Golder Associates

AMBIENT IMPACT ANALYSIS
FOR
GEORGIA-PACIFIC CORPORATION

PALATKA MILL

Prepared For:

GEORGIA-PACIFIC CORPORATION
PALATKA, FLORIDA

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1.0 INTRODUCTION

Georgia-Pacific Corporation (G-P) operates a Kraft Pulp Mill located in Palatka, Putnam County, Florida. An atmospheric dispersion modeling analysis of the G-P Palatka Mill has been conducted in support of an air construction permit application for the No. 3 Bleach Plant. The Florida Department of Environmental Protection (FDEP) issued a draft air construction permit for the No. 3 Bleach Plant on May 12, 1999. As a prerequisite to issuance of the final air construction permit, Georgia-Pacific must demonstrate that the G-P Palatka Mill is in compliance with all ambient air quality standards (AAQS) and Prevention of Significant Deterioration (PSD) Class II and Class I allowable increments.

This report contains the technical information and analysis developed in accordance with the PSD regulations as promulgated by the U.S. Environmental Protection Agency (EPA) and implemented through delegation to the FDEP. It presents an assessment of potential air quality impacts associated with the G-P Palatka Mill. The following pollutants, for which AAQS have been promulgated, are addressed:

- Particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}),
- Nitrogen dioxide (NO_2),
- Sulfur dioxide (SO_2), and
- Carbon monoxide (CO).

The existing applicable, national and Florida Ambient Air Quality Standards (AAQS) are presented in Table 1-1. Primary national AAQS were promulgated to protect the public health. Secondary national AAQS were promulgated to protect the public welfare from any known or anticipated adverse effects associated with the presence of pollutants in the ambient air.

Florida has adopted State AAQS in Rule 62-204.240. These standards are the same as the national AAQS, except in the case of SO_2. For SO_2, Florida has adopted the former 24-hour and annual average secondary standards of 260 and 60 micrograms per cubic meter ($\mu g/m^3$), respectively.

EPA has promulgated allowable PSD air quality increments, which limit increases in air quality levels above an air quality baseline concentration level for SO_2, PM_{10}, and NO_2. Increases above these increments would constitute significant deterioration. The EPA class designations and allowable PSD increments are presented in Table 1-1. The magnitude of the allowable increment depends on the classification of the area where source is located or will have an impact. Three classifications are designated based on criteria established in the Clean Air Act Amendments. Congress promulgated areas as Class I (international parks, national wilderness areas, and memorial parks larger than 5,000 acres, and national parks larger than 6,000 acres) or as Class II (all areas not designated as Class I). No Class III areas, which would be allowed greater deterioration than Class II areas, were designated.

Putnam County has been designated as an attainment or unclassifiable area for all criteria pollutants. The County is also classified as a PSD Class II area for PM_{10}, SO_2, and NO_2. The nearest PSD Class I area is the Okefenokee National Wilderness Area, located 111 km north of the G-P Palatka Mill.

The air quality impact analysis demonstrates that emissions from the G-P Palatka Mill will not result in ambient concentrations above the AAQS or the PSD Class II or Class I increments.

This report is divided into four major sections, including this introduction:

- Section 2.0 presents a description of the G-P Palatka facility, along with source emission rates and stack parameters;
- Section 3.0 presents existing air quality data for purposes of determining suitable background air quality concentrations for each pollutant;
- Section 4.0 presents the air modeling methodology, emissions inventories, and data used in the analysis;
- Section 5.0 presents the results, which demonstrate compliance of the G-P Palatka Mill with the AAQS and PSD increments.

Table 1-1. National and State AAQS, Allowable PSD Increments, and Significant Impact Levels ($\mu g/m^3$)

Pollutant	Averaging Time	AAQS			PSD Increments		Significant Impact Levels[d]
		National Primary Standard	National Secondary Standard	State of Florida	Class I	Class II	
Particulate Matter[a] (PM10)	Annual Arithmetic Mean	50	50	50	4	17	1
	24-Hour Maximum	150[b]	150[b]	150[b]	8	30	5
Sulfur Dioxide	Annual Arithmetic Mean	80	NA	60	2	20	1
	24-Hour Maximum	365[b]	NA	260[b]	5	91	5
	3-Hour Maximum	NA	1,300[b]	1,300[b]	25	512	25
Carbon Monoxide	8-Hour Maximum	10,000[b]	10,000[b]	10,000[b]	NA	NA	500
	1-Hour Maximum	40,000[b]	40,000[b]	40,000[b]	NA	NA	2,000
Nitrogen Dioxide	Annual Arithmetic Mean	100	100	100	2.5	25	1
Ozone[a]	1-Hour Maximum	235[c]	235[c]	235[c]	NA	NA	NA
Lead	Calendar Quarter Arithmetic Mean	1.5	1.5	1.5	NA	NA	NA

Note: Particulate matter (PM10) = particulate matter with aerodynamic diameter less than or equal to 10 micrometers.
NA = Not applicable, i.e., no standard exists.

[a] On July 18, 1997, EPA promulgated revised AAQS for particulate matter and ozone. For particulate matter, PM2.5 standards were introduced with a 24-hour standard of 65 ($\mu g/m^3$ (3-year average of 98th percentile) and an annual standard of 15 $\mu g/m^3$ (3-year average at community monitors). Implementation of these standards are many years away. The ozone standard was modified to be 0.08 ppm for 8-hour average; achieved when 3-year average of 99th percentile is 0.08 ppm or less. FDEP has not yet adopted these standards.

[b] Short-term maximum concentrations are not to be exceeded more than once per year.

[c] Achieved when the expected number of days per year with concentrations above the standard is fewer than 1.

[d] Maximum concentrations.

Sources: Federal Register, Vol. 43, No. 118, June 19, 1978. 40 CFR 50. 40 CFR 52.21. Rule 62-204, F.A.C.

2.0 PROJECT DESCRIPTION

2.1 SITE DESCRIPTION

The G-P Palatka Mill is located in Palatka, Putnam County, Florida. A site map of the area, showing the plant property boundaries, is provided in Figure 2-1. The G-P Palatka Mill consists of a Kraft pulp and paper mill which has three power boilers (1 natural-gas fired; 2 No. 6 fuel oil-fired), a recovery boiler and smelt dissolving tank, a lime kiln, a total reduced sulfur (TRS) incinerator, and a combination bark/oil-fired boiler.

2.2 G-P PALATKA EMISSIONS

The maximum short-term (hourly) and annual (long-term) emissions for all permitted point sources of PM_{10}, SO_2, nitrogen oxides (NO_x) and CO located at the G-P Palatka Mill are presented in Table 2-1. The basis for the maximum emissions are the permitted emission rates, or maximum calculated emission rates, based on permitted operational rates.

Baseline emissions for the G-P Palatka Mill, for purposes of calculating PSD increment consumption, are presented in Table 2-2. For SO_2 and PM_{10}, the major source baseline date is January 6, 1975; for NO_x it is March 8, 1988. The 1974 PSD baseline emissions were obtained from previous air modeling studies performed for the G-P Palatka Mill. The 1988 baseline emissions for NO_x were obtained directly from the 1988 Annual Operating Report submitted to FDEP by G-P.

2.3 SITE LAYOUT AND STRUCTURES

A plot plan of the G-P Palatka facility, showing stack locations, is presented in Figure 2-2. The dimensions of the major buildings and structures at the facility are presented in Section 4.0.

2.4 STACK PARAMETERS

Stack parameters for both the future case and the PSD baseline case are presented in Table 2-3.

Table 2-1. Maximum Future Emissions Used in the Modeling Analysis for Georgia-Pacific, Palatka

Emission Unit	Unit ID	PM/PM$_{10}$ (lb/hr)	PM/PM$_{10}$ (g/s)	CO (lb/hr)	CO (g/s)	SO_2 (lb/hr)	SO_2 (g/s)	NO_x (lb/hr)	NO_x (g/s)
Short-Term Emissions									
New Bleach Plant	BLCH	--	--	63.4	7.99	--	--	--	--
TRS Incinerator	TRS	5.5	0.69	0.2	0.03	600.0	75.60	--	--
No. 4 Recovery Boiler	RB4	75.6	9.53	1,025.4	129.20	109.9	13.85	--	--
No. 4 Smelt Dissolving Tank	SDT4	12.6	1.59	--	--	7.9	1.00	--	--
No. 4 Lime Kiln	LK4	26.0	3.28	7.3	0.92	10.9	1.37	--	--
No. 4 Power Boiler	PB4	26.0	3.28	4.5	0.57	359.0	45.23	--	--
No. 5 Power Boiler	PB5	51.9	6.53	19.5	2.46	1,564.5	197.13	--	--
No. 6 Power Boiler	PB6	3.3	0.42	8.1	1.02	11.1	1.40	--	--
No. 4 Combination Boiler	CB4	125.6	15.83	774.7	97.61	1,151.0	145.03	--	--
TOTALS		326.5	41.1	1,903.1	239.8	3,814.3	480.6	--	--
Long-Term Emissions									
New Bleach Plant	BLCH	--	--	63.4	7.99	--	--	--	--
TRS Incinerator	TRS	5.5	0.69	0.2	0.03	383.0	48.26	1.7	0.22
No. 4 Recovery Boiler	RB4	75.6	9.53	1,025.4	129.20 [a]	109.9	13.85	168.5	21.23
No. 4 Smelt Dissolving Tank	SDT4	12.6	1.59	--	--	7.9	1.00	15.8	1.99
No. 4 Lime Kiln	LK4	26.0	3.28	7.3	0.92	10.9	1.37	50.3	6.34
No. 4 Power Boiler	PB4	26.0	3.28	4.5	0.57	359.0	45.23	42.0	5.29
No. 5 Power Boiler	PB5	51.9	6.53	19.5	2.46	1,564.5	197.13	183.4	23.11
No. 6 Power Boiler	PB6	3.3	0.42	8.1	1.02	11.1	1.40	48.8	6.15
No. 4 Combination Boiler	CB4	125.6	15.83	774.7	97.61	1,151.0	145.03	131.6	16.58
TOTALS		326.5	41.1	1,903.1	239.8	3,597.3	453.3	642.1	80.9

[a] For No. 4 Recovery Boiler CO emissions, represents maximum 8-hr emissions.

Table 2-2. Maximum Baseline Emissions Used in the Modeling Analysis for Georgia-Pacific, Palatka

Emission Unit	Unit ID	PM/PM_{10} (1974)		SO_2 (1974)		NOx (1988)	
		Short-Term Emissions					
		(lb/hr)	(g/s)	(lb/hr)	(g/s)	–	–
No. 1 Recovery Boiler	RB1	78.8	9.93	49.3	6.21	–	–
No. 2 Recovery Boiler	RB2	100.7	12.69	70.5	8.88	–	–
No. 3 Recovery Boiler	RB3	109.0	13.73	68.1	8.58	–	–
No. 4 Recovery Boiler	RB4	166.5	20.98	277.5	34.97	–	–
No. 1 Smelt Dissolving Tank	SDT1	2.4	0.30	1.0	0.13	–	–
No. 2 Smelt Dissolving Tank	SDT2	3.6	0.45	1.4	0.18	–	–
No. 3 Smelt Dissolving Tank	SDT3	3.3	0.42	1.4	0.18	–	–
No. 4 Smelt Dissolving Tank	SDT4	40.8	5.14	5.6	0.71	–	–
No. 1 Lime Kiln	LK1	180.0	22.68	1.9	0.24	–	–
No. 2 Lime Kiln	LK2	95.0	11.97	1.9	0.24	–	–
No. 3 Lime Kiln	LK3	93.0	11.72	3.8	0.48	–	–
No. 4 Lime Kiln	LK4	31.6	3.98	11.1	1.40	–	–
No. 4 Power Boiler	PB4	26.0	3.28	358.9	45.22	–	–
No. 5 Power Boiler	PB5	46.4	5.85	1,279.0	161.15	–	–
No. 4 Combination Boiler	CB4	711.8	89.69	962.5	121.28	–	–
TOTALS		1,688.9	212.80	3,093.9	389.83	–	–
		Long-Term Emissions					
		(TPY)	(g/s)	(TPY)	(g/s)	(TPY)	(g/s)
No. 1 Recovery Boiler	RB1	345	9.92	216	6.21	–	–
No. 2 Recovery Boiler	RB2	441	12.69	309	8.89	–	–
No. 3 Recovery Boiler	RB3	477	13.72	298	8.57	–	–
No. 4 Recovery Boiler	RB4	729	20.97	1,215	34.95	392.1	11.28
No. 1 Smelt Dissolving Tank	SDT1	11	0.32	4	0.12	–	–
No. 2 Smelt Dissolving Tank	SDT2	16	0.46	6	0.17	–	–
No. 3 Smelt Dissolving Tank	SDT3	14	0.40	6	0.17	–	–
No. 4 Smelt Dissolving Tank	SDT4	193	5.55	25	0.72	0.0	0.0
No. 1 Lime Kiln	LK1	783	22.52	8	0.23	–	–
No. 2 Lime Kiln	LK2	415	11.94	8	0.23	–	–
No. 3 Lime Kiln	LK3	407	11.71	17	0.49	–	–
No. 4 Lime Kiln	LK4	54.6	1.57	49	1.40	249.4	7.17
No. 4 Power Boiler	PB4	105	3.02	1,192	34.29	113.1	3.25
No. 5 Power Boiler	PB5	186	5.35	4,658	134.00	560.3	16.12
No. 4 Combination Boiler	CB4	2,561	73.67	1,008	29.00	313.6	9.02
TOTALS		6,737.6	193.82	9,019	259.44	1,628.5	46.8

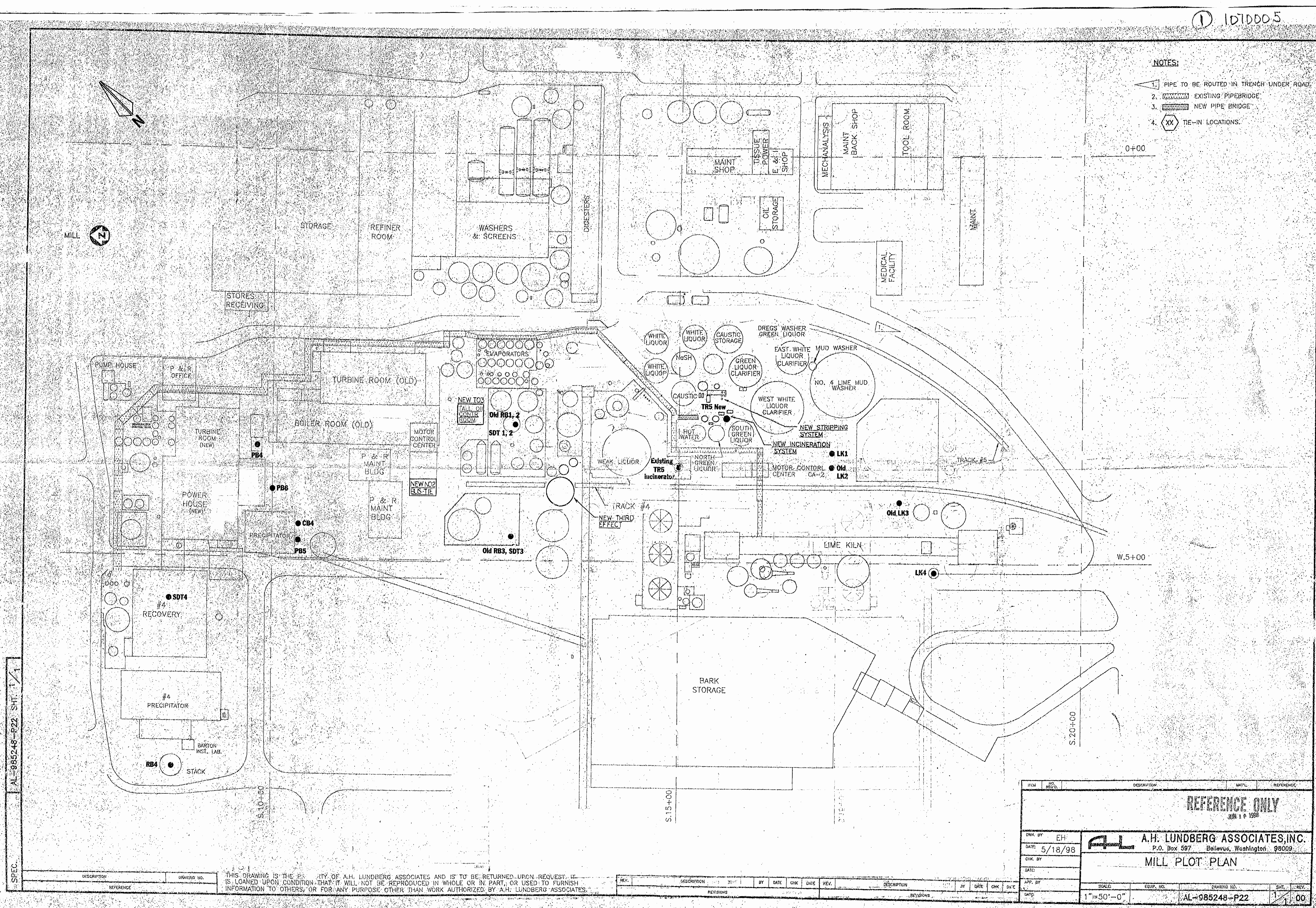
References:
1974 Baseline: Air Quality Impact Analysis of TRS Incinerator. 1987. KBN Engineering and Applied Sciences, Inc.
1988 Baseline: Annual Operating Report submitted to FDEP for 1988.

Table 2-3. Stack Parmameters and Locations Used in the Modeling Analysis, Georgia-Pacific, Palatka

Emission Unit	Unit ID	Relative Location [a] X (ft)	X (m)	Y (ft)	Y (m)	Stack Parameters Height (ft)	Height (m)	Diameter (ft)	Diameter (m)	Operating Parameters Temperature (°F)	Temperature (°K)	Velocity (ft/s)	Velocity (m/s)
Future Conditions													
Existing TRS Incinerator	TRS	0	0	0	0	250	76.2	3.08	0.94	500	533	105.1	32.03
No. 4 Recovery Boiler	RB4	-630	-192	300	91	230	70.1	12.00	3.66	400	478	63.7	19.42
No. 4 Smelt Dissolving Tanks	SDT4 [b]	-475	-145	415	126	206	62.8	5.00	1.52	160	344	21.2	6.46
No. 4 Lime Kiln	LK4	70	21	-320	-98	131	39.9	4.42	1.35	150	339	60.8	18.53
No. 4 Power Boiler	PB4	-265	-81	435	133	200	61.0	4.00	1.22	395	475	71.6	21.82
No. 5 Power Boiler	PB5	-332	-101	330	101	232	70.7	9.00	2.74	445	503	60.6	18.47
No. 4 Combination Boiler	CB4	-313	-95	340	104	237	72.2	8.00	2.44	440	500	71.8	21.88
No. 6 Power Boiler	PB6	-298	-91	390	119	60	18.3	6.00	1.83	660	622	57.2	17.43
New Bleach Plant	BLCH	359	109	464	141	118	36.0	4.00	1.22	150	339	30.5	9.30
NOx PSD Baseline (1988) Conditions													
Existing TRS Incinerator	TRS	0	0	0	0	250	76.2	3.08	0.94	500	533	105.1	32.03
No. 4 Recovery Boiler	RB4	-630	-192	300	91	230	70.1	12.00	3.66	400	478	63.7	19.42
No. 4 Smelt Dissolving Tanks	SDT4 [b]	-475	-145	415	126	206	62.8	5.00	1.52	160	344	21.2	6.46
No. 4 Lime Kiln	LK4	70	21	-320	-98	131	39.9	4.42	1.35	150	339	60.8	18.53
No. 4 Power Boiler	PB4	-265	-81	435	133	122	37.2	4.00	1.22	395	475	71.6	21.82
No. 5 Power Boiler	PB5	-332	-101	330	101	232	70.7	9.00	2.74	445	503	60.6	18.47
No. 4 Combination Boiler	CB4	-313	-95	340	104	237	72.2	8.00	2.44	440	500	71.8	21.88
PM/SO2 PSD Baseline (1974) Conditions													
No. 1 Recovery Boiler	RB1	-70	-21	190	58	250	76.2	12.0	3.66	188	360	28.9	8.80
No. 2 Recovery Boiler	RB2	-70	-21	190	58	250	76.2	12.0	3.66	210	372	28.9	8.80
No. 3 Recovery Boiler	RB3	-183	-56	118	36	133	40.5	11.2	3.41	210	372	23.9	7.28
No. 4 Recovery Boiler	RB4	-630	-192	300	91	230	70.1	12.0	3.66	394	474	55.3	16.86
No. 1 Smelt Dissolving Tank	SDT1	-70	-21	190	58	100	30.5	2.5	0.76	199	366	24.7	7.53
No. 2 Smelt Dissolving Tank	SDT2	-70	-21	190	58	100	30.5	3.0	0.91	215	375	31.2	9.51
No. 3 Smelt Dissolving Tank	SDT3	-183	-56	118	36	109	33.2	2.5	0.76	205	369	11.7	3.57
No. 4 Smelt Dissolving Tanks	SDT4	-475	-145	415	126	206	62.8	5.0	1.52	163	346	27.1	8.26
No. 1 Lime Kiln	LK1	120	37	-143	-44	50	15.2	4.2	1.28	262	401	17.2	5.24
No. 2 Lime Kiln	LK2	105	32	-150	-46	52	15.9	5.6	1.71	154	341	35.0	10.67
No. 3 Lime Kiln	LK3	107	33	-242	-74	52	15.9	5.6	1.71	156	342	27.8	8.47
No. 4 Lime Kiln	LK4	67	20	-318	-97	149	45.4	4.3	1.31	172	351	54.0	16.46
No. 4 Power Boiler	PB4	-265	-81	435	133	122	37.2	4.0	1.22	399	477	47.7	14.54
No. 5 Power Boiler	PB5	-332	-101	330	101	232	70.7	9.0	2.74	476	520	52.4	15.97
No. 4 Combination Boiler	CB4	-313	-95	340	104	237	72.2	10.0	3.05	399	477	34.5	10.52

[a] Relative to TRS Incinerator stack location and true north

[b] Source has two stacks. Location is centroid.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NOTES:
1. PIPE TO BE ROUTED IN TRENCH UNDER ROAD.
2. EXISTING PIPEBRIDGE
3. NEW PIPE BRIDGE
4. XX TIE-IN LOCATIONS.
N
MILL N
STORAGE
REFINER ROOM
WASHERS & SCREENS
DIGESTERS
STORES RECEIVING
MAINT SHOP
TISSUE POWER
E & I SHOP
OIL STORAGE
MECHANALYSIS
MAINT BACK SHOP
TOOL ROOM
MAINT
MEDICAL FACILITY
0+00
PUMP HOUSE
P & R OFFICE
EVAPORATORS
TURBINE ROOM (OLD)
BOILER ROOM (OLD)
TURBINE ROOM (NEW)
MOTOR CONTROL CENTER
P & R MAINT BLDG
P & R MAINT BLDG
NEW TO3
TALL OIL CONTR ROOM
NEW NO2 BUS TIE
Old RB1, 2
SDT 1, 2
PB4
PB6
CB4
PB5
POWER HOUSE (NEW)
PRECIPITATOR
Old RB3, SDT3
NEW THIRD EFFECT
TRACK #4
WHITE LIQUOR
WHITE LIQUOR
CAUSTIC STORAGE
WHITE LIQUOR
NaSH
GREEN LIQUOR CLARIFIER
DREGS WASHER GREEN LIQUOR
EAST WHITE LIQUOR CLARIFIER
MUD WASHER
NO. 4 LIME MUD WASHER
CAUSTIC
TR5 New
WEST WHITE LIQUOR CLARIFIER
HOT WATER
SOUTH GREEN LIQUOR
NEW STRIPPING SYSTEM
NEW INCINERATION SYSTEM
WEAK LIQUOR
Existing TR5 Incinerator
NORTH GREEN LIQUOR
MOTOR CONTORL CENTER CA-2
LK1
Old LK2
TRACK #5
Old LK3
LIME KILN
W.5+00
LK4
SDT4
#4 RECOVERY
#4 PRECIPITATOR
BARTON INST. LAB.
RB4
STACK
BARK STORAGE
S.10+00
S.15+00
S.20+00
AL-985248-P22 SHT. 1/1
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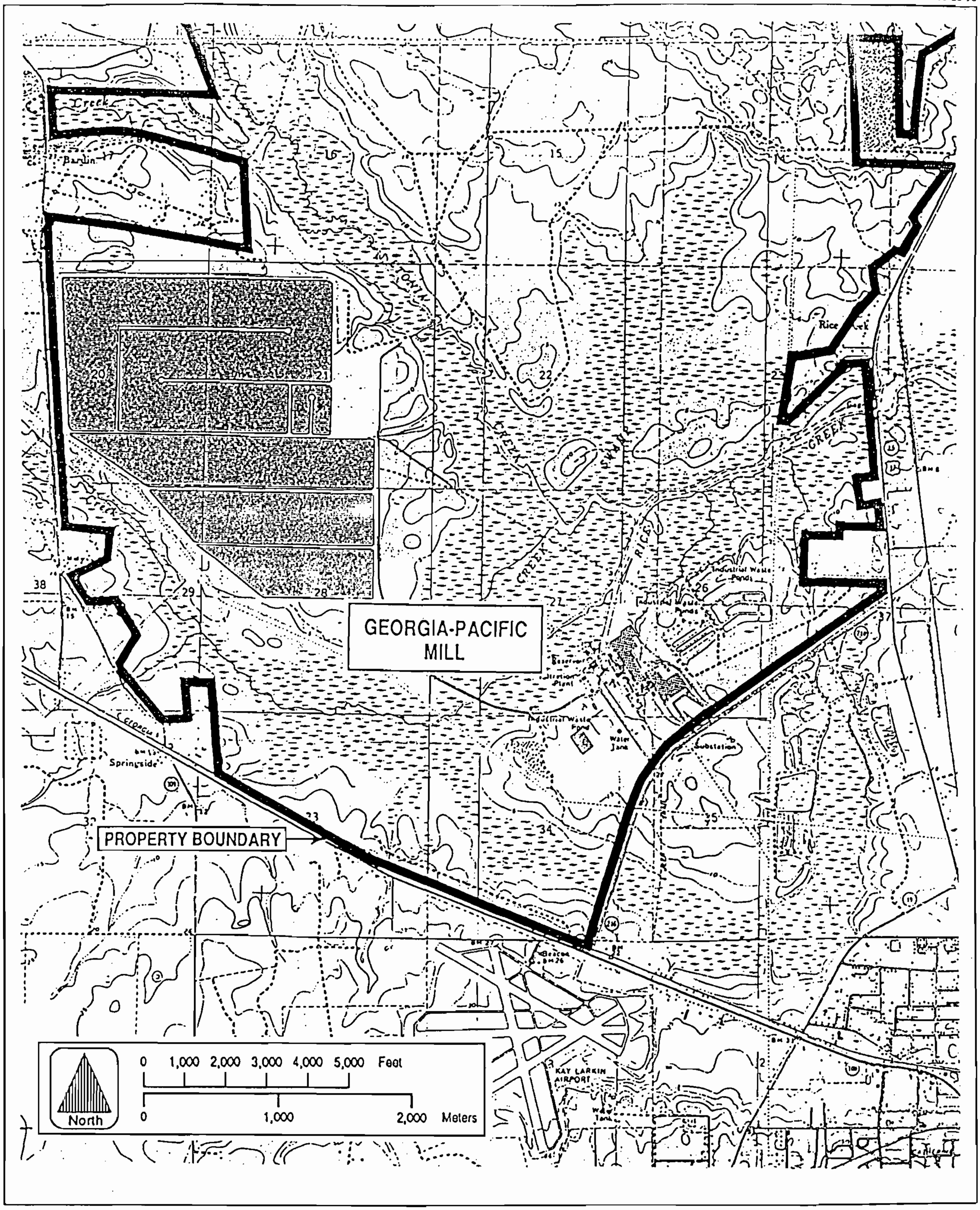

Figure 2-1.

Site Map: Georgia-Pacific Corporation

Palatka Mill

Golder Associates

3.0 AMBIENT MONITORING ANALYSIS

Background concentrations are necessary to determine total ambient air quality impacts to demonstrate compliance with the AAQS. "Background concentrations" are defined as concentrations due to sources other than those specifically included in the modeling analysis. For all pollutants, background would include other point sources not included in the modeling (i.e., distant sources or small sources), fugitive emission sources, and natural background sources.

3.1 PM_{10} AMBIENT BACKGROUND CONCENTRATIONS

Presented in Table 3-1 is a summary of existing ambient PM_{10} data for monitors located in the vicinity of the G-P Palatka Mill. Data are presented for the last year of record, 1998. As shown, only one PM_{10} monitor was operational in the vicinity of Palatka during this period. The monitoring data show that ambient PM_{10} concentrations were well below the ambient air quality standards of 150 $\mu g/m^3$ (maximum 24-hour average) and 50 $\mu g/m^3$ (annual average) at all sites. The second highest recorded 24-hour concentration was 58 $\mu g/m^3$, and the maximum annual average concentration was 26 $\mu g/m^3$.

For purposes of an ambient PM_{10} background concentration for use in the modeling analysis, the annual average PM_{10} concentration of 26 $\mu g/m^3$, recorded at the Palatka monitor during 1998, was selected. This concentration was utilized for both the 24-hour and annual average background PM_{10} concentrations in the air modeling analysis since the existing G-P Palatka Mill impacts this monitor. Other major point sources of PM_{10} in the area, including Seminole Electric and FPL Putnam, are also included explicitly in the modeling analysis. Therefore, this monitor would be influenced significantly by point sources that are already included in the modeling analysis and would, therefore, represent a more reasonable estimate of actual background concentrations.

3.2 SO_2 AMBIENT BACKGROUND CONCENTRATIONS

Presented in Table 3-2 is a summary of existing ambient SO_2 data for monitors located in the vicinity of the G-P Palatka Mill. Data are presented for the last year of record, 1997. As shown, two SO_2 monitors were operational in the vicinity of Palatka during this period. These stations were not operated in 1998.

The monitoring data show that ambient SO_2 concentrations were well below the ambient air quality standards of 1,300 $\mu g/m^3$, maximum 3-hour average; 260 $\mu g/m^3$, maximum 24-hour average; and 60 $\mu g/m^3$, annual average at both sites. The second highest recorded 24-hour concentration was 40 $\mu g/m^3$, and the annual average concentration was 6 $\mu g/m^3$.

For purposes of an ambient SO_2 background concentration for use in the modeling analysis, the annual average SO_2 concentration of 6 $\mu g/m^3$ recorded at the highest Palatka monitor during 1997 was selected. This concentration was utilized for both 3-hour, 24-hour and annual average background SO_2 concentrations in the air quality impact analysis since the existing G-P Palatka Mill impacts this monitor, which is included explicitly in the modeling analysis. Other major point sources of SO_2 in the area, such as Seminole Electric and FPL Putnam, are also included explicitly in the modeling analysis. Therefore, this monitor would be influenced significantly by point sources that are already accounted for in the modeling analysis and would represent a more reasonable estimate of the actual background concentrations.

3.3 CO AMBIENT BACKGROUND CONCENTRATIONS

Presented in Table 3-3 is a summary of existing continuous ambient CO data for monitors located in the area of Palatka. Data are presented for the last year of record, 1998. As shown, no CO monitors were operational in the vicinity of Palatka during this period. The nearest CO monitoring stations were located in Jacksonville. Although several CO monitoring stations are located in Jacksonville, the station exhibiting the lowest CO levels was selected for use, since this would be more representative of levels in Palatka.

The CO monitoring data show that ambient CO concentrations were well below the ambient air quality standards of: 35 ppm (40,000 $\mu g/m^3$) (maximum 1-hour average); and 9 ppm (10,000 $\mu g/m^3$) (maximum 8-hour average). The monitor in Jacksonville is not considered to be representative of the Palatka area due to the distance this monitor is from Palatka, but is the closest monitoring station.

For purposes of an ambient CO background concentration for use in the modeling analysis, the second highest 1-hour CO concentration of 5,333 $\mu g/m^3$ and the second highest 8-hour concentration of 3,222 $\mu g/m^3$, recorded at the Jacksonville monitor during 1998 was selected. These concentrations are very conservative since this monitor is impacted by significant mobile sources in Jacksonville, while Palatka has relatively little mobile traffic.

3.4 NO_X AMBIENT BACKGROUND CONCENTRATIONS

Presented in Table 3-4 is a summary of existing continuous ambient NO_x data for monitors located in the area of Palatka. Data are presented for the last year of record, 1998. As shown, no NO_x monitors were operational in the vicinity of Palatka during this period. The nearest NO_x monitoring stations were located in Jacksonville.

The NO_x monitoring data show that ambient NO_x concentrations were well below the ambient air quality standard of 100 $\mu g/m^3$ annual average. The monitor in Jacksonville is not considered to be representative of the Palatka area due to the distance this monitor is from Palatka, but is the closest monitoring station to Palatka.

For purposes of an ambient NO_x background concentration for use in the modeling analysis, the annual average concentration of 28 $\mu g/m^3$, recorded at the Jacksonville monitor during 1998, was selected. This concentration is very conservative since this monitor is impacted by significant mobile sources in Jacksonville, while Palatka has relatively little mobile traffic.

Table 3-1. Summary of PM_{10} Ambient Monitoring Data Collected Near Palatka

Year	County	Station ID	Monitor Location	Number of Daily Observations	Concentration ($\mu g/m^3$) Maximum 24-Hour	2nd-High 24-Hour	3rd-High 24-Hour	Annual Average
1998	Putnam	12-107-0008	Palatka - Comfort and Port Roads	63	136	58	47	26

Note: $\mu g/m^3$ = micrograms per cubic meter.

Table 3-2. Summary of Sulfur Dioxide Ambient Monitoring Data Collected Near Palatka

					Concentration ($\mu g/m^3$)				
Year	County	Station ID	Monitor Location	Number of Hourly Observations	Maximum 3-Hour	2nd High 3-Hour	Maximum 24-Hour	2nd-High 24-Hour	Annual Average
1997	Putnam	3780-007-JOL	Palatka-West River Rd. & SR 17	8,402	196	177	34	32	4
	Putnam	3780-008-FOZ	100 ft west of Comfort and Port Roads	8,623	255	181	44	40	6

Note: $\mu g/m^3$ = micrograms per cubic meter.

Table 3-3. Summary of Carbon Monoxide Ambient Monitoring Data Collected Near Palatka

					Concentration ($\mu g/m^3$)			
Year	County	Station ID	Monitor Location	Number of Hourly Observations	Maximum 1-Hour	2nd-High 1-Hour	Maximum 8-Hour	2nd-High 8-Hour
1998	Duval	12-031-0083	Jacksonville-1200 S. McDuff Ave	8,013	5,444 (4.9 ppm)	5,333 (4.8 ppm)	3,444 (3.1 ppm)	3,222 (2.9 ppm)

Note: ppm = parts per million.
1 ppm = 1,111 $\mu g/m^3$.
$\mu g/m^3$ = micrograms per cubic meter.

Table 3-4. Summary of Continuous NO_x Ambient Monitoring Data Collected Near Palatka

Year	County	Station ID	Monitor Location	Number of Hourly Observations	Concentration ($\mu g/m^3$) Annual Average
1998	Duval	12-031-0032	Jacksonville-2900 Bennett St.	8,204	28 (0.015 ppm)

Note: ppm = parts per million.
0.053 ppm = 100 $\mu g/m^3$.
$\mu g/m^3$ = micrograms per cubic meter.

4.0 AIR QUALITY IMPACT ANALYSIS METHODOLOGY

4.1 AIR MODELING ANALYSIS APPROACH

An air quality impact analysis of the G-P Palatka Mill was conducted for four pollutants for which AAQS have been set: SO_2, NO_2, PM_{10}, and CO. The air quality modeling analysis was performed using the Industrial Source Complex Short-Term (ISCST3) model, Version 98356, currently recommended for regulatory applications, to assess maximum ground-level impacts due to the G-P Palatka Mill and other sources in the area. The analysis followed EPA and FDEP modeling guidelines for assessing compliance with the AAQS and PSD increments.

The impact analysis used screening and refinement phases to determine the maximum pollutant impacts associated with the G-P facility. The difference between the two modeling phases is the density of the receptor grid spacing used when predicting concentrations. Concentrations are predicted for the screening phase using a coarse (i.e., large spacing) receptor grid and a 5-year meteorological data record. In this analysis, the receptor grid consisted of a polar receptor grid with a 10-degree angular spacing between receptors.

Refinements of the maximum predicted concentrations from the screening phase are typically performed in the vicinity of the receptors of the screening receptor grid at which the highest predicted concentrations occurred over the 5-year period. Generally, if maximum concentrations predicted in another year are within 10 percent of the overall maximum concentration predicted for the 5-year period, then the other concentrations are refined as well. Modeling refinements are performed to determine maximum concentrations with a receptor grid spacing of 100 meters (m) or less.

The domain of a refined receptor grid will generally extend to all adjacent screening receptors surrounding a particular screening grid receptor. The air dispersion model is then executed with the refined grid for the entire year of meteorology during which the maximum concentration in the screening phase occurred. This approach is used to ensure that a valid maximum concentration is obtained.

Because the G-P Palatka Mill is located approximately 111 and 179 km, respectively, from the Okefenokee national Wildlife Refuge (ONWR) and the Wolf Island NWR (WINWR) PSD Class I areas, an increment analysis was conducted at these two areas.

A more detailed description of the model, along with the emission inventory, meteorological data, and screening receptor grids, is presented in the following sections.

4.2 AAQS AND PSD CLASS II INCREMENT ANALYSES

In general, when 5 years of meteorological data are used, the highest annual and the highest, second-highest (H2H) short-term concentrations are to be compared to the applicable AAQS and allowable PSD Class II increments. The H2H is calculated for a receptor field by:

1. Eliminating the highest concentration predicted at each receptor,
2. Identifying the second-highest concentration at each receptor, and
3. Selecting the highest concentration among these second-highest concentrations.

This approach is consistent with most air quality standards and all allowable PSD increments, which permit a short-term average concentration to be exceeded once per year at each receptor.

For the AAQS analysis, the future emissions of the plant site are modeled together with background emission facilities. Additionally, a non-modeled background concentration is added to the maximum predicted air quality to determine a total air quality concentration. The maximum annual and H2H short-term total concentrations are compared to the AAQS.

For the PSD Class II increment analysis, the PSD increment consuming and expanding sources at the G-P Palatka Mill site are modeled with background PSD consuming or expanding sources. The maximum annual and H2H short-term PSD increment are compared to the allowable PSD Class II increments.

4.3 PSD CLASS I INCREMENT ANALYSIS

For PM_{10}, SO_2 and NO_2, which have established PSD Class I allowable increments, a detailed PSD increment analysis was preformed at the PSD Class I area. For the PSD Class I increment analysis, the PSD increment consuming and expanding sources at the G-P Palatka site are modeled along with other background PSD consuming or expanding sources within 100-150 miles from the PSD Class I area. The maximum annual and H2H short-term concentrations are compared to the allowable PSD Class I increments.

4.4 MODEL SELECTION

The ISCST3 dispersion model (Version 98356) was used to evaluate all pollutant impacts. This model is currently available on the EPA's Internet web site, Support Center for Regulatory Air Models (SCRAM), within the Technical Transfer Network (TTN). A listing of ISCST3 model features is presented in Table 4-1. The ISCST3 model is designed to calculate hourly concentrations based on hourly meteorological data (i.e., wind direction, wind speed, atmospheric stability, ambient temperature, and mixing heights). The ISCST3 model is applicable to sources located in either flat or rolling terrain where terrain heights do not exceed stack heights. These areas are referred to as simple terrain. The model can also be applied in areas where the terrain exceeds the stack heights. These areas are referred to as complex terrain.

Since the terrain surrounding the G-P Palatka Mill is flat, the modeling analysis assumed that all receptors were at the base elevation of the facility (i.e., flat terrain assumption in ISCST3).

In this analysis, the EPA regulatory default options were used to predict all maximum impacts. The ISCST3 model can run in the rural or urban land use mode, which affects stability dispersion coefficients, wind speed profiles, and mixing heights. Land use can be characterized based on a scheme recommended by EPA (Auer, 1978). If more than 50 percent of the land use within a 3-km radius circle around a project is classified as industrial or commercial, or high-density residential, then the urban option should be selected. Otherwise, the rural option is appropriate. Based on reviews of aerial and U.S. Geological Survey (USGS) topographical maps and a site visit, the land use within a 3-km (1.9-mile) radius of the G-P Palatka Mill site is considered to be rural (i.e., very little heavy industrial, light-moderate industrial, commercial, or compact residential land use categories). Therefore, the rural mode was used in the air dispersion model to predict impacts from the G-P Palatka Mill and other emission sources considered in the modeling analysis.

The ISCST3 model was used to predict maximum pollutant concentrations for averaging the annual and 24-hour, 8-hour, 3-hour, and 1-hour averaging periods. The predicted concentrations were then compared to applicable significant impact levels, monitoring *de minimis* levels, allowable PSD increments, and the AAQS.

4.5 METEOROLOGICAL DATA

Meteorological data used in the ISCST3 model to determine air quality impacts consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) offices located at the Jacksonville International Airport (JAX) and Waycross, GA, respectively. Concentrations were predicted using 5 years of hourly meteorological data from 1984 through 1988. The NWS office at JAX is located approximately 91 km (56 miles) north of the site and is the closest primary weather station to the study area considered to have meteorological data representative of the project site. The JAX station meteorological data have been used for previous air modeling studies for the G-P Palatka Mill.

The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling height. The wind speed, cloud cover, and cloud ceiling values were used in the ISCST3 meteorological preprocessor program to determine atmospheric stability using the Turner stability scheme. Based on the temperature measurements at morning and afternoon, mixing heights were calculated from the radiosonde data at Waycross, GA using the Holzworth approach (Holzworth, 1972). Hourly mixing heights were derived from the morning and afternoon mixing heights using the interpolation method developed by EPA (Holzworth, 1972). The hourly surface data and mixing heights were used to develop a sequential, hourly meteorological data set (i.e., wind direction, wind speed, temperature, stability, and mixing heights). Because the observed hourly wind directions at the NWS stations are classified into one of thirty-six 10-degree sectors, the wind directions were randomized within each sector to account for the expected variability in air flow. These calculations were performed using the EPA RAMMET meteorological preprocessor program.

4.6 EMISSION INVENTORY

4.6.1 G-P PALATKA MILL

The maximum emissions for the G-P Palatka Mill for the future operating condition are summarized in Table 2-1. The PSD baseline emissions for PM_{10}, SO_2 and NO_x are presented in Table 2-2. Future and baseline stack parameters and source locations are presented in Table 2-3.

It is noted, based upon the ISCST3 model, G-P will raise the stack height of the No. 4 Power Boiler from the current 122 feet to a new height of 200 feet. This will insure that the predicted ISCST3 model and SO_2 concentrations do not exceed the AAQS for SO_2 in the vicinity of the G-P plant.

4.6.2 OTHER EMISSION SOURCES

The emission inventories for other non-G-P facilities were developed mainly from data bases from previous air modeling studies performed by Golder Associates for G-P

Palatka, from the recent JEA Northside application, and from air permit data. For the AAQS and PSD Class II increment analysis, only other major sources located in Putnam County were included. Due to the relatively large distance of other facilities from the G-P site, these other facilities were assumed to be included in the background air quality concentrations for purposes of predicting total ambient air impacts.

Sulfur Dioxide

A summary of all facilities, their locations with respect to the G-P Palatka Mill, and their SO_2 emissions is provided in Table 4-2. The Seminole Electric and FP&L Putnam and Palatka facilities are the only major sources located in Putnam County. As a result, these facilities were included in the AAQS and PSD Class II increment air modeling analyses. The individual source emissions, stack, and operating parameters for the AAQS and PSD Class II modeling analyses were developed and are presented in Table 4-3.

A PSD Class I increment modeling analysis is required for SO_2. The facilities that were considered in the PSD Class I increment analysis are presented in Tables 4-4 and 4-5. All PSD increment consuming or expanding sources within these facilities are included in the analysis.

Each source listed in Table 4-5 includes a description of the source, the ID name of the source used in the air modeling analysis, and whether the source consumes or expands PSD increment. Facilities with PSD-affecting sources may have PSD baseline sources. PSD baseline source emissions and stack configurations no longer exist but were in effect during the SO_2 PSD baseline period of 1974-75. These sources expand PSD increment and are represented in the PSD increment air modeling analyses as negative emission sources.

Particulate Matter

A summary of all major PM_{10} emitting facilities located in Putnam County, their locations with respect to the G-P Palatka Mill, and their PM emissions are provided in Table 4-6.

The individual source emissions, stack, and operating parameters for the AAQS and PSD Class II modeling analyses were developed and are presented in Table 4-7.

A PSD Class I increment modeling analysis is required for PM_{10}. The sources that were included in the analysis are presented in Table 4-8. All PSD increment consuming or expanding sources within these facilities are included in the analysis. Each source listed in Table 4-8 includes a description of the source, the ID name of the source used in the air modeling analysis, and an indication of whether the source consumes or expands PSD increment. Facilities with PSD-affecting sources may have baseline sources. Baseline sources may no longer operate but did operate during the PM_{10} PSD baseline period of 1974-75. These sources expand PSD increment and are represented in the PSD increment air modeling analyses as negative emission sources.

Carbon Monoxide

No other facilities were considered in the CO AAQS analysis. The conservatively high CO background concentration developed (see Section 3.0) provides an adequate background representing other CO emission sources in the Putnam County area.

Nitrogen Oxides

A summary of all major NO_x emitting facilities located in Putnam County, their locations with respect to the G-P Palatka Mill, and their NO_x emissions are provided in Table 4-9. The individual source emissions, stack, and operating parameters for the AAQS modeling analysis were developed and are presented in Table 4-10.

A PSD Class I increment modeling analysis is required for NO_x. The facilities that were considered in the PSD Class I increment analysis are presented in Table 4-11. All PSD increment consuming or expanding sources within these facilities are included in the analysis. Each source listed in Table 4-11 includes a description of the source, the ID name of the source used in the air modeling analysis, and an indication of whether the source consumes or expands PSD increment. The NO_2 PSD baseline period is 1988.

Sources that expand PSD increment are represented in the PSD increment air modeling analyses as negative emission sources.

4.7 BUILDING DOWNWASH EFFECTS FOR G-P PALATKA MILL

Based on the building dimensions associated with buildings and structures at the plant, all stacks at the G-P Palatka Mill will comply with the good engineering practice (GEP) stack height regulations. However, these stacks are less than GEP height. Therefore, the potential for building downwash to occur was considered in the air modeling analysis for these stacks.

Generally, a stack is considered to be within the influence of a building if it is within the lesser of 5 times L, where L is the lesser dimension of the building height or projected width. The ISCST3 model uses two procedures to address the effects of building downwash. For both methods, the direction-specific building dimensions are input for H_b and l_b for 36 radial directions, with each direction representing a 10-degree sector. The H_b is the building height and l_b is the lesser of the building height or projected width. For short stacks (i.e., physical stack height is less than $H_b + 0.5\,l_b$), the Schulman and Scire (1980) method is used. The features of the Schulman and Scire method are as follows:

1. Reduced plume rise as a result of initial plume dilution,
2. Enhanced plume spread as a linear function of the effective plume height, and
3. Specification of building dimensions as a function of wind direction.

For cases where the physical stack height is greater than $H_b + 0.5\,l_b$, but less than GEP, the Huber-Snyder (1976) method is used. Both downwash algorithms affect stacks that are within the influence of a building, without regard for the actual distance the stack or stack's plume is from the building during any given moment.

The building dimensions considered in the air modeling analysis for the G-P Palatka Mill are presented in Table 4-12. The location of the buildings and stacks can be found on the site plot plan (Figure 2-2). At the G-P Palatka Mill, several stacks are influenced by one or more buildings. For the modeling analysis, direction-specific building dimensions are input for H_b and l_b for 36 radial directions, with each direction representing a 10-degree sector. All direction-specific building parameters were calculated with the Building Profile Input Program (BPIP), Version 95086. The BPIP program was used to generate building data for the ISCST3 model input. A detailed listing of direction-specific building data used in the air modeling analysis is provided in Appendix A.

4.8 RECEPTOR LOCATIONS

For predicting maximum concentrations in the vicinity of the G-P Palatka Mill, an array of discrete polar receptors were used. The number of discrete receptors was 236, which included 36 receptors located along the property line of G-P Palatka Mill and 200 additional offsite receptors located at distances of 0.7, 1.1, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5 and 5.0 km from the existing TRS Incinerator stack location, the origin (i.e., 0,0) location for the air modeling analysis. A summary of the boundary receptors at G-P Palatka Mill is presented in Table 4-13.

Modeling refinements were performed, as needed, by employing a polar receptor grid with a maximum spacing of 100 m along each radial and an angular spacing between radials of 1 or 2 degrees. At a distance of less than 575 m, the angular distance between receptors is 100 m or less and additional refinements may not be performed. At distances of 600 m and beyond, modeling refinements are performed by employing an angular spacing between radials of 1 or 2 degrees and a spacing interval along radials of 100 m.

Pollutant concentrations for SO_2, PM_{10}, and NO_2 were also predicted at 10 receptors located along the southern and eastern boundaries of the ONWR PSD Class I Area, plus one additional receptor located at the WINWR. A listing of the 11 Class I receptors is presented in Table 4-14. Due to the large distance from the G-P Palatka Mill to the

ONWR and WINWR, additional receptor refinements were not performed for these areas.

4.9 BACKGROUND CONCENTRATIONS

Total air quality impacts were predicted for the AAQS analysis by adding the maximum annual and highest, second-highest short-term concentrations due to all modeled sources to estimated background concentrations. Background concentrations are concentrations due to sources not explicitly included in the modeling analysis. These concentrations consist of two components:

- Impacts due to other non-modeled emission sources (i.e., point sources not explicitly included in the modeling inventory), and
- Natural and fugitive emission sources.

The non-modeled background concentrations were obtained from air quality monitoring data, as described in Section 3.0, and are as follows:

Pollutant	Averaging Period	Background Concentration ($\mu g/m^3$)
PM_{10}	24-hour	26
	Annual	26
SO_2	3-hour	6
	24-hour	6
	Annual	6
NO_x	Annual	28
CO	8-hour	3,222
	1-hour	5,333

Table 4-1. Features of the ISCST3 Model

ISCST3 Model Features
• Polar or Cartesian coordinate systems for receptor locations
• Rural or one of three urban options which affect wind speed profile exponent, dispersion rates, and mixing height calculations
• Plume rise due to momentum and buoyancy as a function of downwind distance for stack emissions (Briggs, 1969, 1971, 1972, and 1975; Bowers, et al., 1979).
• Procedures suggested by Huber and Snyder (1976); Huber (1977); and Schulman and Scire (1980) for evaluating building wake effects
• Procedures suggested by Briggs (1974) for evaluating stack-tip downwash
• Separation of multiple emission sources
• Consideration of the effects of gravitational settling and dry deposition on ambient particulate concentrations
• Capability of simulating point, line, volume, area, and open pit sources
• Capability to calculate dry and wet deposition, including both gaseous and particulate precipitation scavenging for wet deposition
• Variation of wind speed with height (wind speed-profile exponent law)
• Concentration estimates for 1-hour to annual average times
• Terrain-adjustment procedures for elevated terrain including a terrain truncation algorithm for ISCST3; a built-in algorithm for predicting concentrations in complex terrain
• Consideration of time-dependent exponential decay of pollutants
• The method of Pasquill (1976) to account for buoyancy-induced dispersion
• A regulatory default option to set various model options and parameters to EPA recommended values (see text for regulatory options used)
• Procedure for calm-wind processing including setting wind speeds less than 1 m/s to 1 m/s.

Note: ISCST3 = Industrial Source Complex Short-Term.
Source: EPA, 1998.

Table 4-2. Summary of Competing SO_2 Facilities Included in the AAQS and PSD Class II Air Modeling Analyses

			UTM Coordinates		Relative to G-P Palatka Mill				Maximum SO_2
APIS Number	Facility	County	East (km)	North (km)	X (km)	Y (km)	Distance (km)	Direction[a] (deg)	Emissions (TPY)
31JAX540025	Seminole Power Plant[a]	Putnam	438.8	3289.2	4.8	5.8	7.5	40	75,392
31JAX540014	Florida Power & Light - Putnam[b]	Putnam	443.3	3277.6	9.3	-5.8	11.0	122	2,791
31JAX540016	Florida Power & Light - Palatka[c]	Putnam	442.8	3277.6	8.8	-5.8	10.5	123	-12,890
G-P Palatka Mill UTM Coordinates (km) (E,N):			434.0	3283.4					

[a] PSD source.

[b] Two of the four CT units (half the total plant emissions) consume PSD increment and are included in PSD increment analysis.

[c] FPL Palatka has shutdown and is only included in PSD increment analysis.

Table 4-3. Inventory of SO_2 Sources Included in the AAQS and PSD Class II Air Modeling Analyses

APIS Number	Facility	Units	ISCST3 ID Name	Stack Parameters Height (m)	Diameter (m)	Temper. (K)	Velocity (m/s)	Emission Rate (g/s)	PSD Source? (EXP/CON)	Modeled in AAQS	Class II
31JAX540025	Seminole Power Plant										
		Units 1 and 2	SEMELECT	205.7	10.97	326.5	7.99	2168.80	CON	Yes	Yes
31JAX540014	Florida Power & Light - Putnam										
		4x70Mw CT/HRSG + DB	FPLPUTNM	22.3	3.15	437.4	58.60	351.69	CON[a]	Yes	Yes
31JAX540016	Florida Power & Light - Palatka										
		Unit 2	FPLPALAT	45.7	3.96	408.1	9.50	-257.03	EXP	No	Yes

Table 4-4. SO_2 PSD Increment Affecting Facilities Considered in the PSD Class I Increment Modeling Analysis

			UTM Coordinates		Relative to Okefenokee NWA[a]			
APIS Number	Facility	County	East (km)	North (km)	X (km)	Y (km)	Distance (km)	Direction (deg)
31DVL160039	Millenium Specialty Products	Duval	435.6	3360.7	52.6	-21.3	56.7	112
31DVL160006	Anheiser Busch, Inc	Duval	440.6	3366.8	57.6	-15.2	59.6	105
31DVL1600	Cedar Bay Cogeneration	Duval	441.7	3365.6	58.7	-16.4	60.9	106
31DVL160067	Stone Container Corp	Duval	441.8	3365.6	58.8	-16.4	61.0	106
31DVL160047	JEA - Kennedy Power Plant	Duval	440.0	3359.2	57.0	-22.8	61.4	112
31JAX160001	JEA - St. Johns River Power Park	Duval	447.1	3366.7	64.1	-15.3	65.9	103
31DVL160045	JEA - Northside Power Plant	Duval	446.9	3364.8	63.9	-17.2	66.2	105
---	Gilman Paper Co. St. Mary's GA	Camden	448.2	3401.3	65.2	19.3	68.0	74
31JAX450003	Jefferson-Smurfit Corp	Nassau	456.2	3394.2	73.2	12.2	74.2	81
31JAX540025	Seminole Power Plant	Putnam	438.8	3289.2	55.8	-92.8	108.3	149
31JAX540005	Georgia-Pacific Palatka	Putnam	434.0	3283.4	51.0	-98.6	111.0	153
31JAX540014	FPL Putnam Power Plant	Putnam	443.3	3277.6	60.3	-104.4	120.6	150
31JAX540016	FPL Palatka Power Plant	Putnam	442.8	3277.6	59.8	-104.4	120.3	150

[a] Distance from southeastern corner UTM location (km) = 383.0 3382.0

Table 4-5. Summary of Competing SO_2 Sources Included in the PSD Class I Air Modeling Analysis

APIS Number	Facility	Units	ISCST3 ID Name	Stack Parameters Height (m)	Diameter (m)	Temper. (K)	Velocity (m/s)	Emission Rate (g/s)	(EXP/CON)
31JAX540025	Seminole Power Plant								
		Units 1 and 2	SEMELECT	205.7	10.97	326.5	7.99	2168.80	CON
31JAX540014	Florida Power & Light - Putnam								
		4x70Mw CT/HRSG + DB	FPLPUTNM	22.3	3.15	437.4	58.60	351.69	CON[a]
31JAX540016	Florida Power & Light - Palatka								
		Unit 2	FPLPALAT	45.7	3.96	408.1	9.50	-257.03	EXP
31JAX450003	Jefferson-Smurfit Corp								
		RB5 Future stack 1	JSCRB5a	87.8	2.74	483.7	18.96	15.6	CON
		RB5 Future stack 2	JSCRB5b	87.8	2.74	483.7	18.96	15.6	CON
		RB4 Future	JSCRB4	75.9	3.75	510.9	17.96	35.1	CON
		PB5 Future	JSCPB5	78.3	3.35	497.6	18.17	253.1	CON
		PB7 Future	JSCPB7	103.6	4.51	470.4	13.44	154.4	CON
		Lime Kiln 4 Future	JSCLK4	30.8	0.94	449.8	48.59	3.37	CON
		Smelt Dissolving Tank 4 Future	JSCSDT4	75.9	1.83	340.4	5.16	0.79	CON
		Smelt Dissolving Tank 5 Future	JSCSDT5	87.8	1.22	345.4	16.77	0.9	CON
		PBs 3 & 4 1974 Baseline	JSCPB34b	69.2	2.44	483	16.86	-144.7	EXP
		PB5 1974 Baseline	JSCPB5b	69.2	3.35	480	16.25	-170	EXP
		RB4 1974 Baseline	JSCRB4b	75.9	3.51	493	18.78	-35.1	EXP
		RB3 1974 Baseline	JSCRB3b	40.8	2.74	390	13.26	-10.5	EXP
		Lime Kiln 2 1974 Baseline	JSCLK2b	13.4	1.07	361	12.25	-1.3	EXP
		Lime Kiln 3 1974 Baseline	JSCLK3b	13.4	1.37	360	17.59	-1.3	EXP
		Smelt Diss. Tank 4 1974 Baseline	JSCSDT4b	69.5	1.83	350	5.21	-0.6	EXP
		Smelt Diss. Tank 3 1974 Baseline	JSCSDT3b	33.2	0.61	360	5.82	-0.2	EXP
---	Gilman Paper Co. St. Mary's GA								
		PB3 Future	GILPB3	83.8	4.3	450	2.82	87.29	CON
		Combination Boiler Future	GILCOBLR	45.7	3.05	326	7.76	88.75	CON
		RBs 2 & 3 Future	GILRB23	54.9	2.13	425	16.76	15.2	CON
		RB4 Future	GILRB4	76.2	2.59	411	12.19	15.8	CON
		Lime Kiln Future	GILLK	30.5	1.52	350	11.64	2.13	CON
		PB1 1974 Baseline	GILPB13b	83.8	4.3	449.7	7.3	-281	EXP
		PB4 1974 Baseline	GILPB4b	36.6	1.8	699.7	20	-59.9	EXP
		RB2 1974 Baseline	GILRB2b	47.2	2.3	425.8	13.1	-7.6	EXP
		RB3 1974 Baseline	GILRB3b	53.3	1.6	394.1	25.2	-7.6	EXP
		RB4 1974 Baseline	GILRB4b	76.2	2.6	427.4	22.1	-15.8	EXP
31JAX160001	JEA - St. Johns River Power Park		SJRPP12	195.1	6.79	342	27.4	1859.6	CON

Table 4-5. Summary of Competing SO_2 Sources Included in the PSD Class I Air Modeling Analysis

APIS Number	Facility Units	ISCST3 ID Name	Stack Parameters Height (m)	Diameter (m)	Temper. (K)	Velocity (m/s)	Emission Rate (g/s)	(EXP/CON)
31DVL160039	Millenium Specialty Products							
	Future	MILLENMF	13.7	1.22	449.8	5.5	4.01	CON
	1974 Baseline	MILLENMB	12.2	1.1	658	10.1	-8.49	EXP
31DVL160006	Anheiser Busch, Inc	ANHBUSCH	6.1	0.6	811	1.8	2.14	CON
31DVL1600	Cedar Bay Cogeneration							
	CFB Boiler	CEDBYCB	129.5	4.27	402.6	33.22	241.1	CON
	Dryers	CEDBYDRY	9.1	1.04	355.4	21.34	1.26	CON
31DVL160067	Stone Container Corp							
	Package Boilers 1-3 Future	SKCPAC13	61	2.44	447	16.18	3.2	CON
	PBs 1-3 1974 Baseline	SKCPB13b	32.3	1.83	433	20.12	-200	EXP
	BB1-2 1974 Baseline	SKCBB12b	41.5	2.44	329	13.72	-114	EXP
31DVL160047	JEA - Kennedy Power Plant							
	Unit 8 1974 Baseline	JEAKEN8B	45.7	3.2	394	10.4	-75.05	EXP
31DVL160045	JEA - Northside Power Plant							
	Repowered Units 1&2	JEANS12	151	4.57	330.9	19.2	139.42	CON
	Unit 1 1974 Baseline	JEANS1B	76.2	4.87	403	23.1	-690.92	EXP
	Unit 2 1974 Baseline	JEANS2B	88.4	5	394	13.1	-584.55	EXP

Table 4-6. Summary of Competing PM_{10} Facilities Included in the AAQS and PSD Class II Air Modeling Analyses

			UTM Coordinates		Relative to G-P Palatka Mill				Maximum PM_{10}
APIS Number	Facility	County	East (km)	North (km)	X (km)	Y (km)	Distance (km)	Direction[a] (deg)	Emissions (TPY)
31JAX540025	Seminole Power Plant[a]	Putnam	438.8	3289.2	4.8	5.8	7.5	40	1,884
31JAX540014	Florida Power & Light - Putnam[b]	Putnam	443.3	3277.6	9.3	-5.8	11.0	122	1,077
31JAX540016	Florida Power & Light - Palatka[c]	Putnam	442.8	3277.6	8.8	-5.8	10.5	123	-325
G-P Palatka Mill UTM Coordinates (km) (E,N):			434.0	3283.4					

[a] PSD source.

[b] Two of the four CT units (half the total plant emissions) consume PSD increment and are included in PSD increment analysis.

[c] FPL Palatka has shutdown and is only included in PSD increment analysis.

Table 4-7. Summary of Competing PM_{10} Sources Included in the AAQS and PSD Class II Air Modeling Analyses

APIS Number	Facility	Units	ISCST3 ID Name	Stack Parameters Height (m)	Diameter (m)	Temper. (K)	Velocity (m/s)	Emission Rate (g/s)	PSD Source? (EXP/CON)	Modeled in AAQS	Class II
31JAX540025	Seminole Power Plant										
		Units 1 and 2	SEMELECT	205.7	10.97	326.5	7.99	54.20	CON	Yes	Yes
31JAX540014	Florida Power & Light - Putnam										
		4x70Mw CT/HRSG + DB	FPLPUTNM	22.3	3.15	437.4	58.60	31.00	CON[a]	Yes	Yes
31JAX540016	Florida Power & Light - Palatka										
		Unit 2	FPLPALAT	45.7	3.96	408.1	9.50	-9.35	EXP	No	Yes

[a] Half of presented emission rate (i.e., 15.5 g/s) is used for PSD Class II analysis.

Table 4-8. Summary of Competing PM_{10} Sources Included in the PSD Class I Air Modeling Analysis

APIS Number	Facility	Units	ISCST3 ID Name	Stack Parameters Height (m)	Diameter (m)	Temper. (K)	Velocity (m/s)	Emission Rate (g/s)	(EXP/CON)
31JAX540025	Seminole Power Plant								
		Units 1 and 2	SEMELECT	205.7	10.97	326.5	7.99	54.20	CON
31JAX540014	Florida Power & Light - Putnam								
		4x70Mw CT/HRSG + DB	FPLPUTNM	22.3	3.15	437.4	58.60	15.50	CON
31JAX540016	Florida Power & Light - Palatka								
		Unit 2	FPLPALAT	45.7	3.96	408.1	9.50	-9.35	EXP
31JAX450003	Jefferson-Smurfit Corp								
		RB5 Future stack 1	JSCRB5a	87.8	2.74	483.7	18.96	3.95	CON
		RB5 Future stack 2	JSCRB5b	87.8	2.74	483.7	18.96	3.95	CON
		RB4 Future	JSCRB4	75.9	3.75	510.9	17.96	13	CON
		PB5 Future	JSCPB5	78.3	3.35	497.6	18.17	11.6	CON
		PB7 Future	JSCPB7	103.6	4.51	470.4	13.44	8.6	CON
		Lime Kiln 4 Future	JSCLK4	30.8	0.94	449.8	48.59	4.9	CON
		Smelt Dissolving Tank 4 Future	JSCSDT4	75.9	1.83	340.4	5.16	3.2	CON
		Smelt Dissolving Tank 5 Future	JSCSDT5	87.8	1.22	345.4	16.77	1.8	CON
		PBs 3 & 4 1974 Baseline	JSCPB34b	69.2	2.44	483	16.86	-9.6	EXP
		PB5 1974 Baseline	JSCPB5b	69.2	3.35	480	16.25	-15.8	EXP
		RB4 1974 Baseline	JSCRB4b	75.9	3.51	493	18.78	-17.2	EXP
		RB3 1974 Baseline	JSCRB3b	40.8	2.74	390	13.26	-5.2	EXP
		Lime Kiln 2 1974 Baseline	JSCLK2b	13.4	1.07	361	12.25	-2.2	EXP
		Lime Kiln 3 1974 Baseline	JSCLK3b	13.4	1.37	360	17.59	-2.5	EXP
		Smelt Diss. Tank 4 1974 Baseline	JSCSDT4b	69.5	1.83	350	5.21	-3.6	EXP
		Smelt Diss. Tank 3 1974 Baseline	JSCSDT3b	33.2	0.61	360	5.82	-1.7	EXP
31JAX160001	JEA - St. Johns River Power Park		SJRPP12	195.1	6.79	342	27.4	46.48	CON
31DVL1600	Cedar Bay Cogeneration								
		CFB Boiler	CEDBYCB	129.5	4.27	402.6	33.22	2.25	CON
		Dryers	CEDBYDRY	9.1	1.04	355.4	21.34	0.02	CON
31DVL160067	Stone Container Corp								
		Package Boilers 1-3 Future	SKCPAC13	61	2.44	447	16.18	0.9	CON
		PBs 1-3 1974 Baseline	SKCPB13b	32.3	1.83	433	20.12	-11.52	EXP
		BB1-2 1974 Baseline	SKCBB12b	41.5	2.44	329	13.72	-2.97	EXP
31DVL160047	JEA - Kennedy Power Plant								
		Unit 8 1974 Baseline	JEAKEN8B	45.7	3.2	394	10.4	-6.07	EXP
31DVL160045	JEA - Northside Power Plant								
		Repowered Units 1&2	JEANS12	151	4.57	330.9	19.2	7.66	CON
		Unit 1 1974 Baseline	JEANS1B	76.2	4.87	403	23.1	-43.62	EXP
		Unit 2 1974 Baseline	JEANS2B	88.4	5	394	13.1	-36.9	EXP

Table 4-9. Summary of Competing NO_x Facilities Considered in the AAQS Air Modeling Analyses

APIS Number	Facility	County	UTM Coordinates East (km)	UTM Coordinates North (km)	Relative to G-P Palatka Mill X (km)	Relative to G-P Palatka Mill Y (km)	Relative to G-P Palatka Mill Distance (km)	Relative to G-P Palatka Mill Direction[a] (deg)	Maximum PM_{10} Emissions (TPY)
31JAX540025	Seminole Power Plant	Putnam	438.8	3289.2	4.8	5.8	7.5	40	45,862
31JAX540014	Florida Power & Light - Putnam	Putnam	443.3	3277.6	9.3	-5.8	11.0	122	2,750
G-P Palatka Mill UTM Coordinates (km) (E,N):			434.0	3283.4					

Table 4-10. Summary of Competing NO_x Sources Included in the AAQS Air Modeling Analysis

APIS Number	Facility	Units	ISCST3 ID Name	Stack Parameters Height (m)	Diameter (m)	Temper. (K)	Velocity (m/s)	Emission Rate (g/s)
31JAX540025	Seminole Power Plant							
		Units 1 and 2	SEMELECT	205.7	10.97	326.5	7.99	1319.32
31JAX540014	Florida Power & Light - Putnam							
		4x70Mw CT/HRSG + DB	FPLPUTNM	22.3	3.15	437.4	58.60	346.45

Table 4-11. Summary of Competing NOx Sources Included in the PSD Class I Air Modeling Analysis

APIS Number	Facility	Units	ISCST3 ID Name	Stack Parameters Height (m)	Diameter (m)	Temper. (K)	Velocity (m/s)	Emission Rate (g/s)	(EXP/CON)
31JAX540014	Florida Power & Light - Putnam								
		4x70Mw CT/HRSG + DB	FPLPUTNM	22.3	3.15	437.4	58.60	173.20	CON
31JAX450003	Jefferson-Smurfit Corp								
		RB5 Future stack 1	JSCRB5a	87.8	2.74	483.7	18.96	10.6	CON
		RB5 Future stack 2	JSCRB5b	87.8	2.74	483.7	18.96	10.6	CON
		RB4 Future	JSCRB4	75.9	3.75	510.9	17.96	18.6	CON
		PB5 Future	JSCPB5	78.3	3.35	497.6	18.17	37.3	CON
		PB7 Future	JSCPB7	103.6	4.51	470.4	13.44	77.2	CON
		Lime Kiln 4 Future	JSCLK4	30.8	0.94	449.8	48.59	23.6	CON
		PB7 1988 Baseline	JSCPB7b	103.6	4.42	489	13.52	-51.7	EXP
		PB5 1988 Baseline	JSCPB5b	69.2	3.35	480	16.25	-17.3	EXP
		RB4 1988 Baseline	JSCRB4b	75.9	3.51	493	18.78	-14.8	EXP
		RB5 1988 Baseline	JSCRB5bb	87.8	2.74	496	14.36	-18.1	EXP
		Lime Kiln 2 1988 Baseline	JSCLK2b	13.4	1.07	361	12.25	-12	EXP
		Lime Kiln 3 1988 Baseline	JSCLK3b	13.4	1.37	360	17.59	-12	EXP
31JAX160001	JEA - St. Johns River Power Park		SJRPP12	195.1	6.79	342	27.4	929.8	CON
31DVL1600	Cedar Bay Cogeneration								
		3 CFB Boilers	CEDBYCB	129.5	4.27	402.6	33.22	63.57	CON
		Dryers	CEDBYDRY	9.1	1.04	355.4	21.34	0.18	CON
31DVL160067	Stone Container Corp								
		Package Boilers 1-3 Future	SKCPAC13	61	2.44	447	16.18	13.23	CON
		PBs 1-3 1988 Baseline	SKCPB13b	32.3	1.83	433	20.12	-24.53	EXP
		BB1-2 1988 Baseline	SKCBB12b	41.5	2.44	329	13.72	-13.93	EXP
31DVL160045	JEA - Northside Power Plant								
		Repowered Units 1&2	JEANS12	151	4.57	330.9	19.2	62.74	CON
		Unit 1 1988 Baseline	JEANS1B	76.2	4.87	403	23.1	-112.19	EXP

Table 4-12. Structure Dimensions Used in the Georgia-Pacific Modeling Analysis

Structure	Actual Building Dimensions					
	Height		Length		Width	
	ft	m	ft	m	ft	m
RB4 Preciptator	85	25.9	130	39.6	559	170.4
RB4 Boiler Building	193.7	59.0	104	31.7	100	30.5
Power Plant Building	107.6	32.8	92	28	92	28
Pulp Dryer No. 3	84.5	25.8	63	19.2	147	44.8
Pulp Dryer No. 5	70.5	21.5	306	93.3	95	29
Pulp Dryer No. 4	73	22.3	242	73.8	127	38.7
Warehouse Complex 1	62.67	19.1	1,382	421.2	411	125.3
Warehouse Complex 2	46.8	14.3	852	259.7	370	112.8
Nos. 1 and 2 Machines, Storage	71.16	21.7	232	70.7	412	125.6
Kraft Converting and Storing	60.75	18.5	264	80.5	516	157.3
Kraft Warehouse and Multi-Wall	56.7	17.3	274	83.5	507	154.5
Digester	62.2	19	264	80.5	32	9.8
No. 3 RB Building[a]	100	30.5	61	18.6	34	10.4
No 2 RB Building[a]	100	30.5	58	17.7	73	22.3

[a] 1974 Baseline Only

Table 4-13. Summary of Direction-Specific Distances From the TRS Incinerator to G-P Plant Property Boundaries

Direction (Degrees)	Distance (m)	Direction (Degrees)	Distance (m)
10	5,000	190	750
20	4,500	200	1,829
30	2,500	210	1,829
40	2,500	220	1,981
50	1,500	230	2,134
60	1,500	240	2,438
70	1,500	250	2,896
80	838	260	3,048
90	686	270	3,658
100	533	280	3,962
110	457	290	4,572
120	457	300	5,182
130	457	310	4,801
140	457	320	4,875
150	457	330	6,000
160	488	340	5,500
170	533	350	5,250
180	610	360	5,125

Table 4-14. PSD Class I Area Receptors Used in the Modeling Analysis

PSD Class I Area	UTM Coordinates	
	East (km)	North (km)
Wolf Island NWR	470.5	3459.0
Okefenokee NWR	391.0	3417.0
Okefenokee NWR	390.0	3410.0
Okefenokee NWR	392.0	3400.0
Okefenokee NWR	390.0	3395.0
Okefenokee NWR	391.0	3390.0
Okefenokee NWR	390.0	3384.0
Okefenokee NWR	383.0	3382.0
Okefenokee NWR	378.0	3382.0
Okefenokee NWR	374.0	3383.0
Okefenokee NWR	370.0	3383.0

5.0 AIR MODELING ANALYSIS RESULTS

5.1 AAQS ANALYSES

The maximum predicted SO_2, PM_{10}, NO_2, and CO concentrations from the screening analysis due to all future modeled sources is presented in Table 5-1. Based on the results of the screening analyses, refined modeling analyses were performed for each pollutant. The refined modeling results are added to a measured, non-modeled background concentration to produce a cumulative total air quality concentration that can be compared with the AAQS. A summary of the refined analysis is presented in Table 5-2. All maximum impacts occurred at or near G-P's property boundary.

The maximum predicted total SO_2 concentrations are 29.5, 237, and 600 $\mu g/m^3$, respectively for the annual, 24-hour and 3-hour averaging times. These concentrations are below the AAQS of 60, 260, and 1,300 $\mu g/m^3$, respectively, for these averaging times.

The maximum predicted total PM_{10} concentrations are 29.7 and 56 $\mu g/m^3$, respectively for the annual and 24-hour averaging times. These concentrations are all below the AAQS of 50 and 150 $\mu g/m^3$, respectively, for these averaging times.

The maximum predicted total CO concentrations are 5,456 and 12,011 $\mu g/m^3$, respectively for the 8-hour and 1-hour averaging times. These concentrations are well below the AAQS of 10,000 and 40,000 $\mu g/m^3$, respectively, for these averaging times.

The maximum predicted total NO_x concentration is 46 $\mu g/m^3$, for the annual averaging time. This concentration is well below the AAQS of 100 $\mu g/m^3$, for the annual averaging time.

5.2 PSD CLASS II ANALYSIS

The maximum predicted SO_2, PM_{10} and NO_2 PSD increment consumption from the screening analysis due to all PSD-affecting sources is presented in Table 5-3. Based on the results of the screening analyses, refined modeling analyses were performed for SO_2 and PM_{10} . The refined modeling results are compared to the allowable PSD Class II increments in Table 5-4.

The maximum predicted SO_2 PSD increment consumption is 3.7, 83.4, and 404 $\mu g/m^3$, respectively for the annual, 24-hour and 3-hour averaging times. These concentrations are all below the allowable PSD Class II increments of 20, 91, and 512 $\mu g/m^3$, respectively, for these averaging times. It is noted that all of these maximums occur near the Seminole Electric power plant, and the impacts are primarily due to the power plant and not to G-P Palatka.

The maximum predicted PM_{10} PSD annual increment consumption is less than zero (i.e., there is increment expansion near to the G-P Palatka facility). The maximum predicted PM_{10} 24-hour average PSD increment consumption is 2.1 $\mu g/m^3$. This concentration is well below the allowable PSD Class II 24-hour increment of 30 $\mu g/m^3$. It is noted that this maximum occurs near the Seminole Power Plant, and the impacts are primarily due to the power plant and not to G-P Palatka.

The maximum predicted NO_2 PSD Class II increment consumption is 4.4 $\mu g/m^3$, which is well below the allowable NO_2 increment of 25 $\mu g/m^3$.

5.3 PSD CLASS I ANALYSIS

The maximum predicted SO_2 PSD increment consumption at the ONWR and WINWR PSD Class I areas due to all nearby PSD-affecting sources is compared to the allowable PSD Class I increments in Table 5-5.

The maximum predicted SO_2 PSD increment consumption at the ONWR and WINWR PSD Class I areas is 0.29, 7.0, and 30.3 $\mu g/m^3$, respectively for the annual, 24-hour and 3-hour averaging times. The annual concentration is below the allowable PSD Class I increment of 2 $\mu g/m^3$. However, the predicted concentrations are above the allowable

PSD Class I increments of 5 and 25 μg/m^3, respectively, for the 24-hour and 3-hour averaging times, respectively. Further analysis of these maximum impacts reveals that the Seminole Power Plant in Palatka, by itself, causes impacts greater than the 5 and 25 μg/m^3 allowable increments for the 24-hour and 3-hour averaging times, respectively. It is noted that the modeling analysis does not take into account any SO_2 half-life, which in this case may be appropriate for modeling long-range transport of SO_2, due to the great distance to the Class I area. In addition, the total G-P Palatka facility contributes a maximum of only 0.4 μg/m^3 to any 24-hour impacts upon the Class I area.

The maximum predicted PM_{10} PSD increment consumption is less than zero for the annual averaging time, and is 0.06 μg/m^3 for the 24-hour averaging time. These concentrations are well below the allowable PSD Class I increments of 1 μg/m^3 and 5 μg/m^3, respectively, for the annual and 24-hour averaging times.

The maximum predicted NO_2 PSD increment consumption at the ONWR and WINWR PSD Class I areas is 0.42 μg/m^3 for the annual averaging time. This concentration is well below the allowable PSD Class I increment of 2.5 μg/m^3.

Table 5-1. Maximum Predicted Pollutant Impacts Due to All Future Modeled Sources, AAQS Screening Analyses

Averaging Time	Concentration[a] ($\mu g/m^3$)	Receptor Location[b] Direction (degree)	Receptor Location[b] Distance (m)	Time Period (YYMMDDHH)
SO_2				
Annual				
	19.1	90	686	84123124
	22.2	90	686	85123124
	20.1	90	686	86123124
	23.4	120	1100	87123124
	20.1	100	533	88123124
H2H 24-Hour				
	184	100	533	84042424
	202	100	533	85122524
	133	130	1100	86082424
	231	120	457	87013124
	204	120	457	88021324
H2H 3-Hour				
	568	110	457	84040615
	594	100	533	85122512
	530	110	457	86060212
	511	120	457	87122909
	575	120	457	88021312
PM_{10}				
Annual				
	2.8	90	686	84123124
	3.2	100	533	85123124
	3.1	100	533	86123124
	3.7	120	457	87123124
	3.3	110	457	88123124
H2H 24-Hour				
	22.9	120	457	84020624
	23.7	100	533	85021224
	19.8	110	457	86050224
	29.7	120	457	87013124
	26.5	110	457	88031424
NO_x				
Annual				
	12.5	110	457	84123124
	15.1	100	533	85123124
	14.1	110	457	86123124
	18.0	110	457	87123124
	16.2	110	457	88123124
CO				
H2H 8-Hour				
	1,751	130	457	84013124
	1,918	100	533	85020908
	1,703	80	838	86041208
	2,234	130	457	87040108
	1,823	100	533	88102308
H2H 1-Hour				
	6,198	140	457	84010301
	6,198	140	457	85120703
	6,220	150	457	86120501
	6,678	110	457	87081123
	6,168	140	457	88113002

[a] Based on 5-year meteorological record, Jacksonville/Waycross, 1984-88
[b] Relative to TRS Incinerator Stack Location

Note: YYMMDDHH = Year, Month, Day, Hour Ending
H2H = Highest, 2nd-Highest Concentration in 5 years.

Table 5-2. Maximum Predicted Pollutant Impacts Due to All Future Sources For Comparison to AAQS, Refined Analysis

Averaging Time	Concentration ($\mu g/m^3$)			Receptor Location[b]		Time Period	Florida
	Total	Modeled	Background	Direction (degree)	Distance (m)	(YYMMDDHH)	AAQS ($\mu g/m^3$)
SO_2							
Annual	29.5	23.5	6	122	1200	87123124	60
H2H 24-Hour	237	231	6	120	457	87013124	260
H2H 3-Hour	600	594	6	100	533	85122512	1300
PM_{10}							
Annual	29.7	3.7	26	120	457	87123124	50
H2H 24-Hour	56	29.7	26	120	457	87013124	150
NO_x							
Annual	46.0	18.0	28	110	457	87123124	100
CO							
H2H 8-Hour	5,456	2,234	3,222	130	457	87040108	10,000
H2H 1-Hour	12,011	6,678	5,333	110	457	87081123	40,000

[a] Based on 5-year meteorological record, Jacksonville/Waycross, 1984-88
[b] Relative to TRS Incinerator Stack Location
Note: YYMMDDHH = Year, Month, Day, Hour Ending
H2H = Highest, 2nd-Highest Concentration in 5 years.

Table 5-3 . Maximum Predicted PSD Class II Increment Consumption, Screening Analysis

Averaging Time	Concentration[a] (µg/m³)	Receptor Location[b] Direction (degree)	Receptor Location[b] Distance (m)	Time Period (YYMMDDHH)
SO₂				
Annual				
	2.8	360	5125	84123124
	3.4	360	5125	85123124
	2.5	10	5000	86123124
	3.1	20	5000	87123124
	3.7	10	5000	88123124
H2H 24-Hour				
	72	30	5000	84092624
	79	60	4500	85052624
	71	10	5000	86082524
	63	40	5000	87042724
	75	360	5125	88111524
H2H 3-Hour				
	352	30	5000	84071012
	366	20	4500	85082312
	345	30	5000	86060312
	317	30	4000	87070615
	327	60	5000	88092815
PM_{10}				
Annual				
	<0	NA	NA	84123124
	<0	NA	NA	85123124
	<0	NA	NA	86123124
	<0	NA	NA	87123124
	<0	NA	NA	88123124
H2H 24-Hour				
	1.8	30	5000	84092624
	2.0	60	4500	85052624
	1.8	10	5000	86082524
	1.7	40	5000	87042724
	1.9	360	5125	88111524
NO_x				
Annual				
	3.8	120	457	84123124
	4.0	100	533	85123124
	3.9	110	457	86123124
	5.3	120	457	87123124
	4.4	110	457	88123124

[a] Based on 5-year meteorological record, Jacksonville/Waycross, 1984-88
[b] Relative to TRS Incinerator Stack Location
Note: YYMMDDHH = Year, Month, Day, Hour Ending
H2H = Highest, 2nd-Highest Concentration in 5 years.
PSD = Prevention of Significant Deterioration
NA = Not Applicable

Table 5-4. Maximum Predicted Class II PSD Increment Consumption, Refined Analysis

Averaging Time	Concentration ($\mu g/m^3$)	Receptor Location[b] Direction (degree)	Receptor Location[b] Distance (m)	Time Period (YYMMDDHH)	Allowable PSD Class II Increment ($\mu g/m^3$)
SO_2					
Annual	3.7	10	5000	87123124	20
H2H 24-Hour	83.4	59	4800	85052624	91
	81.4	360	4900	88111524	
H2H 3-Hour	378	30	4800	84092612	512
	404	25	4800	85071818	
	345	30	5000	86060312	
PM_{10}					
Annual	<0	NA	NA	NA	17
H2H 24-Hour	2.1	59	4800	85052624	30
	2.0	359	4900	88111524	

[a] Based on 5-year meteorological record, Jacksonville/Waycross, 1984-88

[b] Relative to TRS Incinerator Stack Location

Note: YYMMDDHH = Year, Month, Day, Hour Ending
H2H = Highest, 2nd-Highest Concentration in 5 years
NA = Not Applicable
PSD = Prevention of Significant Deterioration

Table 5-5. Maximum Predicted PSD Class I Increment at the Okefenokee and Wolf Island NWRs

Averaging Time	Concentration[a] (µg/m³)	Receptor Location (UTM) (m)	Receptor Location (UTM) (m)	Time Period (YYMMDDHH)	Allowable PSD Class I Increment (µg/m³)
SO_2					
Annual					
	0.29	370000	3383000	84123124	2
	0.11	370000	3383000	85123124	
	0.26	370000	3383000	86123124	
	0.12	370000	3383000	87123124	
	0.14	370000	3383000	88123124	
H2H 24-Hour					
	6.9	370000	3383000	84052324	5
	5.8	370000	3383000	85072724	
	5.5	374000	3383000	86061424	
	5.3	390000	3384000	87031824	
	7.0	378000	3382000	88032524	
H2H 3-Hour					
	30.3	378000	3382000	84080509	25
	26.1	390000	3395000	85072909	
	25.4	378000	3382000	86040409	
	27.1	391000	3390000	87111712	
	23.5	370000	3383000	88060606	
PM_{10}					
Annual					
	<0	NA	NA	84123124	1
	<0	NA	NA	85123124	
	<0	NA	NA	86123124	
	<0	NA	NA	87123124	
	<0	NA	NA	88123124	
H2H 24-Hour					
	0.04	383000	3382000	84060424	5
	0.04	378000	3382000	85062524	
	0.06	378000	3382000	86081324	
	0.04	383000	3382000	87080724	
	0.04	370000	3383000	88092024	
NO_x					
Annual					
	0.39	390000	3410000	84123124	2.5
	0.40	391000	3390000	85123124	
	0.41	392000	3400000	86123124	
	0.33	391000	3417000	87123124	
	0.42	390000	3410000	88123124	

[a] Based on 5-year meteorological record, Jacksonville/Waycross, 1984-88

Note: YYMMDDHH = Year, Month, Day, Hour Ending
PSD = Prevention of Significant Deterioration
UTM = Universal Transverse Mercator
H2H = Highest, 2nd-Highest
NA = Not Applicable

APPENDIX A

DIRECTION-SPECIFIC BUILDING INFORMATION USED FOR THE AIR MODELING ANALYSIS

```
'BPIP data for GA-PACIFIC PALATKA  FUTURE -  5/27/99'
'ST'
'FEET' 0.3048
'UTMN' -34.0
12
'RB4 Precipitator' 1 0.0
4 85
     -304    552
     -304    682
     -245    682
     -245    552
'RB4 Building' 1 0.0
4 193.7
     -228    569
     -228    659
     -124    659
     -124    569
'Power House' 1 0.0
4 107.6
     -83     533
     -83     625
      9      625
      9      533
'Pulp Dryer 3' 1 0.0
4 84.5
        496       -158
        496        105
        643        105
        643       -158
'Pulp Dryer 5' 1 0.0
4 70.5
        696       -158
        696        148
        791        148
        791       -158
'Pulp Dryer 4' 1 0.0
4 73
        791       -158
        791         84
        918         84
        918       -158
'Warehouse complex 1' 1 0.0
4 62.67
        485       -580
        485       -169
        1867       -169
        1867    -580
'Warehouse Complex 2' 1 0.0
4 46.8
        675       -950
        675       -580
        1527       -580
        1527       -950
'#1 & #2 Machines, Storage' 1 0.0
4 71.16
        211        327
        211        739
        443        739
        443        327
'Kraft Converting & Storage' 1 0.0
```

```
4 60.75
        211          739
        211          1255
        475         1255
        475          739
'Kraft Warehouse & Multiwall' 1 0.0
6 56.7
        559          886
        559         1393
        833         1393
        833         1118
        717         1118
        717          886
'Digester' 1 0.0
4 62.2
        211           95
        211          127
        475          127
        475           95
10
'TRS    '   0.0  250      0.00        0.00
'RB4    '   0.0  230   -354.54      601.00
'SDT4   '   0.0  206   -161.73      609.67
'LK4    '   0.0  131   -123.00     -302.50
'PB4    '   0.0  122     23.55      508.82
'PB5    '   0.0  232    -90.71      459.23
'CB4    '   0.0  232    -69.36      456.90
'PB6    '   0.0   60    -28.97      489.96
'BLEACH'    0.0  118    557.09      183.92
'TO     '   0.0  100     58.00      -52.50
0
```

BPIP (Dated: 95086)

DATE : 06/05/99
TIME : 23:44:01
BPIP data for GA-PACIFIC PALATKA FUTURE - 5/27/99

============================
BPIP PROCESSING INFORMATION:
============================

The ST flag has been set for processing for an ISCST2 run.

Inputs entered in FEET will be converted to meters using a conversion factor of 0.3048. Output will be in meters.

UTMP is set to UTMN. The input is assumed to be in a local X-Y coordinate system as opposed to a UTM coordinate system. True North is in the positive Y direction.

Plant north is set to -34.00 degrees with respect to True North.

BPIP data for GA-PACIFIC PALATKA FUTURE - 5/27/99

PRELIMINARY* GEP STACK HEIGHT RESULTS TABLE
(Output Units: meters)

Stack Name	Stack Height	Stack-Building Base Elevation Differences	GEP** EQN1	Preliminary* GEP Stack Height Value
TRS	76.20	0.00	118.45	118.45
RB4	70.10	0.00	116.20	116.20
SDT4	62.79	0.00	121.92	121.92
LK4	39.93	N/A	0.00	65.00
PB4	37.19	0.00	121.79	121.79
PB5	70.71	0.00	121.92	121.92
CB4	70.71	0.00	121.92	121.92
PB6	18.29	0.00	121.92	121.92
BLEACH	35.97	0.00	64.39	65.00
TO	30.48	0.00	47.40	65.00

* Results are based on Determinants 1 & 2 on pages 1 & 2 of the GEP Technical Support Document. Determinant 3 may be investigated for additional stack height credit. Final values result after Determinant 3 has been taken into consideration.

** Results were derived from Equation 1 on page 6 of GEP Technical Support Document. Values have been adjusted for any stack-building base elevation differences.

Note: Criteria for determining stack heights for modeling emission limitations for a source can be found in Table 3.1 of the GEP Technical Support Document.

BPIP (Dated: 95086)

DATE : 06/05/99
TIME : 23:44:01

BPIP data for GA-PACIFIC PALATKA FUTURE - 5/27/99

BPIP output is in meters

SO BUILDHGT TRS	0.00	18.96	0.00	0.00	0.00	0.00
SO BUILDHGT TRS	0.00	0.00	18.96	18.96	0.00	59.04
SO BUILDHGT TRS	59.04	59.04	32.80	0.00	0.00	0.00
SO BUILDHGT TRS	0.00	18.96	18.96	18.96	18.96	18.96
SO BUILDHGT TRS	18.96	18.96	18.96	18.96	0.00	0.00
SO BUILDHGT TRS	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID TRS	0.00	471.02	0.00	0.00	0.00	0.00
SO BUILDWID TRS	0.00	0.00	339.41	382.73	0.00	39.61
SO BUILDWID TRS	38.03	34.39	74.74	0.00	0.00	0.00
SO BUILDWID TRS	0.00	55.19	44.04	31.56	100.16	86.21
SO BUILDWID TRS	88.62	285.77	339.41	382.73	0.00	0.00
SO BUILDWID TRS	0.00	0.00	0.00	0.00	0.00	0.00

SO BUILDHGT RB4	59.04	59.04	59.04	59.04	59.04	59.04
SO BUILDHGT RB4	59.04	59.04	59.04	59.04	25.91	25.91
SO BUILDHGT RB4	25.91	0.00	0.00	25.91	25.91	25.91
SO BUILDHGT RB4	59.04	59.04	59.04	59.04	59.04	59.04
SO BUILDHGT RB4	59.04	59.04	59.04	59.04	25.91	25.91
SO BUILDHGT RB4	25.91	0.00	0.00	25.91	25.91	25.91
SO BUILDWID RB4	38.11	38.11	38.11	35.11	30.60	29.58
SO BUILDWID RB4	34.29	37.95	38.11	38.11	37.84	33.53
SO BUILDWID RB4	28.21	0.00	0.00	27.03	32.55	37.07
SO BUILDWID RB4	38.11	38.11	38.11	35.11	30.60	29.58
SO BUILDWID RB4	34.29	37.95	38.11	38.11	37.84	33.53
SO BUILDWID RB4	28.21	0.00	0.00	27.03	32.55	37.07

SO BUILDHGT SDT4	59.04	59.04	59.04	59.04	59.04	59.04
SO BUILDHGT SDT4	59.04	59.04	59.04	59.04	59.04	59.04
SO BUILDHGT SDT4	59.04	59.04	59.04	59.04	59.04	59.04
SO BUILDHGT SDT4	59.04	59.04	59.04	59.04	59.04	59.04
SO BUILDHGT SDT4	59.04	59.04	59.04	59.04	59.04	59.04
SO BUILDHGT SDT4	59.04	59.04	59.04	59.04	59.04	59.04
SO BUILDWID SDT4	41.86	40.83	38.55	35.11	30.60	29.58
SO BUILDWID SDT4	34.29	37.95	40.47	41.75	41.77	40.52
SO BUILDWID SDT4	38.03	34.39	33.54	37.39	40.12	41.62
SO BUILDWID SDT4	41.86	40.83	38.55	35.11	30.60	29.58
SO BUILDWID SDT4	34.29	37.95	40.47	41.75	41.77	40.52
SO BUILDWID SDT4	38.03	34.39	33.54	37.39	40.12	41.62

SO BUILDHGT LK4	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK4	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK4	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK4	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK4	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK4	0.00	0.00	0.00	0.00	0.00	0.00

```
SO BUILDWID LK4        0.00     0.00     0.00     0.00     0.00     0.00
SO BUILDWID LK4        0.00     0.00     0.00     0.00     0.00     0.00
SO BUILDWID LK4        0.00     0.00     0.00     0.00     0.00     0.00
SO BUILDWID LK4        0.00     0.00     0.00     0.00     0.00     0.00
SO BUILDWID LK4        0.00     0.00     0.00     0.00     0.00     0.00
SO BUILDWID LK4        0.00     0.00     0.00     0.00     0.00     0.00

SO BUILDHGT PB4       32.80    32.80    32.80    32.80    32.80    59.04
SO BUILDHGT PB4       59.04    59.04    59.04    59.04    59.04    32.80
SO BUILDHGT PB4       32.80    32.80    32.80    32.80    32.80    32.80
SO BUILDHGT PB4       32.80    32.80    32.80    32.80    32.80    59.04
SO BUILDHGT PB4       59.04    59.04    59.04    59.04    59.04    32.80
SO BUILDHGT PB4       32.80    32.80    32.80    32.80    32.80    32.80
SO BUILDWID PB4       39.65    39.17    37.50    34.68    45.75    29.58
SO BUILDWID PB4       34.29    37.95    40.47    41.75    41.77    37.50
SO BUILDWID PB4       34.68    73.63    74.74    33.99    37.02    38.93
SO BUILDWID PB4       39.65    39.17    37.50    34.68    45.75    29.58
SO BUILDWID PB4       34.29    37.95    40.47    41.75    41.77    37.50
SO BUILDWID PB4       34.68    73.63    74.74    33.99    37.02    38.93

SO BUILDHGT PB5       32.80    32.80    32.80    32.80     0.00     0.00
SO BUILDHGT PB5       25.91    59.04    59.04    59.04    59.04    59.04
SO BUILDHGT PB5       59.04    59.04    59.04    59.04    32.80    32.80
SO BUILDHGT PB5       32.80    32.80    32.80    32.80    21.69    21.69
SO BUILDHGT PB5       25.91    59.04    59.04    59.04    59.04    59.04
SO BUILDHGT PB5       59.04    59.04    59.04    59.04    32.80    32.80
SO BUILDWID PB5       39.65    39.17    37.50    34.68     0.00     0.00
SO BUILDWID PB5       42.80    37.95    40.47    41.75    41.77    40.52
SO BUILDWID PB5       38.03    34.39    33.54    37.39    37.02    38.93
SO BUILDWID PB5       39.65    39.17    37.50    34.68   132.28   130.20
SO BUILDWID PB5       44.92    37.95    40.47    41.75    41.77    40.52
SO BUILDWID PB5       38.03    34.39    33.54    37.39    37.02    38.93

SO BUILDHGT CB4       32.80    32.80    32.80    32.80     0.00     0.00
SO BUILDHGT CB4       25.91    59.04    59.04    59.04    59.04    59.04
SO BUILDHGT CB4       59.04    59.04    32.80    32.80    32.80    32.80
SO BUILDHGT CB4       32.80    32.80    32.80    32.80    21.69    21.69
SO BUILDHGT CB4       25.91    59.04    59.04    59.04    59.04    59.04
SO BUILDHGT CB4       59.04    59.04    32.80    32.80    32.80    32.80
SO BUILDWID CB4       39.65    39.17    37.50    34.68     0.00     0.00
SO BUILDWID CB4       42.80    37.95    40.47    41.75    41.77    40.52
SO BUILDWID CB4       38.03    34.39    74.74    33.99    37.02    38.93
SO BUILDWID CB4       39.65    39.17    37.50    34.68   132.28   130.20
SO BUILDWID CB4       44.92    37.95    40.47    41.75    41.77    40.52
SO BUILDWID CB4       38.03    34.39    74.74    33.99    37.02    38.93

SO BUILDHGT PB6       32.80    32.80    32.80    32.80    32.80    32.80
SO BUILDHGT PB6       59.04    59.04    59.04    59.04    59.04    59.04
SO BUILDHGT PB6       59.04    32.80    32.80    32.80    32.80    32.80
SO BUILDHGT PB6       32.80    32.80    32.80    32.80    32.80    32.80
SO BUILDHGT PB6       59.04    59.04    59.04    59.04    59.04    59.04
SO BUILDHGT PB6       59.04    32.80    32.80    32.80    32.80    32.80
SO BUILDWID PB6       39.65    39.17    37.50    34.68    45.75    37.44
SO BUILDWID PB6       34.29    37.95    40.47    41.75    41.77    40.52
SO BUILDWID PB6       38.03    73.63    74.74    33.99    37.02    38.93
SO BUILDWID PB6       39.65    39.17    37.50    34.68    45.75    37.44
```

SO	BUILDWID PB6	34.29	37.95	40.47	41.75	41.77	40.52
SO	BUILDWID PB6	38.03	73.63	74.74	33.99	37.02	38.93

SO	BUILDHGT BLEACH	25.76	25.76	18.96	18.96	18.96	21.49
SO	BUILDHGT BLEACH	21.49	25.76	25.76	25.76	25.76	25.76
SO	BUILDHGT BLEACH	25.76	25.76	25.76	25.76	25.76	25.76
SO	BUILDHGT BLEACH	25.76	25.76	18.96	18.96	18.96	21.49
SO	BUILDHGT BLEACH	22.25	25.76	25.76	25.76	25.76	25.76
SO	BUILDHGT BLEACH	25.76	25.76	25.76	25.76	25.76	25.76
SO	BUILDWID BLEACH	87.92	91.19	44.04	31.56	100.16	99.31
SO	BUILDWID BLEACH	112.25	91.46	91.51	88.79	83.37	75.41
SO	BUILDWID BLEACH	65.17	52.94	50.29	62.87	73.54	81.97
SO	BUILDWID BLEACH	87.92	91.19	44.04	31.56	100.16	95.06
SO	BUILDWID BLEACH	80.94	91.46	91.51	88.79	83.37	75.41
SO	BUILDWID BLEACH	65.17	52.94	50.29	62.87	73.54	81.97

SO	BUILDHGT TO	18.96	18.96	0.00	0.00	0.00	0.00
SO	BUILDHGT TO	18.96	18.96	18.96	18.96	0.00	0.00
SO	BUILDHGT TO	0.00	0.00	0.00	0.00	0.00	18.96
SO	BUILDHGT TO	18.96	18.96	18.96	18.96	18.96	18.96
SO	BUILDHGT TO	18.96	18.96	18.96	18.96	0.00	0.00
SO	BUILDHGT TO	0.00	0.00	0.00	0.00	0.00	18.96
SO	BUILDWID TO	512.78	471.02	0.00	0.00	0.00	0.00
SO	BUILDWID TO	88.62	285.77	339.41	382.73	0.00	0.00
SO	BUILDWID TO	0.00	0.00	0.00	0.00	0.00	72.16
SO	BUILDWID TO	64.66	55.19	44.04	31.56	100.16	86.21
SO	BUILDWID TO	88.62	285.77	339.41	382.73	0.00	0.00
SO	BUILDWID TO	0.00	0.00	0.00	0.00	0.00	538.96

```
'BPIP data for GA-PACIFIC PALATKA  1974 PSD BASELINE -  5/27/99'
'ST'
'FEET' 0.3048
'UTMN' -34.0
14
'RB4 Precipitator' 1 0.0
4 85
     -304    552
     -304    682
     -245    682
     -245    552
'RB4 Building' 1 0.0
4 193.7
     -228    569
     -228    659
     -124    659
     -124    569
'Power House' 1 0.0
4 107.6
     -83     533
     -83     625
      9      625
      9      533
'Pulp Dryer 3' 1 0.0
4 84.5
        496        -158
        496         105
        643         105
        643        -158
'Pulp Dryer 5' 1 0.0
4 70.5
        696        -158
        696         148
        791         148
        791        -158
'Pulp Dryer 4' 1 0.0
4 73
        791        -158
        791          84
        918          84
        918        -158
'Warehouse complex 1' 1 0.0
4 62.67
        485        -580
        485        -169
        1867        -169
        1867    -580
'Warehouse Complex 2' 1 0.0
4 46.8
        675        -950
        675        -580
        1527        -580
        1527        -950
'#1 & #2 Machines, Storage' 1 0.0
4 71.16
        211         327
        211         739
        443         739
        443         327
'Kraft Converting & Storage' 1 0.0
```

```
4 60.75
        211         739
        211         1255
        475         1255
        475         739
'Kraft Warehouse & Multiwall' 1 0.0
6 56.7
        559         886
        559         1393
        833         1393
        833         1118
        717         1118
        717         886
'Digester' 1 0.0
4 62.2
        211          95
        211         127
        475         127
        475          95
'No3 RB Bldg' 1 0.0
4 100
        -99      179
        -99      240
        -65      240
        -65      179
'No2 RB Bldg' 1 0.0
4 100
         20      157
         20      230
         78      230
         78      157
15
'RB1    '   0.0  250   48.21        196.66
'RB2    '   0.0  230   48.21        196.66
'RB3    '   0.0  206  -85.73        200.16
'RB4    '   0.0  230  -354.54       601.00
'SDT1   '   0.0  131   48.21        196.66
'SDT2   '   0.0  122   48.21        196.66
'SDT3   '   0.0  232  -85.73        200.16
'SDT4   '   0.0  206  -161.73       609.67
'LK1    '   0.0  232   19.52       -185.66
'LK2    '   0.0   60    3.17       -183.07
'LK3    '   0.0  118  -45.00       -263.00
'LK4    '   0.0  131  -123.00      -302.50
'PB4    '   0.0  122   23.55        508.82
'PB5    '   0.0  232  -90.71        459.23
'CB4    '   0.0  232  -69.36        456.90
0
```

BPIP (Dated: 95086)

DATE : 05/27/99

TIME : 13:17:36

BPIP data for GA-PACIFIC PALATKA 1974 PSD BASELINE - 5/27/99

============================

BPIP PROCESSING INFORMATION:

============================

The ST flag has been set for processing for an ISCST2 run.

Inputs entered in FEET will be converted to meters using a conversion factor of 0.3048. Output will be in meters.

UTMP is set to UTMN. The input is assumed to be in a local X-Y coordinate system as opposed to a UTM coordinate system. True North is in the positive Y direction.

Plant north is set to -34.00 degrees with respect to True North.

BPIP data for GA-PACIFIC PALATKA 1974 PSD BASELINE - 5/27/99

PRELIMINARY* GEP STACK HEIGHT RESULTS TABLE
(Output Units: meters)

Stack Name	Stack Height	Stack-Building Base Elevation Differences	GEP** EQN1	Preliminary* GEP Stack Height Value
RB1	76.20	0.00	121.74	121.74
RB2	70.10	0.00	121.74	121.74
RB3	62.79	0.00	118.18	118.18
RB4	70.10	0.00	116.20	116.20
SDT1	39.93	0.00	121.74	121.74
SDT2	37.19	0.00	121.74	121.74
SDT3	70.71	0.00	118.18	118.18
SDT4	62.79	0.00	121.92	121.92
LK1	70.71	N/A	0.00	65.00
LK2	18.29	0.00	63.48	65.00
LK3	35.97	N/A	0.00	65.00
LK4	39.93	N/A	0.00	65.00
PB4	37.19	0.00	121.79	121.79
PB5	70.71	0.00	121.92	121.92
CB4	70.71	0.00	121.92	121.92

* Results are based on Determinants 1 & 2 on pages 1 & 2 of the GEP Technical Support Document. Determinant 3 may be investigated for additional stack height credit. Final values result after Determinant 3 has been taken into consideration.

** Results were derived from Equation 1 on page 6 of GEP Technical Support Document. Values have been adjusted for any stack-building base elevation differences.

Note: Criteria for determining stack heights for modeling emission limitations for a source can be found in Table 3.1 of the GEP Technical Support Document.

BPIP (Dated: 95086)

DATE : 05/27/99
TIME : 13:17:36

BPIP data for GA-PACIFIC PALATKA 1974 PSD BASELINE - 5/27/99

BPIP output is in meters

SO BUILDHGT RB1	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDHGT RB1	30.48	30.48	30.48	30.48	59.04	59.04
SO BUILDHGT RB1	59.04	32.80	30.48	30.48	30.48	30.48
SO BUILDHGT RB1	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDHGT RB1	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDHGT RB1	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDWID RB1	56.38	52.18	46.39	39.19	23.98	23.43
SO BUILDWID RB1	25.87	36.14	43.06	48.66	41.77	40.52
SO BUILDWID RB1	38.03	73.63	19.19	22.54	25.20	58.87
SO BUILDWID RB1	56.38	52.18	46.39	39.19	23.98	23.43
SO BUILDWID RB1	25.87	36.14	43.06	48.66	52.78	25.64
SO BUILDWID RB1	23.13	19.91	19.19	22.54	25.20	58.87
SO BUILDHGT RB2	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDHGT RB2	30.48	30.48	30.48	30.48	59.04	59.04
SO BUILDHGT RB2	59.04	32.80	30.48	30.48	30.48	30.48
SO BUILDHGT RB2	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDHGT RB2	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDHGT RB2	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDWID RB2	56.38	52.18	46.39	39.19	23.98	23.43
SO BUILDWID RB2	25.87	36.14	43.06	48.66	41.77	40.52
SO BUILDWID RB2	38.03	73.63	19.19	22.54	25.20	58.87
SO BUILDWID RB2	56.38	52.18	46.39	39.19	23.98	23.43
SO BUILDWID RB2	25.87	36.14	43.06	48.66	52.78	25.64
SO BUILDWID RB2	23.13	19.91	19.19	22.54	25.20	58.87
SO BUILDHGT RB3	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDHGT RB3	30.48	30.48	30.48	30.48	30.48	59.04
SO BUILDHGT RB3	59.04	59.04	32.80	32.80	32.80	30.48
SO BUILDHGT RB3	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDHGT RB3	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDHGT RB3	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDWID RB3	56.38	52.18	46.39	39.19	23.98	23.43
SO BUILDWID RB3	25.87	36.14	43.06	48.66	52.78	39.42
SO BUILDWID RB3	38.03	34.39	74.74	33.99	37.02	58.87
SO BUILDWID RB3	56.38	52.18	46.39	39.19	23.98	23.43
SO BUILDWID RB3	25.87	36.14	43.06	48.66	52.78	17.46
SO BUILDWID RB3	15.09	12.25	11.63	14.55	17.03	58.87
SO BUILDHGT RB4	59.04	59.04	59.04	59.04	59.04	59.04

SO BUILDHGT RB4	59.04	59.04	59.04	59.04	25.91	25.91
SO BUILDHGT RB4	25.91	0.00	0.00	25.91	25.91	25.91
SO BUILDHGT RB4	59.04	59.04	59.04	59.04	59.04	59.04
SO BUILDHGT RB4	59.04	59.04	59.04	59.04	30.48	25.91
SO BUILDHGT RB4	25.91	0.00	0.00	25.91	25.91	25.91
SO BUILDWID RB4	38.11	38.11	38.11	35.11	30.60	29.58
SO BUILDWID RB4	34.29	37.95	38.11	38.11	37.84	33.53
SO BUILDWID RB4	28.21	0.00	0.00	27.03	32.55	37.07
SO BUILDWID RB4	38.11	38.11	38.11	35.11	30.60	29.58
SO BUILDWID RB4	34.29	37.95	38.11	38.11	52.78	33.53
SO BUILDWID RB4	28.21	0.00	0.00	27.03	32.55	37.07

SO BUILDHGT SDT1	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDHGT SDT1	30.48	30.48	30.48	30.48	59.04	59.04
SO BUILDHGT SDT1	59.04	32.80	30.48	30.48	30.48	30.48
SO BUILDHGT SDT1	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDHGT SDT1	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDHGT SDT1	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDWID SDT1	56.38	52.18	46.39	39.19	23.98	23.43
SO BUILDWID SDT1	25.87	36.14	43.06	48.66	41.77	40.52
SO BUILDWID SDT1	38.03	73.63	19.19	22.54	25.20	58.87
SO BUILDWID SDT1	56.38	52.18	46.39	39.19	23.98	23.43
SO BUILDWID SDT1	25.87	36.14	43.06	48.66	52.78	25.64
SO BUILDWID SDT1	23.13	19.91	19.19	22.54	25.20	58.87

SO BUILDHGT SDT2	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDHGT SDT2	30.48	30.48	30.48	30.48	59.04	59.04
SO BUILDHGT SDT2	59.04	32.80	30.48	30.48	30.48	30.48
SO BUILDHGT SDT2	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDHGT SDT2	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDHGT SDT2	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDWID SDT2	56.38	52.18	46.39	39.19	23.98	23.43
SO BUILDWID SDT2	25.87	36.14	43.06	48.66	41.77	40.52
SO BUILDWID SDT2	38.03	73.63	19.19	22.54	25.20	58.87
SO BUILDWID SDT2	56.38	52.18	46.39	39.19	23.98	23.43
SO BUILDWID SDT2	25.87	36.14	43.06	48.66	52.78	25.64
SO BUILDWID SDT2	23.13	19.91	19.19	22.54	25.20	58.87

SO BUILDHGT SDT3	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDHGT SDT3	30.48	30.48	30.48	30.48	30.48	59.04
SO BUILDHGT SDT3	59.04	59.04	32.80	32.80	32.80	30.48
SO BUILDHGT SDT3	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDHGT SDT3	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDHGT SDT3	30.48	30.48	30.48	30.48	30.48	30.48
SO BUILDWID SDT3	56.38	52.18	46.39	39.19	23.98	23.43
SO BUILDWID SDT3	25.87	36.14	43.06	48.66	52.78	39.42
SO BUILDWID SDT3	38.03	34.39	74.74	33.99	37.02	58.87
SO BUILDWID SDT3	56.38	52.18	46.39	39.19	23.98	23.43
SO BUILDWID SDT3	25.87	36.14	43.06	48.66	52.78	17.46
SO BUILDWID SDT3	15.09	12.25	11.63	14.55	17.03	58.87

SO BUILDHGT SDT4	59.04	59.04	59.04	59.04	59.04	59.04
SO BUILDHGT SDT4	59.04	59.04	59.04	59.04	59.04	59.04
SO BUILDHGT SDT4	59.04	59.04	59.04	59.04	59.04	59.04
SO BUILDHGT SDT4	59.04	59.04	59.04	59.04	59.04	59.04
SO BUILDHGT SDT4	59.04	59.04	59.04	59.04	59.04	59.04

SO BUILDHGT SDT4	59.04	59.04	59.04	59.04	59.04	59.04
SO BUILDWID SDT4	41.86	40.83	38.55	35.11	30.60	29.58
SO BUILDWID SDT4	34.29	37.95	40.47	41.75	41.77	40.52
SO BUILDWID SDT4	38.03	34.39	33.54	37.39	40.12	41.62
SO BUILDWID SDT4	41.86	40.83	38.55	35.11	30.60	29.58
SO BUILDWID SDT4	34.29	37.95	40.47	41.75	41.77	40.52
SO BUILDWID SDT4	38.03	34.39	33.54	37.39	40.12	41.62
SO BUILDHGT LK1	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK1	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK1	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK1	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK1	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK1	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK1	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK1	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK1	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK1	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK1	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK1	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK2	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK2	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK2	0.00	0.00	30.48	30.48	0.00	0.00
SO BUILDHGT LK2	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK2	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK2	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK2	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK2	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK2	0.00	0.00	19.19	22.00	0.00	0.00
SO BUILDWID LK2	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK2	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK2	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK3	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK3	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK3	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK3	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK3	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK3	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK3	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK3	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK3	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK3	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK3	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK3	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK4	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK4	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK4	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK4	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK4	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT LK4	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK4	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK4	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID LK4	0.00	0.00	0.00	0.00	0.00	0.00

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SO BUILDWID LK4          0.00    0.00    0.00    0.00    0.00    0.00
SO BUILDWID LK4          0.00    0.00    0.00    0.00    0.00    0.00
SO BUILDWID LK4          0.00    0.00    0.00    0.00    0.00    0.00


SO BUILDHGT PB4         32.80   32.80   32.80   32.80   32.80   59.04
SO BUILDHGT PB4         59.04   59.04   59.04   59.04   59.04   32.80
SO BUILDHGT PB4         32.80   32.80   32.80   32.80   32.80   32.80
SO BUILDHGT PB4         32.80   32.80   32.80   32.80   32.80   59.04
SO BUILDHGT PB4         59.04   59.04   59.04   59.04   59.04   32.80
SO BUILDHGT PB4         32.80   32.80   32.80   32.80   32.80   32.80
SO BUILDWID PB4         39.65   39.17   37.50   34.68   45.75   29.58
SO BUILDWID PB4         34.29   37.95   40.47   41.75   41.77   37.50
SO BUILDWID PB4         34.68   73.63   74.74   33.99   37.02   38.93
SO BUILDWID PB4         39.65   39.17   37.50   34.68   45.75   29.58
SO BUILDWID PB4         34.29   37.95   40.47   41.75   41.77   37.50
SO BUILDWID PB4         34.68   73.63   74.74   33.99   37.02   38.93


SO BUILDHGT PB5         32.80   32.80   32.80   32.80    0.00    0.00
SO BUILDHGT PB5         25.91   59.04   59.04   59.04   59.04   59.04
SO BUILDHGT PB5         59.04   59.04   59.04   59.04   32.80   32.80
SO BUILDHGT PB5         32.80   32.80   32.80   32.80   21.69   21.69
SO BUILDHGT PB5         25.91   59.04   59.04   59.04   59.04   59.04
SO BUILDHGT PB5         59.04   59.04   59.04   59.04   32.80   32.80
SO BUILDWID PB5         39.65   39.17   37.50   34.68    0.00    0.00
SO BUILDWID PB5         42.80   37.95   40.47   41.75   41.77   40.52
SO BUILDWID PB5         38.03   34.39   33.54   37.39   37.02   38.93
SO BUILDWID PB5         39.65   39.17   37.50   34.68  132.28  130.20
SO BUILDWID PB5         44.92   37.95   40.47   41.75   41.77   40.52
SO BUILDWID PB5         38.03   34.39   33.54   37.39   37.02   38.93


SO BUILDHGT CB4         32.80   32.80   32.80   32.80    0.00    0.00
SO BUILDHGT CB4         25.91   59.04   59.04   59.04   59.04   59.04
SO BUILDHGT CB4         59.04   59.04   32.80   32.80   32.80   32.80
SO BUILDHGT CB4         32.80   32.80   32.80   32.80   21.69   21.69
SO BUILDHGT CB4         25.91   59.04   59.04   59.04   59.04   59.04
SO BUILDHGT CB4         59.04   59.04   32.80   32.80   32.80   32.80
SO BUILDWID CB4         39.65   39.17   37.50   34.68    0.00    0.00
SO BUILDWID CB4         42.80   37.95   40.47   41.75   41.77   40.52
SO BUILDWID CB4         38.03   34.39   74.74   33.99   37.02   38.93
SO BUILDWID CB4         39.65   39.17   37.50   34.68  132.28  130.20
SO BUILDWID CB4         44.92   37.95   40.47   41.75   41.77   40.52
SO BUILDWID CB4         38.03   34.39   74.74   33.99   37.02   38.93
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