waste discharge requirements as that not to be exceeded more than 10 percent of the time. The mass emission rate of the discharge during any 24-hour period shall not exceed the maximum allowable daily mass emission rate.

i The maximum allowable monthly mass emission rate for each constituent listed in Item 2 above shall be calculated from the total waste flow occurring in each specific month and the concentration specified in waste discharge requirements as that not to be exceeded more than 50 percent of the time. The mass emission rate of the discharge during any monthly period shall not exceed the maximum allowable monthly mass emission rate.

[\*33]

j Total Identifiable Chlorinated Hydrocarbons shall be measured by summing the individual concentrations of DDT, DDD, DDE, aldrin, BHC, chlordane, endrin, heptachlor, lindane, dieldrin, polychlorinated biphenyls, and other identifiable chlorinated hydrocarbons.

3. The discharge of an effluent in excess of the following limits is prohibited: h i

Constituent	Units	50% of time		10% of time	
		mg/l	0.005		0.01
Total Chromium					

h The maximum allowable daily mass emission rate for each constituent listed in Item 2 above shall be calculated from the total waste flow occurring each specific day and the concentration specified in waste discharge requirements as that not to be exceeded more than 10 percent of the time. The mass emission rate of the discharge during any 24-hour period shall not exceed the maximum allowable daily mass emission rate.

i The maximum allowable monthly mass emission rate for each constituent listed in Item 2 above shall be calculated from the total waste flow occurring in each specific month and the concentration specified in waste discharge requirements as that not to be exceeded more than 50 percent of the time. The mass emission rate of the discharge during any monthly period shall not exceed the maximum allowable monthly mass emission rate.

[\*34]

4. The discharge of noncontact cooling water to Humboldt Bay in excess of the following limits is prohibited:

30-day Daily Average Maximum 22.00 degrees 24.0 degrees C

5. Upon approval by the Administrator of EPA of the finding of "fundamental difference" cited in Finding 8, above, the following limitations shall apply in lieu of the limitations in B. 1., above, for the following parameters. The limitations contained in B. 1. shall continue to apply for all other parameters. Should the Administrator approve a variance but find that limitations other than the following are appropriate, the Regional Board shall revise these waste discharge requirements consistent with the limitations approved by the Administrator.

Constituent	Units	30-day Average	Daily Maximum
BOD [5] (pulp)	lbs/day d		
pH	within the limits 3.0 and 10.0	48,800	97,600

d Based on 610 tons per day average annual production.

C. Receiving Water Limitations

1. The discharge shall not cause floating particulates, foam, [\*35] or grease and oil to be visible.
2. The discharge shall not cause aesthetically undesirable discoloration of the ocean surface.
3. The transmittance of natural light shall not be significantly reduced at any point outside the initial dilution zone.
4. The discharge shall not cause the dissolved oxygen concentration outside the initial dilution zone at any time to be depressed more than 10 percent from that which occurs naturally.
5. The discharge shall not cause the pH outside the initial dilution zone to be changed at any time more than 0.2 units from that which occurs naturally.
6. The discharger shall not cause a violation of any other applicable existing water quality standard for the receiving water adopted pursuant to the Federal Water Pollution Control Act and implementing regulations. If more or less stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act and implementing regulations, the Regional Board shall revise or modify this order in accordance with such more or less stringent standards.
7. In areas where shellfish are harvested, the discharge shall not cause the [\*36] median total coliform organism concentration to exceed 70 per 100 ml nor shall the total coliform organism concentration exceed 230 per 100 ml 10 percent of the time.
8. The concentration of organic materials in marine sediments shall not be increased above that which would degrade marine life.
9. The discharge shall not cause toxic conditions to exist in the receiving water.

10. The discharge shall not cause the following limits to be exceeded after initial dilution:

Constituents	Units	50 Percentile	90 Percentile	Maximum
Grease and Oil	mg/m<math>\diamond</math>			
Floating Particulates		10	20	-
Toxicity	mg dry wt/m<math>\diamond</math> Toxicity Units	1.0	1.5	-
		-	-	0.05

D. Provisions

1. Neither the treatment nor the discharge of pollutants shall create a pollution or a nuisance as defined by the California Water Code.
2. The discharge shall achieve rapid initial dilution and effective dispersion to minimize concentrations of pollutants not removed by treatment. The diffusion system shall provide an initial dilution of effluent with seawater exceeding 100:1 at least 50 percent of the time and exceeding 80:1 at least 90 percent of the time.

3. The discharge [\*37] of noncontact cooling waters shall not elevate the temperature of Humboldt Bay to the detriment of beneficial uses of Humboldt Bay.

4. The discharger shall comply with the following time schedules to assure compliance with Effluent Limitations B. 1., B. 2., B. 3., and B. 5. All other provisions of this permit shall be applicable upon adoption.

Task	Compliance Date	Report of Compliance Due
Limitations B. 1. and B. 5. Commence preparation of plans and specifications for control facilities Compliance	April 1, 1977	April 15, 1977
	July 1, 1977	July 15, 1977
Limitations B. 2. Progress report Commence construction of control facilities Compliance	May 1, 1977	May 15, 1977
	January 1, 1978	January 15, 1978
Limitations B. 3. Progress report Commence construction of control facilities Compliance	July 1, 1978	July 15, 1978
	October 1, 1977	October 15, 1977
Progress report Progress report Progress report Commence preparation of plans and specifications for control facilities Progress report Commence construction of control facilities Progress report Compliance	July 1, 1978	July 15, 1978
	April 1, 1979	April 15, 1979
[*38]	January 1, 1980	January 15, 1980
	July 1, 1980	July 15, 1980
[*38]	April 1, 1981	April 15, 1981
	January 1, 1982	January 15, 1982
[*38]	October 1, 1982	October 15, 1982
	July 1, 1983	July 15, 1983

The discharger shall submit to the Regional Board on or before each compliance report date, a report detailing his compliance or noncompliance with the specific schedule date and task.

If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the discharger will be in compliance. The discharger shall notify the Regional Board by letter when he has returned to compliance with the time schedule.

5. The discharger shall notify the Regional Board not later than 180 days in advance of implementation of any plans to alter production capacity of the product line of the manufacturing, producing or processing facility by more than ten percent. Such notification shall include submittal of a new Report of Waste Discharge and appropriate filing fee.

6. The discharger shall file with the Regional Board a Report of Waste Discharge at least 120 days before making any material change or proposed change in the character, location or volume of the discharge.

7. The discharger shall submit to the Regional Board by January 30 of each year, an annual summary of the quantities of all chemicals, listed by both trade and chemical [\*39] names which are used for cooling and/or boiler water treatment and which are discharged. The discharger shall submit to the Regional Board each month with the monthly effluent monitoring report a summary of the quantity of chromium contained in any chemicals used which reach the waste stream or which might reach the waste stream in the event of an upset or breakdown.

8. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from his liabilities under federal, state, or local laws other than those adopted pursuant to the Federal Water Pollution Control Act, nor guarantee the discharger a capacity right in the receiving waters.
9. The discharge of any radiological, chemical, or biological warfare agent is prohibited.
10. The discharger shall permit the Regional Board:
  - a. entry upon premises (during normal business hours) in which an effluent source is located or in which any required records are kept;
  - b. access to copy any records required to be kept under terms and conditions of this order;
  - c. inspection of monitoring equipment or records; and
  - d. sampling of any [\*40] discharge.
11. All discharges authorized by this order shall be consistent with the terms and conditions of this order. The discharge of any pollutant more frequently than or at a level in excess of that identified and authorized by this order shall constitute a violation of the terms and conditions of this order.
12. The discharger shall comply with a Monitoring and Reporting Program issued by the Regional Board Executive Officer and the General Provisions for Monitoring and Reporting and any modifications to these documents as specified by the Regional Board Executive Officer. Monitoring reports shall be submitted to the Regional Board and U. S. Environmental Protection Agency for each month, by the 15th day of the following month, beginning not later than the date specified in the Monitoring and Reporting Program issued by the Regional Board Executive Officer. Monitoring and Reporting Program No. 74-212 shall remain in effect until supersede or revoked.
13. The discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed by the discharger to achieve compliance with the waste discharge requirements.  
[\*41]
14. Collected screenings, sludges, and other solids removed from liquid waste shall be disposed of at a legal point of disposal, and in accordance with the provisions of Division 7.5 of the California Water Code. For the purpose of this requirement, a legal point of disposal is defined as one for which waste discharge requirements have been prescribed by a Regional Water Quality Control Board and which is in full compliance therewith.
15. After notice and opportunity for a hearing, this order may be terminated or modified for cause, including, but not limited to:
  - a. violation of any term or condition contained in this order;
  - b. obtaining this order 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 authorized discharge.
16. 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 Water Pollution Control Act, or amendments thereto, for a toxic pollutant which is present in the discharge authorized herein and [\*42] such standard or prohibition is more stringent than any limitation upon such pollutant in this order, the Regional Board shall conduct a public hearing and consider revising or modifying this order in accordance with such toxic effluent standard or prohibition and so notify the discharger.
17. In the event the discharger is unable to comply with any of the conditions of this order due to:

- a. breakdown of waste treatment equipment;
- b. accidents caused by human error or negligence; or
- c. other causes such as acts of nature;

the discharger shall notify the Regional Board Executive Officer by telephone as soon as he or his agents have knowledge of the incident and confirm this notification in writing within two weeks of the telephone notification. The written notification shall include pertinent information explaining reasons for the noncompliance and shall indicate what steps were taken to correct the problem and the dates thereof, and what steps are being taken to prevent the problem from recurring.

18. This order expires five years from the date of adoption and the discharger must file a Report of Waste Discharge in accordance with Title 23, California Administrative [\*43] Code, not later than 180 days in advance of such date as application for issuance of new waste discharge requirements.

19. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the discharger, the discharger shall notify the succeeding owner or operator of the existence of this order by letter, a copy of which shall be forwarded to the Regional Board.

20. By January 1, 1981, the discharger shall submit to the Regional Board a plan for achieving effluent limitations representing Best Available Technology Economically Achievable as determined by applying the EPA effluent limitations guidelines applicable to this discharge on that date. If the discharger desires a variance for economic reasons under the provisions of Section 301(c) of the FWPCA, such a request, along with all supporting material required by applicable regulations, shall be submitted to the Regional Board by July 1, 1980.

21. This order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act, or amendments thereto, and shall take effect at the end of ten days [\*44] from the date of adoption hereof, provided the Regional Administrator has no objections.

22. These waste discharge requirements supersede the waste discharge requirements issued by the Regional Board on September 4, 1968.

STATE WATER RESOURCES CONTROL BOARD MEETING

FEBRUARY 17, 1977

ITEM 1 - PROPOSAL TO IMPOSE ADDITIONAL CAPACITY FUNDING LIMITATIONS AND SPECIAL GRANT CONDITION RESTRICTING FLOW ON THE ALISO WATER MANAGEMENT AGENCY (AWMA) PROJECT

Motion: It was moved by Mr. Dodson that grant eligibility be limited to 9.06 MGD and that staff be authorized to impose a grant condition stating that the average daily dry weather flow of wastewater to be treated and conveyed be limited as follows:

- Moulton-Niguel Water District
- El Toro Water District
- Los Alisos Water District

2.73 MGD  
3.47 MGD  
2.86 MGD

Legal Topics:

For related research and practice materials, see the following legal topics:  
Environmental Law Water Quality Clean Water Act Discharge Permits Effluent Limitations Real Property Law Torts General Overview Real Property Law Water Rights Groundwater

STATE WATER RESOURCES CONTROL BOARD  
RESOLUTION NO. 87- 103

APPROVING ONE EXCEPTION AND DEFERRING A DECISION ON  
A SECOND EXCEPTION TO THE WATER QUALITY CONTROL PLAN  
FOR THE OCEAN WATERS OF CALIFORNIA REQUESTED BY  
LOUISIANA-PACIFIC CORPORATION AND SIMPSON PAPER  
COMPANY FOR PULP MILLS IN HUMBOLDT COUNTY

WHEREAS:

1. Louisiana-Pacific Corporation and Simpson Paper Company (hereafter dischargers) own and operate bleached market kraft pulp mills on the Samoa Peninsula in Humboldt County which discharge wastes to the Pacific Ocean via submerged outfalls.
2. The State Board adopted a revised Water Quality Control Plan for the Ocean Waters of California (Ocean Plan) on November 17, 1983, which contains water quality objectives to protect all beneficial uses.
3. On April 30, 1986, the dischargers requested exceptions to the following Ocean Plan water quality objective:  

Chapter II.B.3. Natural light shall not be significantly reduced at any point outside the initial dilution zone as a result of the discharge of waste.
4. The Regional Water Quality Control Board, North Coast Region, has recommended approval of the exception to the light transmittance objective.
5. On October 6, 1986, the dischargers requested exceptions to the following effluent limitation:  

Table A. Dischargers shall, as a 30-day average, remove 75 percent of suspended solids from the influent stream before discharging wastewaters to the ocean.
6. Exceptions to the Ocean Plan can be granted by the State Board provided that: (a) the exception will not compromise protection of beneficial uses, and (b) the public interest will be served.
7. The dischargers have submitted material, including a laboratory study, which indicates that the discharge of suspended solids does not adversely affect beneficial uses of ocean waters, including marine habitat.
8. Compliance with the suspended solids limitation would be expensive and would cause significant disposal problems.

9. The dischargers have submitted material, including receiving water monitoring data and a modeling study, which indicates that the reduction of natural light which results from the waste discharges reduces the growth of phytoplankton and thereby has an impact on marine habitat.
10. Methods to reduce effluent color have unknown but possibly significant environmental effects, and it is in the public interest to determine those effects.
11. The State Water Resources Control Board held a hearing regarding the exceptions in Eureka, California on April 29, 1987.
12. The staff report has been prepared in compliance with the California Environmental Quality Act (CEQA).
13. The exceptions, as approved, will not have a significant effect on the environment.
14. The exceptions, as approved, will serve the public interest.
15. It will be necessary to establish a time schedule for meeting the objectives of the Ocean Plan in an enforceable order issued pursuant to Water Code Section 13301.

THEREFORE BE IT RESOLVED:

1. That the State Board hereby grants an exception to effluent limitations for suspended solids contained in Table A of the Ocean Plan for Louisiana-Pacific Corporation (NPDES No. CA0005894) and Simpson Paper Company (NPDES No. CA0005282).
2. That the State Board hereby defers a decision on exceptions to the light transmittance standard contained in Chapter II.B.3 of the Ocean Plan for Louisiana-Pacific Corporation (NPDES No. CA0005894) and Simpson Paper Company (NPDES No. CA0005282), pending completion of studies of the environmental effects of alternative actions.
3. That the companies shall evaluate the feasibility and environmental effects (including recreational impacts) of methods to reduce effluent color. Methods to be evaluated shall include, but not be limited to, extended digestion, oxygen delignification, improved brown stock washing, chlorine substitution, use of intensive mixers in the bleach towers, chemical oxidation of extraction filtrate, and extension of the outfalls into deeper water.

4. That the companies shall submit reports for State Board approval on the following time schedule: (1) six months from the effective date of this order, submit a report that (a) identifies the degree of color removal necessary to return phytoplankton growth in the wastewater plume to levels not significantly different from ambient, and (b) identifies the control options to be examined; (2) one year from the effective date of this order, submit a progress report on control options; (3) eighteen months from the effective date of this order, submit a final report that identifies the environmental impacts of all studied alternatives, including no action, identifies the most feasible option for color reduction, the associated costs, and the effectiveness of such option in terms of reducing the impact of the discharge on phytoplankton growth.
5. That the State Board directs the Regional Water Quality Control Board, North Coast Region, to adopt an order pursuant to Water Code Section 13301 establishing a time schedule for protection of water quality and for meeting the objectives of the Ocean Plan, consistent with this resolution.
6. That the State Board directs the Executive Director or his designee to transmit the decision on the exception requests to the U. S. Environmental Protection Agency, Region 9, for approval.

**CERTIFICATION**

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on November 17, 1987.

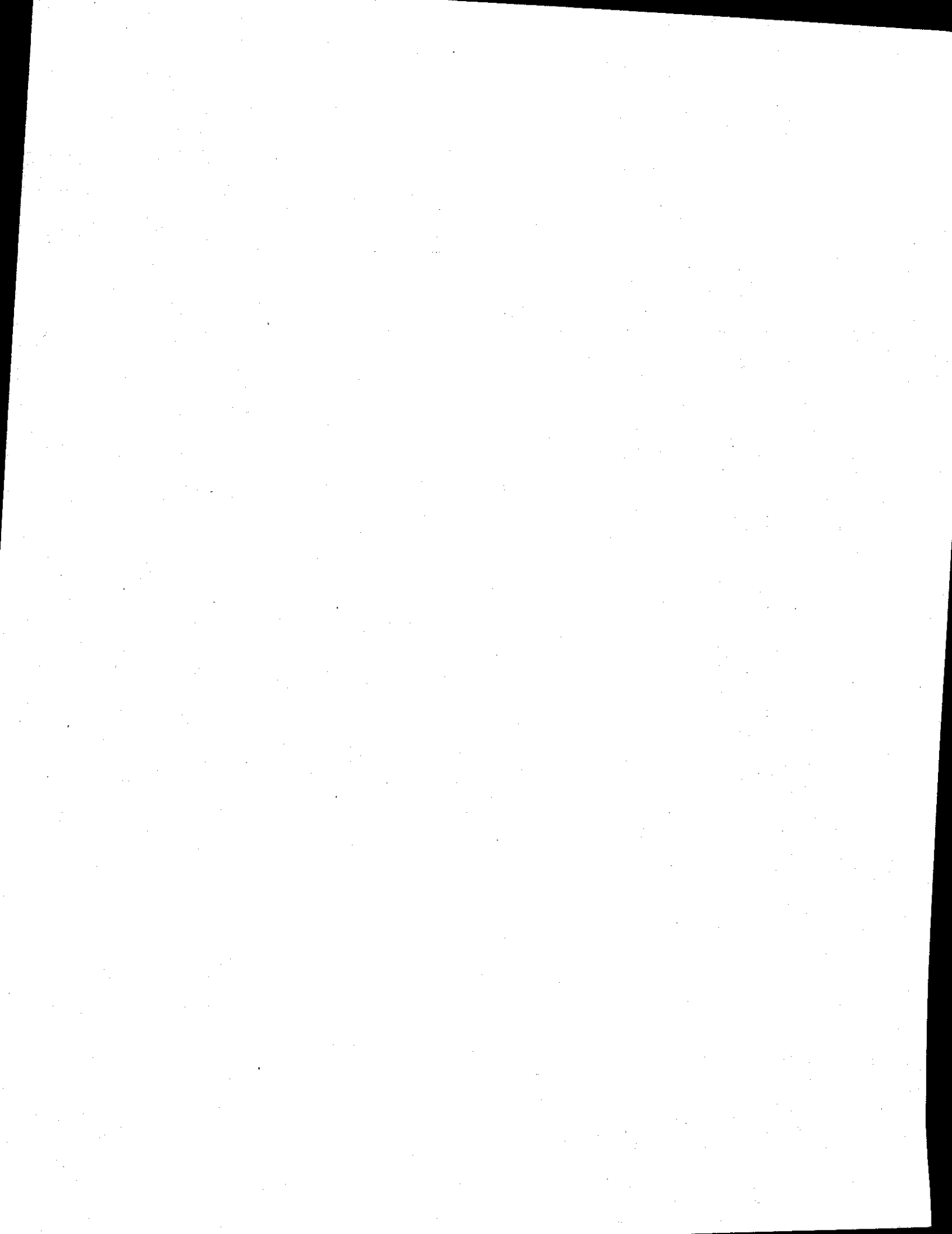
*Mausen Marche*

Mausen Marche

Administrative Assistant to the Board

*On a separate motion and vote dealing with an interim waiver from the Ocean Plan, pending the completion of studies which incorporated only Whereas clauses 3, 4, 8, 10, and 15 and Resolved clauses 2, 3, 4 and 5; Board Members Maughan, Finster, Walsh, and Sananigo voted aye, and Board Member Ruiz voted nay. The Board unanimously approved the remainder of the action.*





STAFF REPORT  
BY THE  
DIVISION OF WATER QUALITY  
STATE WATER RESOURCES CONTROL BOARD  
AUGUST 31, 1987

TECHNICAL REPORT ON OCEAN PLAN EXCEPTION  
REQUESTS FOR EUREKA PULP MILLS

Introduction

Two pulp mills in Humboldt County, operated by Louisiana-Pacific Corporation and Simpson Paper Company, have requested exceptions from Ocean Plan standards for suspended solids emission and light transmittance.

Background

The Louisiana-Pacific and Simpson Paper Company pulp mills were constructed in the mid-1960s on the Samoa Peninsula across the bay from the City of Eureka. Both mills use the bleached market kraft process and both mills discharge wastes from pulping and bleaching processes into the Pacific Ocean via submerged ocean outfalls with discharges located about 3,000 feet offshore and in waters approximately 40 feet deep. Pulp mill effluent is essentially a complex mixture of organic constituents dissolved in the pulping process and spent bleach plant chemicals. The wastes are discharged without treatment other than dilution provided by diffusers at the ends of the outfalls.

Section 301(m) of the federal Clean Water Act specifies that the permit for these two dischargers may contain waivers from the Effluent Limitation Guidelines requirements for biochemical oxygen demand and pH. One condition of such modified permits is that they must include terms sufficient to implement all applicable State water quality standards. State standards for ocean discharge are contained in the Ocean Plan.

The Exception Requests

The mills appear to meet all requirements of the Ocean Plan except the water quality objective for light transmittance and limitations on discharge of suspended solids. The mill representatives have requested exceptions from both standards. The State Board may grant an exception where the exception will not compromise the protection of ocean waters for beneficial uses and where the public interest will be served (Ocean Plan, Chapter VI.F.). Beneficial uses of ocean waters include "preservation and enhancement of fish, wildlife, and other marine resources" (Ocean Plan, Chapter I).

### Relevant Ocean Plan Standards

The suspended solids standard states, "Dischargers shall, as a 30-day average, remove 75 percent of suspended solids from the influent stream before discharging wastewaters to the ocean, except that the effluent limitation to be met shall not be lower than 60 mg/l" (Ocean Plan, Chapter IV, Table A). The purpose of the standard is to control the levels of pollutants which are closely associated with suspended matter (such as domestic sewage) and, secondarily, to prevent the physical covering of organisms.

The light transmittance standard states, "...natural light shall not be significantly reduced at any point outside the initial dilution zone as a result of the discharge of waste" (Ocean Plan, Chapter II, B.3). The purpose of the standard is to protect photosynthesis by small, floating plants (phytoplankton) and larger attached plants, such as kelp.

### Staff Analysis of the Exception Requests

#### A. Suspended Solids

Water used in the pulp-making process is drawn directly from the Mad River near its mouth, about ten miles north of the mills. The solids that enter the mills' water systems are mud and suspended materials from the river water. These solids are removed in a water treatment plant, mixed with other effluent components, and discharged to the ocean. The amount of solids discharged from each mill varies with silt levels in the river. It can reach 400 tons per day during major storms, and about 50 tons per day as an average. Essentially all of the suspended solids diverted to the mills from the Mad River are discharged into the ocean.

The usual rationale for regulation of suspended solids emission does not seem to apply to the pulp mills, since the influent solids are a fraction of the same river mud and detritus that reach the ocean by natural means. While there are no chemical analyses available for this material, there is no reason to believe it is toxic.

The solids in question are suspended in the main mill effluent for up to 30 minutes before discharge to the ocean. This fact raised the possibility that pollutants derived from mill processes would adhere to mud solids either during that period or upon discharge to sea water. A consultant to the companies (Bodega Marine Laboratory of the University of California) performed several tests of these possibilities, focusing on the fate of resin acids, fatty acids, and bleach

plant derivatives (RFAs). RFAs were tested because they are likely contributors to mill effluent toxicity. The tests showed that no more than a few percent of RFAs adsorb to mud solids in either whole effluent or following dilution in sea water. In short, Mad River mud solids move through the pulp mills essentially unchanged. Hence, there is no reason to believe that the discharge of suspended solids from the mills has any biological effect other than those arising from its diversion ten miles downcoast from the natural discharge point. The diversion seems inconsequential since silt loads from the Mad River move alongshore with currents and are a normal feature of the ocean environment offshore of the mills.

#### Alternative methods of solids disposal:

1. The water treatment plant solids could be pumped back to the Mad River. This would require a new pipeline system, acquisition of rights-of-way over 12 to 15 miles, and provisions for cleaning the pipeline and redispersing the solids uniformly in the river. The mills estimate total project cost to be several million dollars.
2. Solids could be pumped into trucks and carried to landfill sites. There is no estimate of the cost or feasibility of the action.

#### B. Light Transmittance

The mills discharge dark-colored effluent to the Pacific Ocean. The effluent reduces the amount of sunlight able to propagate downward through the water column and creates a plume of discolored water visible for up to three miles along the shore. Measurements in November 1986 showed the rate of attenuation of light within the plume to be four times as great as at a station outside the plume.

#### Impacts on the Marine Environment

The companies conducted a study using physical measurements and a mathematical model that showed an average 30-percent decline (60-percent decline in the worst case) in phytoplankton growth in the plume due to a reduction in photosynthesis. The growth of phytoplankton by photosynthesis provides the basic food supply for ocean life, and a decline in phytoplankton productivity reduces the productivity of the rest of the marine food chain; e.g., zooplankton and fish.

The reduction in plant growth is biologically significant. It is a measurable, demonstrable effect that biologists (the companies' consultant and State Board staff) agree is occurring, although actual rates of photosynthesis in the plume have not been measured. The companies do not dispute this decline in plankton growth.

The chief question is whether a beneficial use is compromised. The Ocean Plan provides for protection of marine communities, including plant species, from degradation. "Degradation shall be determined by analysis of the effects of waste discharge on species diversity, population density, contamination, growth anomalies, debility, or supplanting of normal species by undesirable plant and animal species" (Ocean Plan, Appendix).

Staff believes that since growth is reduced significantly up to three miles beyond the zone of initial dilution, the water quality objective identified in the Ocean Plan (i.e., "marine communities, including...plant species, shall not be degraded", Chapter II.D.1.) is not met.

The companies argue that the affected area (about one square mile) is so small relative to the geographic range of the plankton species involved that the losses do not matter, and that there is no evidence of degradation in other elements of the food chain, so that there is no problem.

Staff believes the amount of ocean area affected is not the core of the standard. The Ocean Plan specifies that compliance with the light transmittance objective shall be met outside the zone of initial dilution (Ocean Plan, Chapter II). The biological assessment is that a measurable, undisputed decline in phytoplankton function (i.e., photosynthesis) has occurred, and this decline constitutes degradation as defined in the Ocean Plan.

We believe the absence of evidence of degradation of other elements of the food chain is not required. Indeed, obtaining such evidence would require an expensive and lengthy monitoring program that may be inconclusive due to the variability and complexity of factors affecting other elements of the food chain. The light transmittance standard is specifically aimed at plants because of their essential biological role.

## Alternatives

Alternative actions to place the mills in compliance with the light transmittance standard include (1) chemical treatment to remove color from the effluent and (2) extending the outfalls, which will further dilute the effluent before it surfaces or else prevent the plume from blocking photosynthesis by keeping it below the upper water layers.

### A. Chemical Treatment

A number of processes have been developed to remove color from bleached kraft mill effluents. They include precipitation of the color-bearing particles with the use of lime, alum, or organic polymers, and methods using activated carbon, granular resins, hydrogen peroxide, wood-degrading fungi, photochemical oxidation, and membrane separators.

While some of these methods are still experimental, several are technically feasible and, in addition, do not require secondary treatment of mill effluent. The latter include ultrafiltration via membrane separators, peroxide bleaching, and precipitation with organic polymers, lime or alum. At least three of these methods (ultrafiltration, peroxide, and precipitation with polymers) are in use at various mills.

Promising treatment methods for the Humboldt County mills would involve changes in the pulp bleaching technique. According to Dan Bodien of EPA, Region 10, substitution of other bleaching chemicals, such as ozone or peroxide, for chlorine, would reduce both effluent color and effluent toxicity. Bodien states that a bleached kraft mill in Ontario, Canada, uses a closed-cycle method that removes color from its untreated effluent.

To our knowledge, the companies have evaluated only one method of color removal, namely, precipitation with lime. The companies estimate that a lime decolorizing system that removed 50 percent of the color bodies would cost \$10 million to build and \$700,000 to operate. A system that removed 85 percent of the color would cost \$1.1 million a year to operate. Disposal of the residue would cost additional amounts. For comparison, the companies estimated the expense of secondary treatment of wastewater at each mill as \$16 million in capital costs and \$5 or \$6 million per year to operate.

We believe that all the methods of color reduction deserve study by the companies for technical feasibility and cost, especially since several of them are not proven technologies.

Furthermore, the methods (e.g., peroxide bleaching) that involve in-plant controls should achieve both color reduction and toxicity reduction. Any solution to the color problem that will also reduce effluent toxicity is highly desirable, because a toxicity reduction program is an explicit condition of the mills' discharge permits.

B. Outfall extension

A second method of achieving compliance with the light transmittance standard is to extend the outfalls into deeper water, where initial dilution of the wastewater plume will increase and thus improve light transmittance or alternatively, the plume will be trapped below the near-surface zone where photosynthesis occurs.

Analysis of this option requires studies to determine the amount of extra initial dilution required, the frequency of conditions that would entrap the plume, the water depth needs to achieve these conditions, the length of outfall pipe to be added to reach that depth, and the cost of outfall extension.

The companies state the construction cost as \$2,000 per lineal foot of outfall. For example, if initial dilution needs to be increased by a factor of 4, and this equates to a water depth of 170 feet, which is 3 miles offshore, the outfall must be extended 12,500 feet, at a cost of \$25 million, plus unknown maintenance costs.

Thus, determination of the feasibility of outfall extensions requires a good deal of information. For example, the companies will need to make monthly measurements of the density (or temperature) of the water column from surface to bottom, from the bottom depth of the existing outfalls to a distance several miles offshore.

Summary of evidence

The mills do not meet the Ocean Plan standard for suspended solids removal, but the solid material in question is river mud and appears to cause no harm to ocean life. We believe the suspended solids discharge does not violate the intent of the Ocean Plan.

The mills do not meet the light transmittance standard, nor do they comply with the intent of the standard, which is to protect the growth of phytoplankton. Phytoplankton growth is diminished

over an area of about one square mile as a direct result of shading of the plankton by mill effluent. Staff believes this constitutes degradation as defined in the Ocean Plan. This is a technical determination, not a policy determination.

### Options for State Board action on light transmittance

The State Board may grant or deny the exception request. Granting of the exception requires a finding that the impact of mill effluent on phytoplankton is not significant. Since there is strong evidence to suggest that a significant impact occurs, the California Environmental Quality Act would apply and would require a complete examination and evaluation of feasible alternative actions which would achieve compliance with the light transmittance standard. The detailed analyses of chemical treatment methods and outfall extensions, described briefly in a previous section, would have to be performed and included in the State Board resolution to grant the exception.

#### Option 1: No degradation of plankton community.

A decision to grant the exception requires the conclusion that there is no degradation of the plankton. This decision will effectively nullify the light transmittance standard in the Ocean Plan. The technical evidence in this case is as strong as it can possibly be, considering the difficulties of performing marine biological monitoring programs in northern California waters. A judgment that the evidence is inconclusive or unconvincing will set a precedent for the interpretation of data on light transmittance effects, a precedent that will almost surely preclude a finding of degradation in any other case. Therefore, the light transmittance standard would become unenforceable.

This result has immediate relevance to the application for a Section 301(h) waiver by the County Sanitation Districts of Los Angeles County. The request for a waiver was recently denied by EPA, partly because of violations of the light transmittance standard. This discharger is reapplying for a Section 301(h) waiver and is following the pulp mill exception requests closely.

#### Option 2: Deny Exceptions

The second option is to deny the requests, based on a finding that the mills do not comply with the Ocean Plan. This option would preserve the integrity of the light transmittance objective. Denying the exception would not interfere with issuance of the mills' permits under Section 301(m) of the Clean Water Act, which occurred June 24, 1987 and became effective August 19, 1987.



If the light transmittance exception were denied, EPA and the Regional Board could put the mills on a schedule to meet the Ocean Plan requirement. A compliance schedule would give the companies time to explore methods of meeting the standard, and evaluate their feasibility and cost. Such an evaluation may take a few years in the case of outfall extensions and probably several years of research and development in the case of chemical treatment to remove color.

Investigation of color removal methods is a complex process ideally suited for the research and development (R&D) program mandated in Section 301(m)(1)(G). That program is a five-year effort intended to develop water pollution control technologies of value to the pulp and paper industry. The 301(m) project officer at EPA has agreed that color removal is an appropriate topic in the R&D program. The program has been underway unofficially for two years, and is overseen by a review team composed of representatives of the State and Regional Boards, EPA, the companies, and their consultants. Hence the organizational structure for the required research is already in place.

#### Staff recommendations

##### Suspended Solids:

Staff recommends that the exception from the suspended solids standard be granted.

##### Light Transmittance:

Staff recommends that the exception from the light transmittance objective be denied.