



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

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BOARD ORDER

IN THE MATTER OF

INTERNATIONAL PAPER)	SOLID WASTE ORDER
Jay, ME, Franklin County)	ASH UTILIZATION
INTEGRATED PULP AND PAPER MILL	)	PROGRAM APPROVAL
BIOMASS BOILER)	
S-20082-62-A-N	)	FINDINGS OF FACT & ORDER

Pursuant to the provisions of Title 38 M.R.S.A., Section 1301 and following, and Department Regulations, Chapter 567, the Board of Environmental Protection has considered the application of INTERNATIONAL PAPER, with its supportive data, agency review comments, and other related materials on file and finds the following facts:

1. International Paper has submitted a request for a Program Approval which will allow limited distribution of ash from their boiler for use as a soil amendment on agricultural and forest land. The ash is produced from the combustion of tree bark, paper mill sludge and a small amount of #6 oil. Under a Program Approval the Board of Environmental Protection would give initial approval to an ash utilization program based upon the ash characteristics, proposed ash application rates, and proposed individual site and program management. After the initial approval, the applicant would then request Department approval for each site on which it intends to apply ash. This request is similar to successful program approvals initiated by Greenville Steam Co., Greenville; Babcock Ultrapower, Jonesboro and West Enfield; Gorbell/Thermo Electron Power Company, Athens; Down East Peat, L.P., Deblois; and Fairfield Energy Venture, L.P., Fort Fairfield. The request complies with criteria found in Chapter 567, Rules for Land Application of Sludge and Residuals.
2. The applicant operates a fully integrated bleached pulp and paper mill, which produces approximately 1,500 tons of coated and uncoated fine business papers and carbonizing tissue per day. The mill is located in Jay, Maine.
3. The ash to be spread is generated by a design-rated 300,000 pounds of steam per hour bark-fired boiler. The boiler burns a mixture of tree bark from the three woodroom debarkers and combined primary and secondary sludge which is produced by the mill's wastewater treatment plant. The bark that is burned is a combination of softwood and hardwood in the following approximate proportions: 33% spruce and fir; 40% hemlock and pine; and 25% hardwood. A small amount of #6 fuel oil (less than 1% of the fuel mix) is used to maintain a pilot in the boiler. The relative proportions (by weight) of the fuel mix are 67% bark, 33% sludge, and <1% fuel oil.

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4. The sludge that is burned is produced by the mill's wastewater treatment plant. The wastewater treatment process includes coarse screening, primary clarification, secondary biological treatment, and secondary clarification. Approximately 40 million gallons of wastewater are treated each day. A small amount (0.125% of total wastewater flow) of human sanitary waste is treated at the plant through chlorination and acid stabilization.

The primary and secondary sludges are combined and then dewatered on screw presses to an average solids content of 45%. Approximately 45,000 dry tons of combined sludge is produced annually. The primary:secondary ratio is 85:15 on a dry weight basis. This sludge is primarily composed of water, wood fiber, lime, clay, nutrients, and trace elements. The sludge conforms to the parameters for heavy metals specified in Department Regulations, Chapter 567, Section B-1.b..

The applicant has analyzed the sludge for Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans (PCDDs and PCDFs) and the results for total TCDD equivalents range from 20.98 ppt to 87.6 ppt (8 samples) with an average value of 38.2.

5. Approximately 22,000 dry tons (31,500 wet tons) of bottom and fly ash are produced each year. The ash collection system consists of two types of ash removal: enclosed mechanical drag conveyors and a wet scrubber. The drag conveyors collect bottom ash which comes off the grates and fly ash from the mechanical dust collectors (cyclones). These two types of ash are combined at an approximate ratio of 77% bottom ash to 23% fly ash on a dry weight basis, and discharged to a silo for temporary storage (<12 hours). Combined ash is metered through a grinder and then into a paddle type conditioning system where water is added before the conditioned ash is loaded into trucks. This system collects approximately 98% of the ash produced. The second method of ash removal is through a wet scrubber. The scrubber ash consists of very small flue gas particulates which are collected in a water bath and discharged into the mill's general sewer and processed at the waste water treatment facility. This system collects approximately 2% of the total ash produced.

The ratio between bottom ash and fly ash will vary to a limited extent based on total fuel loading, fuel moisture content, and many operational variables. However, these ranges are confined within $\pm 5\%$ on dry weight basis. As such, bottom ash can range between 72% and 82% of the total, and fly ash can range between 18% and 28% of the total. The variation in wet scrubber ash is very limited ($\pm 1\%$).

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6. The ash proposed to be spread conforms to the parameters for heavy metals specified in Department Regulations, Chapter 567, Section B-1.b. The applicant proposes to spread only ash that conforms with these standards. The material contains no human pathogens and generates no odors.
7. The ash is subject to the testing requirements of Chapter 567, Section D for Polychlorinated Dibenzop-Dioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) due to the use of pulp and papermill sludge as a partial fuel source. The applicant has analyzed the ash for PCDDs and PCDFs and the results for total TCDD equivalents range from non-detect to 0.23 ppt (four samples) with an average value of 0.11 ppt. These results are below the 27 ppt de minimus value and therefore the ash is not subject to the siting and management criteria of the Interim Standards For Sludge and Residuals Containing Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans, Section D of Chapter 567.
8. The applicant proposes to conduct an ash utilization program in accordance with Chapter 567 by performing the following functions:
 - a. The applicant will submit applications to the DEP (on forms provided by the Department) on behalf of users of specific sites.
 - b. After initial contacts with a landowner, a field investigation will be performed by the applicant to:
 1. Determine name, address and phone number of each landowner.
 2. Develop a map showing the field location with respect to roads, site boundaries, wells, water bodies, intermittent streams, drainage gullies, any field drainage system and proposed winter field stacking sites.
 3. Locate property on a soils map to identify soil types and provide a certified soil scientist/qualified person to confirm soils where maps are not available, or when the District Conservationist or DEP staff person feels there may be a concern with the soils as mapped, or on forest sites.
 4. Locate property on a United States Geological Survey topographical map.

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- c. Have landowner and generator sign an ash utilization agreement to verify responsibility and liability.
 - d. Maintain a log showing dates and quantities of all ash shipments to each site and send a copy to the DEP for their files on a yearly basis.
9. In order to ensure that all ash delivered to utilization sites complies with the dioxin standard, all ash to be delivered to agricultural and forest sites, which are not licensed to accept ash that contains greater than 27 ppt total TCDD equivalents, will first be delivered to the applicant's landfill located at the Androscoggin Mill (license #26-6247-07090) for temporary storage and dioxin testing prior to storage on each individual site.

Ash to be delivered to agricultural or forest sites which are licensed to accept ash with greater than 27 ppt total TCDD equivalents will be exempt from this requirement. However, at least 7 continuous days worth of ash will be brought to the landfill site during each calendar month in order to provide a sufficient amount of ash from which a representative sample can be taken as specified in condition #7. The ash will be collected during days when the boiler is operating at full capacity. The results of the analyses from the seven day sample will represent the entire ash production for that calendar month. There will be at least a 14 day period between the seventh day of the previous month's sample period and the first day of the following month's sample period.

Ash will not be delivered to any agricultural or forest site, which is not licensed to accept sludges or residuals which contain greater than 27 ppt total TCDD equivalents, until the applicant submits to the Department a representative analysis of that ash which shows it to be under 27 ppt total TCDD equivalents.

10. Application rates will be determined by the liming (calcium carbonate) needs specified by soil tests and the calcium carbonate equivalence (expressed as CaCO_3) of the ash as determined by ash analyses. Maximum application rates will be limited to:

Maximum dry tons/acre/year (CaCO_3 equivalence)

Agricultural sites:

Topdressing	2
Incorporation	3

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Forest sites:

Topdressed 3

11. During times when landspreading sites become inaccessible, or if necessary for scheduling of deliveries, ash will be stockpiled at the applicant's landfill located at the Androscoggin Mill.
12. The applicant has proposed to comply with the following sampling and analysis protocol:
 - A. Metals/Nutrients- A complete analysis of the ash will be performed monthly for the first year and quarterly thereafter. The analytical parameters will include the following: aluminum; arsenic; barium; boron; cadmium; calcium; chloride; chromium; copper; iron; lead; magnesium; manganese; mercury; molybdenum; nickel; phosphorus; potassium; selenium; vanadium; zinc; pH; percent volatile solids; percent solids; and percent CaCO₃ equivalency. Samples will be taken in accordance with Department Regulations, Chapter 567, Appendix D. Section A.I.C.1., or with other methods approved by the Department.
 - B. Priority Pollutant Scan....annually
 - C. E.P. Toxicity....annually
 - D. Dioxin- Analyses for total TCDD's and TCDF's will be performed monthly for the first six months following the issuance date of this license. The applicant has proposed that after the initial six month period the monitoring frequency be reevaluated, and potentially reduced, based on the results from the first six months. The Department will evaluate a revised monitoring plan based on the monitoring results of the first six months.

Ash will be stockpiled at the applicant's landfill before being delivered to licensed agricultural or forest landspreading sites which are not licensed to accept ash with greater than 27 ppt total TCDD equivalents. Once each month, forty-eight grab samples will be taken from the stockpile which will consist of ash from seven days worth of production. From eight equidistant locations along the length of the pile, six grab samples will be taken. Two of these six samples will be taken from opposite sides of the pile at a height from ground level of one foot and a depth into the pile of 5.5 feet. Two more samples will be taken from opposite sides of the pile at a height of three feet and a depth of three feet. The last two samples will be taken from opposite sides of the pile at a height of six feet and a depth of one foot.

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The 48 grab samples will be mixed in a stainless steel bucket. Two composite samples will be taken from this mixture. Both of those samples will be analyzed to represent the ash production for the month.

The sampling tool, stainless steel bucket, and mixing tool will be prepared for sampling by being rinsed first with a non-phosphate detergent followed by three rinses with tap water and three rinses with deionized water. Samples will be stored in laboratory prepared amber bottles. The laboratory performing the test will archive the unused portion of each sample received.

13. The applicant proposes to analyze the soil prior to spreading for the following: pH; available phosphorus, calcium, magnesium, and potassium; cation exchange capacity; and the percent saturation of the soil cation exchange capacity with calcium, magnesium, potassium, and sodium. Soil sampling will be performed in accordance with Department Regulations, Chapter 567, Appendix D., Section A-I.A.3.a.
14. The applicant will conduct a monitoring program, in accordance with Chapter 567, on 10% of their licensed sites. The monitoring will determine the effects of ash application, through soil, plant tissue, or ground water analysis. The monitoring program will require Department approval prior to commencement.

BASED on the above findings of fact, the Board concludes that utilization and stockpiling of INTERNATIONAL PAPER'S ash under the Proposed Program Approval:

1. Will not pollute any water of the state;
2. Will not contaminate the ambient air;
3. Will not constitute a hazard to health or welfare;
4. Will not create a nuisance.

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Forest sites:

Topdressed 3

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12. The applicant has proposed to comply with the following sampling and analysis protocol:
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Therefore, the Board APPROVES the application of INTERNATIONAL PAPER ASH UTILIZATION PROGRAM APPROVAL according to the criteria proposed in the application, and the "Rules for Land Application of Sludge and Residuals", Chapter 567, subject to the following terms and conditions:

1. The Standard Conditions of Approval, a copy attached.
2. The applicant agrees to comply with all applicable rules and regulations in the "Rules for Land Application of Sludge and Residuals", Chapter 567, as amended.
3. The ash shall be conditioned prior to transport to ensure there is no internal combustion during shipment or stockpiling and shall not contain live embers. The ash shall be wetted sufficiently to preclude visible emissions during transfer to the container or truck and during transport to the ash storage, utilization, or disposal site.
4. Ash to be delivered to agricultural and forest sites, which are not licensed to accept ash which contains greater than 27 ppt total TCDD equivalents, shall first be delivered to the applicant's landfill for temporary storage and dioxin testing prior to storage on each individual site.

Ash to be delivered to agricultural or forest sites which are licensed to accept ash with greater than 27 ppt total TCDD equivalents shall be exempt from this requirement. However, at least 7 days worth of ash shall be brought to the landfill site during each calendar month in order to provide a sufficient amount of ash from which a representative sample can be taken as specified in condition #7. The results of the analyses from the seven day sample shall represent the entire ash production for that calendar month. There shall be at least a 14 day period between the seventh day of the previous month's sample period and the first day of the following month's sample period.

Ash shall not be delivered to any agricultural or forest sites, which are not licensed to accept ash which contains greater than 27 ppt total TCDD equivalents, until the applicant submits to the Department a representative analysis of that ash which shows it to be under 27 ppt total TCDD equivalents.

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5. Application rates shall be determined by the liming (calcium carbonate) needs specified by soil tests, and the calcium carbonate equivalence (expressed as CaCO₃) of the ash mixture as determined by ash analyses. Maximum application rates shall be limited to:

Maximum dry tons/acre/year (CaCO₃ equivalence)

Agricultural sites:

Topdressing	2
Incorporation	3

Forest sites:

Topdressed	3
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B. Priority Pollutant Scan...Annually

C. E.P. Toxicity...Annually

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6. During times when landspreading sites become inaccessible, or if necessary for scheduling of deliveries, ash shall be stored at the applicant's landfill located at the Androscoggin Mill.
7. The applicant shall comply with the following sampling and analysis protocol:
- A. Metals/Nutrients- A complete analysis of the ash shall be performed monthly for the first year and quarterly thereafter. The analytical parameters shall include the following: aluminum; arsenic; barium; boron; cadmium; calcium; chloride; chromium; copper; iron; lead; magnesium; manganese; mercury; molybdenum; nickel; phosphorus; potassium; selenium; vanadium; zinc; pH; percent volatile solids; percent solids; and percent CaCO_3 equivalency. Samples shall be taken in accordance with Department Regulations, Chapter 567, Appendix D. Section A.I.C.1., or with other methods approved by the Department. Results of analyses shall be sent to the Department within 14 days of receipt by the applicant.
 - B. Priority Pollutant Scan...Annually
 - C. E.P. Toxicity...Annually

INTERNATIONAL PAPER
Jay, ME, Franklin County
INTEGRATED PULP AND PAPER MILL
BIOMASS BOILER
S-20082-62-A-N

7 SOLID WASTE ORDER
) ASH UTILIZATION
) PROGRAM APPROVAL
)
) FINDINGS OF FACT & ORDER

Therefore, the Board APPROVES the application of INTERNATIONAL PAPER ASH UTILIZATION PROGRAM APPROVAL according to the criteria proposed in the application, and the "Rules for Land Application of Sludge and Residuals", Chapter 567, subject to the following terms and conditions:

1. The Standard Conditions of Approval, a copy attached.
2. The applicant agrees to comply with all applicable rules and regulations in the "Rules for Land Application of Sludge and Residuals", Chapter 567, as amended.
3. The ash shall be conditioned prior to transport to ensure there is no internal combustion during shipment or stockpiling and shall not contain live embers. The ash shall be wetted sufficiently to preclude visible emissions during transfer to the container or truck and during transport to the ash storage, utilization, or disposal site.
4. Ash to be delivered to agricultural and forest sites, which are not licensed to accept ash which contains greater than 27 ppt total TCDD equivalents, shall first be delivered to the applicant's landfill for temporary storage and dioxin testing prior to storage on each individual site.

Ash to be delivered to agricultural or forest sites which are licensed to accept ash with greater than 27 ppt total TCDD equivalents shall be exempt from this requirement. However, at least 7 days worth of ash shall be brought to the landfill site during each calendar month in order to provide a sufficient amount of ash from which a representative sample can be taken as specified in condition #7. The results of the analyses from the seven day sample shall represent the entire ash production for that calendar month. There shall be at least a 14 day period between the seventh day of the previous month's sample period and the first day of the following month's sample period.

Ash shall not be delivered to any agricultural or forest sites, which are not licensed to accept ash which contains greater than 27 ppt total TCDD equivalents, until the applicant submits to the Department a representative analysis of that ash which shows it to be under 27 ppt total TCDD equivalents.

INTERNATIONAL PAPER
Jay, ME, Franklin County
INTEGRATED PULP AND PAPER MILL
BIOMASS BOILER
S-20082-62-A-N

9 SOLID WASTE ORDER
) ASH UTILIZATION
) PROGRAM APPROVAL
)
) FINDINGS OF FACT & ORDER

B. Dioxin-

Analyses for total TCDD's and TCDF's shall be performed monthly for the first six months. The applicant shall propose, for Department review and approval, a revised monitoring plan for total TCDD's and TCDF's, within 180 days of the date of this order. The Department shall evaluate this plan based on the monitoring results of the first six months. The applicant shall conform to the monitoring and interim storage requirements of this condition and condition #4 until the revised monitoring plan is approved by the Department.

Ash shall be stockpiled at the applicant's landfill before being delivered to licensed agricultural or forest landspreading sites which are not licensed to accept ash with greater than 27 ppt total TCDD equivalent. Once each month, forty-eight grab samples shall be taken from the stockpile which shall consist of ash from seven days worth of production. From eight equidistant locations along the length of the pile, six grab samples shall be taken. Two of these six samples shall be taken from opposite sides of the pile at a height from ground level of one foot and a depth into the pile of 5.5 feet. Two more samples shall be taken from opposite sides of the pile at a height of three feet and a depth of three feet. The last two samples shall be taken from opposite sides of the pile at a height of six feet and a depth of one foot.

The 48 grab samples shall be mixed in a stainless steel bucket. Two composite samples shall be taken from this mixture. Both of those samples shall be analyzed to represent the ash production for the month.

The sampling tool, stainless steel bucket, and mixing tool shall be prepared for sampling by being rinsed first with a non-phosphate detergent followed by three rinses with tap water and three rinses with deionized water. Samples shall be stored in laboratory prepared amber bottles. The applicant shall direct the laboratory performing the test to archive the unused portion of each sample received. Results of analyses shall be sent to the Department within 14 days of receipt by applicant.

INTERNATIONAL PAPER
Jay, ME, Franklin County
INTEGRATED PULP AND PAPER MILL
BIOMASS BOILER
S-20082-62-A-N

10 SOLID WASTE ORDER
) ASH UTILIZATION
) PROGRAM APPROVAL
)
) FINDINGS OF FACT & ORDER

8. The applicant shall analyze the soil annually prior to spreading for the following: pH; available phosphorus, calcium, magnesium, and potassium; cation exchange capacity; and the percent saturation of the soil cation exchange capacity with calcium, magnesium, potassium, and sodium. Soil sampling shall be performed in accordance with Department Regulations, Chapter 567, Appendix D, Section A-1.A.3.a.
9. An annual tabulation of the volume of ash deliveries to the sites, the actual application rates, the dates of delivery, as well as results of ash analyses for each calendar year shall be submitted to the Department by January 31st of each following year.
- * 10. The applicant shall conduct a monitoring program on 10% of their licensed sites. The monitoring program shall determine the effects of ash application, through soil, plant tissue, or ground water analysis, in accordance with Chapter 567. The monitoring program shall require Department approval prior to commencement.
11. The term of this order is for 5 (five) years.

DONE AND DATED AT AUGUSTA, MAINE THIS 14 DAY OF March, 1990.

BOARD OF ENVIRONMENTAL PROTECTION

BY:

E. Christopher Livesay
E. Christopher Livesay, Chairman

PLEASE NOTE ATTACHED SHEET FOR APPEAL PROCEDURES....

20082/BK/s/odisk/jw

INTERNATIONAL PAPER
Jay, ME, Franklin County
INTEGRATED PULP AND PAPER MILL
BIOMASS BOILER
S-20082-62-A-N

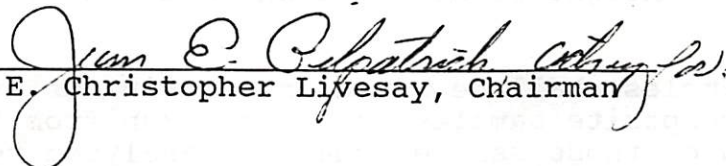
10 SOLID WASTE ORDER
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DONE AND DATED AT AUGUSTA, MAINE THIS 14 DAY OF March, 1990.

BOARD OF ENVIRONMENTAL PROTECTION

BY:


E. Christopher Livesay, Chairman

PLEASE NOTE ATTACHED SHEET FOR APPEAL PROCEDURES....

20082/BK/s/odisk/jw

INTERNATIONAL PAPER
Jay, ME, Franklin County
INTEGRATED PULP AND PAPER MILL
BIOMASS BOILER
S-20082-62-A-N

9 SOLID WASTE ORDER
) ASH UTILIZATION
) PROGRAM APPROVAL
)
) FINDINGS OF FACT & ORDER

B. Dioxin-

Analyses for total TCDD's and TCDF's shall be performed monthly for the first six months. The applicant shall propose, for Department review and approval, a revised monitoring plan for total TCDD's and TCDF's, within 180 days of the date of this order. The Department shall evaluate this plan based on the monitoring results of the first six months. The applicant shall conform to the monitoring and interim storage requirements of this condition and condition #4 until the revised monitoring plan is approved by the Department.

Ash shall be stockpiled at the applicant's landfill before being delivered to licensed agricultural or forest landspreading sites which are not licensed to accept ash with greater than 27 ppt total TCDD equivalent. Once each month, forty-eight grab samples shall be taken from the stockpile which shall consist of ash from seven days worth of production. From eight equidistant locations along the length of the pile, six grab samples shall be taken. Two of these six samples shall be taken from opposite sides of the pile at a height from ground level of one foot and a depth into the pile of 5.5 feet. Two more samples shall be taken from opposite sides of the pile at a height of three feet and a depth of three feet. The last two samples shall be taken from opposite sides of the pile at a height of six feet and a depth of one foot.

The 48 grab samples shall be mixed in a stainless steel bucket. Two composite samples shall be taken from this mixture. Both of those samples shall be analyzed to represent the ash production for the month.

The sampling tool, stainless steel bucket, and mixing tool shall be prepared for sampling by being rinsed first with a non-phosphate detergent followed by three rinses with tap water and three rinses with deionized water. Samples shall be stored in laboratory prepared amber bottles. The applicant shall direct the laboratory performing the test to archive the unused portion of each sample received. Results of analyses shall be sent to the Department within 14 days of receipt by applicant.



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

DEPARTMENT ORDER

IN THE MATTER OF

INTERNATIONAL PAPER	)	SOLID WASTE ORDER
Jay, Maine, Franklin County	)	ASH UTILIZATION PROGRAM APPROVAL
INTEGRATED PULP AND PAPER MILL	)	MINOR MODIFICATION
BIOMASS BOILER)	
S-20082-62-B-M	)	FINDING OF FACT AND ORDER

Pursuant to Title 38 M.R.S.A., Section 1301 et seq., and Department Regulations, Chapter 567, the Department of Environmental Protection has considered the application of INTERNATIONAL PAPER, with its supportive data, agency review comments, staff summaries, and other related materials, and finds the following facts:

1. The applicant requests modification of Program Approval # S-20082-62-A-N for ash utilization, which was issued by Board Order on March 14, 1990.
2. Program Approval # S-20082-62-A-N required the applicant to handle and test ash according to methods specified as conditions of the Program Approval in order to minimize risks associated with dioxin contamination. The Program Approval Conditions are as follows:

Condition 4.: Ash to be delivered to agricultural and forest sites, which are not licensed to accept ash which contains greater than 27 ppt total TCDD equivalents, shall first be delivered to the applicant's landfill for temporary storage and dioxin testing prior to storage on each individual site.

Ash to be delivered to agricultural or forest sites which are licensed to accept ash with greater than 27 ppt total TCDD equivalents shall be exempt from this requirement. However, at least 7 days worth of ash shall be brought to the landfill site during each calendar month in order to provide a sufficient amount of ash from which a representative sample can be taken as specified in conditions #7. The results of the analyses from the seven day sample shall represent the entire ash production for that calendar month. There shall be at least a 14 day period between the seventh day of the previous month's sample period and the first day of the following month's sample period.

Ash shall not be delivered to any agricultural or forest sites, which are not licensed to accept ash which contains greater than 27 ppt total PCDD equivalents, until the applicant submits to the Department a representative analysis of that ash which shows it to be under 27 ppt total TCDD equivalents.

The applicant shall comply with the following sampling and analysis protocol:

INTERNATIONAL PAPER	2	SOLID WASTE ORDER
Jay, Maine, Franklin County	)	ASH UTILIZATION PROGRAM APPROVAL
INTEGRATED PULP AND PAPER MILL	)	MINOR MODIFICATION
BIOMASS BOILER)	
S-20082-62-B-M	)	FINDING OF FACT AND ORDER

Condition 7.A.: Metals/Nutrients- A complete analysis of the ash shall be performed monthly for the first year and quarterly thereafter. The analytical parameters shall include the following: aluminum; arsenic; barium; boron; cadmium; calcium; chloride; chromium; copper; iron; lead; magnesium; manganese; mercury; molybdenum; nickel; phosphorus; potassium; selenium; vanadium; zinc; pH; percent volatile solids; percent solids CaCO₃ equivalency. Samples shall be taken in accordance with Department Regulations, Chapter 567, Appendix D. Section A.I.C.1., or with other methods approved by the Department. Results of analyses shall be sent to the Department within 14 days of receipt by the applicant.

Condition 7 B.: Dioxin- Analyses for total TCDD's and TCDF's shall be performed monthly for the first six months. The applicant shall propose, for Department review and approval, a revised monitoring plan for total TCDD's and TCDF's, within 180 days of the date of this order. The Department shall evaluate this plan based on the monitoring results of the first six months. The applicant shall conform to the monitoring and interim storage requirements of this condition and condition #4 until the revised monitoring plan is approved by the Department.

Ash shall be stockpiled at the applicant's landfill before being delivered to licensed agricultural or forest landspreading sites which are not licensed to accept ash with greater than 27 ppt total TCDD equivalent. Once each month, forty-eight grab samples shall be taken from the stockpile which shall consist of ash from seven days worth of production. From eight equidistant locations along the length of the pile, six grab samples shall be taken. Two of these six samples shall be taken from opposite sides of the pile at the height from ground level of one foot and a depth into the pile of 5.5 feet. Two more samples shall be taken from opposite sides of the pile at a height of three feet and a depth of three feet. The last two samples shall be taken from opposite sides of the pile at a height of six feet and a depth of one foot.

The 48 grab samples shall be mixed in a stainless steel bucket. Two composite samples shall be taken from this mixture. Both of those samples shall be analyzed to represent the ash production for the month.

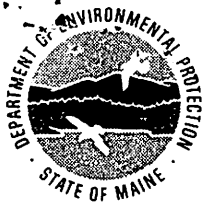
INTERNATIONAL PAPER	2	SOLID WASTE ORDER
Jay, Maine, Franklin County	)	ASH UTILIZATION PROGRAM APPROVAL
INTEGRATED PULP AND PAPER MILL)	MINOR MODIFICATION
BIOMASS BOILER)	
S-20082-62-B-M)	FINDING OF FACT AND ORDER

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Condition 7 B.: Dioxin- Analyses for total TCDD's and TCDF's shall be performed monthly for the first six months. The applicant shall propose, for Department review and approval, a revised monitoring plan for total TCDD's and TCDF's, within 180 days of the date of this order. The Department shall evaluate this plan based on the monitoring results of the first six months. The applicant shall conform to the monitoring and interim storage requirements of this condition and condition #4 until the revised monitoring plan is approved by the Department.

Ash shall be stockpiled at the applicant's landfill before being delivered to licensed agricultural or forest landspreading sites which are not licensed to accept ash with greater than 27 ppt total TCDD equivalent. Once each month, forty-eight grab samples shall be taken from the stockpile which shall consist of ash from seven days worth of production. From eight equidistant locations along the length of the pile, six grab samples shall be taken. Two of these six samples shall be taken from opposite sides of the pile at the height from ground level of one foot and a depth into the pile of 5.5 feet. Two more samples shall be taken from opposite sides of the pile at a height of three feet and a depth of three feet. The last two samples shall be taken from opposite sides of the pile at a height of six feet and a depth of one foot.

The 48 grab samples shall be mixed in a stainless steel bucket. Two composite samples shall be taken from this mixture. Both of those samples shall be analyzed to represent the ash production for the month.



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

DEPARTMENT ORDER

IN THE MATTER OF

INTERNATIONAL PAPER	)	SOLID WASTE ORDER
Jay, Maine, Franklin County	)	ASH UTILIZATION PROGRAM APPROVAL
INTEGRATED PULP AND PAPER MILL	)	MINOR MODIFICATION
BIOMASS BOILER)	
S-20082-62-B-M	)	FINDING OF FACT AND ORDER

Pursuant to Title 38 M.R.S.A., Section 1301 et seq., and Department Regulations, Chapter 567, the Department of Environmental Protection has considered the application of INTERNATIONAL PAPER, with its supportive data, agency review comments, staff summaries, and other related materials, and finds the following facts:

1. The applicant requests modification of Program Approval # S-20082-62-A-N for ash utilization, which was issued by Board Order on March 14, 1990.
2. Program Approval # S-20082-62-A-N required the applicant to handle and test ash according to methods specified as conditions of the Program Approval in order to minimize risks associated with dioxin contamination. The Program Approval Conditions are as follows:

Condition 4.: Ash to be delivered to agricultural and forest sites, which are not licensed to accept ash which contains greater than 27 ppt total TCDD equivalents, shall first be delivered to the applicant's landfill for temporary storage and dioxin testing prior to storage on each individual site.

Ash to be delivered to agricultural or forest sites which are licensed to accept ash with greater than 27 ppt total TCDD equivalents shall be exempt from this requirement. However, at least 7 days worth of ash shall be brought to the landfill site during each calendar month in order to provide a sufficient amount of ash from which a representative sample can be taken as specified in conditions #7. The results of the analyses from the seven day sample shall represent the entire ash production for that calendar month. There shall be at least a 14 day period between the seventh day of the previous month's sample period and the first day of the following month's sample period.

Ash shall not be delivered to any agricultural or forest sites, which are not licensed to accept ash which contains greater than 27 ppt total PCDD equivalents, until the applicant submits to the Department a representative analysis of that ash which shows it to be under 27 ppt total TCDD equivalents.

The applicant shall comply with the following sampling and analysis protocol:

INTERNATIONAL PAPER	3	SOLID WASTE ORDER
Jay, Maine, Franklin County	)	ASH UTILIZATION PROGRAM APPROVAL
INTEGRATED PULP AND PAPER MILL	)	MINOR MODIFICATION
BIOMASS BOILER)	
S-20082-62-B-M	)	FINDING OF FACT AND ORDER

The sampling tool, stainless steel bucket, and mixing tool shall be prepared for sampling by being rinsed first with a non-phosphate detergent followed by three rinses with tap water and three rinses with deionized water. Samples shall be stored in laboratory prepared amber bottles. The applicant shall direct the laboratory performing the test to archive the unused portion of each sample received. Results of analyses shall be sent to the Department within 14 days of receipt by applicant.

3. The applicant has performed 15 analyses to date, utilizing the required ash sampling protocol. Results of these analyses indicate total 2,3,7,8 TCDD Toxic Equivalent Factors ranging from 0 ppt to 0.1409 ppt, with an average value of 0.0331 ppt. These results are well within the Chapter 567, Part D de minimus level of 27 ppt. Analytical results for metals content have shown the ash to fall substantially within the Chapter 567 standards for metals.
4. The applicant has submitted evidence which indicates that dioxin begins decomposition at 932 degrees Fahrenheit and is completely decomposed when subjected to temperatures of 1472 degrees Fahrenheit for 21 seconds. The International Paper boiler burns sludge at a temperature of 1800 - 2000 degrees Fahrenheit, with a retention time of 2.1 seconds.
5. The applicant proposes to eliminate the ash stockpiling and dioxin pretesting requirements, reduce the frequency of dioxin, nutrients, and metals testing from monthly to quarterly, and eliminate the requirement for duplicate samples for dioxin testing. Furthermore, the applicant proposes the following ash sampling protocol:

A grab sample will be taken from each load of ash delivered to a utilization site. At the end of each quarter, a composite sample will be made by combining the same volume of ash from each grab sample delivered during the quarter into the composite. The composite sample will then be divided into two subsamples. One subsample will be analyzed for metals and nutrient content, and the other subsample will be analyzed for dioxin content.

Based on the above Findings of Fact the Department concludes that modification of Program Approval #S-20082-62-A-N by International Paper as set forth below:

1. will not pollute any water of the state;
2. will not contaminate the ambient air;
3. will not constitute a hazard to health or welfare;
4. will not create a nuisance.

INTERNATIONAL PAPER	4	SOLID WASTE ORDER
Jay, Maine, Franklin County	)	ASH UTILIZATION PROGRAM APPROVAL
INTEGRATED PULP AND PAPER MILL	)	MINOR MODIFICATION
BIOMASS BOILER)	
S-20082-62-B-M	)	FINDING OF FACT AND ORDER

THEREFORE, the Department APPROVES the application of INTERNATIONAL PAPER to modify Program Approval #S-20082-A-N according to the criteria in the Rules for Land Application of Sludge and Residuals, Chapter 567, subject to the following terms and conditions:

1. The Standard Conditions of Approval, a copy attached.
2. Condition #4 of Program Approval #S-20082-A-N is removed.
3. Condition #7.A. of Program Approval #S-20082-A-N is modified to require quarterly testing for metals and nutrients.
4. Condition #7.B. of Program Approval #S-20082-A-N is modified to require quarterly testing for dioxin.
5. Condition #7.B of Program Approval #S-20082-A-N is further modified to require the following ash sampling protocol:

A grab sample shall be taken from each load of ash delivered to a utilization site. At the end of each quarter, a composite sample shall be made by combining the same volume of ash from each grab sample delivered during the quarter into the composite. The composite sample shall then be divided into two subsamples. One subsample shall be analyzed for metals and nutrient content, and the other subsample shall be analyzed for dioxin content.

DONE AND DATED AT AUGUSTA, MAINE, THIS 10th DAY OF July, 1991.
 DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Dean C. Marriott
 Dean C. Marriott, Commissioner

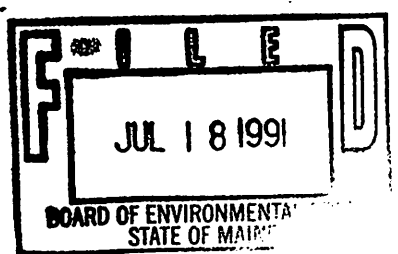
PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES...

Date of initial receipt of application 2/8/91

Date of application acceptance 2/8/91

Date filed with Board of Environmental Protection

SP/IP



INTERNATIONAL PAPER	4	SOLID WASTE ORDER
Jay, Maine, Franklin County	)	ASH UTILIZATION PROGRAM APPROVAL
INTEGRATED PULP AND PAPER MILL	)	MINOR MODIFICATION
BIOMASS BOILER)	
S-20082-62-B-M	)	FINDING OF FACT AND ORDER

THEREFORE, the Department APPROVES the application of INTERNATIONAL PAPER to modify Program Approval #S-20082-A-N according to the criteria in the Rules for Land Application of Sludge and Residuals, Chapter 567, subject to the following terms and conditions:

1. The Standard Conditions of Approval, a copy attached.
2. Condition #4 of Program Approval #S-20082-A-N is removed.
3. Condition #7.A. of Program Approval #S-20082-A-N is modified to require quarterly testing for metals and nutrients.
4. Condition #7.B. of Program Approval #S-20082-A-N is modified to require quarterly testing for dioxin.
5. Condition #7.B of Program Approval #S-20082-A-N is further modified to require the following ash sampling protocol:

A grab sample shall be taken from each load of ash delivered to a utilization site. At the end of each quarter, a composite sample shall be made by combining the same volume of ash from each grab sample delivered during the quarter into the composite. The composite sample shall then be divided into two subsamples. One subsample shall be analyzed for metals and nutrient content, and the other subsample shall be analyzed for dioxin content.

DONE AND DATED AT AUGUSTA, MAINE, THIS 10th DAY OF July, 1991.
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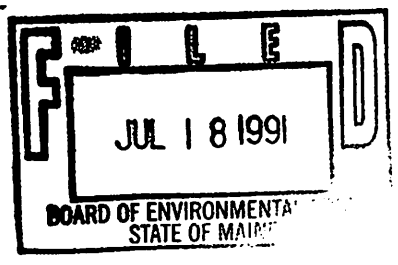
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INTERNATIONAL PAPER	3	SOLID WASTE ORDER
Jay, Maine, Franklin County)	ASH UTILIZATION PROGRAM APPROVAL
INTEGRATED PULP AND PAPER MILL)	MINOR MODIFICATION
BIOMASS BOILER)	
S-20082-62-B-M)	FINDING OF FACT AND ORDER

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Based on the above Findings of Fact the Department concludes that modification of Program Approval #S-20082-62-A-N by International Paper as set forth below:

1. will not pollute any water of the state;
2. will not contaminate the ambient air;
3. will not constitute a hazard to health or welfare;
4. will not create a nuisance.