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Completion of the tabs in this spreadsheet is OPTIONAL.

Any cost information that you provide would be very useful to EPA for purposes of evaluating the costs of control measures that may be considered as regulatory options.
Cost information from within the last 10-12 years is requested (e.g., costs dating back to 1998).
Cost information could come from vendor quotes for APCD or equipment changes that either have been implemented or were not implemented.

The EPA recognizes that cost information can be sensitive. You may claim any information provided in this spreadsheet as confidential business information (CBI) and EPA will handle the information accordingly. The EPA's procedures for handling CBI are described in the letter that accompanied the pulp and paper information collection request (ICR). If your spreadsheet response contains any CBI, please be sure to follow the instructions in section C2 of the survey instruction document for submitting CBI.

Two tables are included in this spreadsheet: APCD costs, and Equip change costs

The EPA is particularly interested in costs of the following air pollution control devices (APCD). Please supply this information using the **APCD costs** template**.**

- Controls that reduce HAP emissions from wastewater handling and treatment systems
- Bleach plant CO control devices
- Paper machine HAP emissions capture and control systems

The EPA is particularly interested in costs of the following process changes or equipment changes/upgrades. Please supply this information using the **Equip change costs** template**.**

- Process changes that reduce HAP emissions from wastewater handling and treatment systems
- Process changes to improve lime mud washing or to control makeup water quality in the causticizing area
- Process changes that reduce paper machine HAP emissions

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Did any of the responses (individual cells) you entered in this tab contain CBI?
Did you consider the entire contents of this spreadsheet tab to be CBI?
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Complete the table below for air pollution control devices (APCD) installed/retrofitted in 1998 or later.
UK = Unknown. **NA = Not Applicable**. See instruction document for details on use of these terms.

Instruction:	Provide for all entries. This should match NEI Site ID used in other portions of your survey response.	Enter Emission Unit ID(s) controlled by the APCD	Enter APCD_ID for which cost information is being provided	Was the APCD retrofitted on an existing emission unit? Select yes/no	Was the APCD installed at the same time the emission unit was newly installed? Select yes/no	Identify the expected equipment life of the installed control device. This should be provided in years and estimated from the initial date of installation.	**CAPITAL COSTS** Year of the capital costs (e.g., 2006). EPA will use to scale costs to the current year used for regulatory analyses.	Include in the Purchased Equipment Costs the cost of control device and any required ancillary equipment (e.g., fans, pumps, ductwork), instrumentation, sales tax, and freight.								Calculated by summing items in B			
Survey overview reference:								**A.** Purchased Equipment Costs	**B.** Direct Installation Costs									**C.** Indirect Costs		
Field:	**NEI Site ID**	**Emission Unit ID**	**APCD_ID**	**Retrofit to existing emission unit?**	**Installation on new emission unit?**	**Expected control device equipment life (in yrs)**	**Base year for capital costs (XXXX)**	**Purchased Equipment Costs, Total ($)**	**Foundation and supports, $**	**Handling and erection, $**	**Electrical, $**	**Piping, $**	**Insulation for ductwork and piping, $**	**Painting, $**	**Other, $**	**Description of other**	**Total Direct Installation Costs, Total $**	**Engineering**	**Construction and field expenses**	**Contractor fees**
Example entry:	99999 RF1		SCRB1	yes	no	15	2001	583,800	700,500	1,335,000	58,000	1,751,000	58,000	25,000			3,927,500	500,000	584,000	584,000
	99999 RF1		SNCR1	yes	no	20	2001	2,817,900									0	140,000	141,000	141,000
	99999 LK1		ESP1	yes	no	20	2001	1,498,000	59,900	748,700	119,800	15,000	29,900	30,000			1,003,300	300,000	295,000	150,000

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Complete the table below for air poll
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Instruction:			Calculated by summing items in C	TOTAL Capital Investment (TCI) = (A + B + C) Calculated	OPERATING COSTS Year of the operating costs. Operating costs should be provided for the last 12 month period (calendar or fiscal year) for which the mill has data.	Please identify any major maintenance materials or parts and specify the approximate annual expenditures per item used for the APCD.						Specify total annual labor hours and $/hr		Calculated	Purchased electricity costs (specify kWh/yr and $/kWh)		Calculated	Purchased water usage		Calculated	Specify if natural gas or propane used (select from menu).	Specify scf/yr and $/scf.		Calculated	Steam costs (specify lb per year and $/lb)	
Survey overview reference:				**TOTAL Capital Investment (TCI)**		**D.** Maintenance materials and replacement parts						**E.** Operation/maintenance labor costs			**F.** Utility costs										
Field:	**Start-up**	**Performance test**	**Contingencies**	**Total Indirect Costs, Total $**	**TOTAL Capital Investment, Total $**	**Base year for operating costs (XXXX)**	**Item 1 description**	**Item 1 cost, $/yr**	**Item 2 description**	**Item 2 cost, $/yr**	**Item 3 description**	**Item 3 cost, $/yr**	**Item 4 description**	**Item 4 cost, $/yr**	**Annual maintenance labor hours**	**Maintenance labor rate, $/hr**	**Annual labor costs, $/yr**	**Electricity, kWhr/yr**	**Electricity rate, $/KW**	**Annual electricity costs, $/yr**	**Water, gal/yr**	**Water rate, $/gal**	**Annual water costs, $/yr**	**Fuel used**	**Amount used, scf/yr**	**Fuel rate, $/scf**	**Annual fuel costs, $/yr**	**Steam use, lb/yr**	**Steam rate, $/lb**
Example entry:	58,000	36,000	175,000	1,937,000	6,448,300	2001	Various parts	53,000							1,050	25.4	26,670	10,963,120	0.05	548,156	74,592,000	0.00058	43,263.36						
	78,000			500,000	3,317,000	2001	Parts	178,980							1,050	25.4	26,670	92,740	0.05	4,637	1,512,000	0.00058	877						
	15,000	15,000	75,000	850,000	3,351,300	2001	Materials	101,000							800	25.4	20,320	1,571,700	0.05	78,585									

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Instruction:	Calculated		List any additives, chemicals, or sorbents needed to operate the APCD	Enter the amount of additive, chemical, or sorbent used. Include units. If multiple types are used, enter the amount separated by commas (e.g., NaOH-4 tpy, KMnO4-0.5 tpy)	Enter estimated annual costs for any additives, chemicals, or sorbents needed to operate the APCD	Enter estimated annual costs for disposal of any additives, chemicals, or sorbents needed to operate the APCD	Other operating cost description		TOTAL Operating Costs = sum of D through I $/yr Calculated
Survey overview reference:			**G. Additive/chemical/sorbent costs**			**H. Additive/chemical/sorbent disposal**	**I. Other**		**TOTAL Operating Costs**
Field:	**Annual steam costs, $/yr**	**Waste treatment or disposal costs, $/yr**	**Additive/chemical/sorbent type**	**Additive/chemical/sorbent amount**	**Additive/chemical/sorbent costs, $/year**	**Additive/chemical/sorbent disposal, $/yr**	**Describe other operating cost**	**Other, $/yr**	**TOTAL Operating Costs, $**
Example entry:		3189.64	50% caustic soda	380,000 gal/yr	390,000	16,000	Liquid analysis	1,800	1,082,079
			urea	256 tpy	57,600				268,764
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Complete this table for any modifications to processes or equipment in the chemical recovery area (other than installation of new APCD's) that were made in 1998 or more recently to reduce air emissions of HAP/organics, PM, NOx, SO2, CO, or TRS or to improve combustion efficiency.
UK = Unknown. **NA = Not Applicable**. See instruction document for details on use of these terms.

Instruction:	Provide for all entries. This should match NEI Site ID	Enter a description of process or equipment change for which information is being provided	Enter Emission Unit ID(s) affected by the process or equipment change	Enter APCD_ID affected by the process or equipment change	Was the process or equipment change implemented on existing emission units and/or APCD in the process line? Select yes/no	Was the APCD installed at the same time the emission unit was newly installed? Select yes/no	Enter the year (e.g., 2006). This will be used as the base year for scaling of costs to current levels.	Enter number of days of lost pulp production required to implement the process or equipment change. If the change occurred during scheduled downtime that would have occurred regardless of the process or equipment change, then do not include the scheduled downtime. Only the days of lost production that can be specifically attributed to the process or equipment change are of interest.	Please distinguish between one-time capital and annual operating costs where appropriate. If a breakdown of the specific capital or annual cost items is available, please provide as a separate attachment. Enter the total capital cost associated with the process or equipment change in this cell.	Provide changes in annual operating costs (if estimated). Otherwise, leave blank. Include annual operating costs that are an increase to prior operating costs (e.g., additional operating costs due to addition of ESP fields). If the process or equipment change resulted in decreased annual operating costs, then indicate the cost decrease as a negative number.
Survey overview reference:										
Field:	**NEI Site ID**	**Process or equipment change description**	**Emission Unit ID**	**APCD_ID**	**Retrofit to existing equipment in an existing process line?**	**Change implemented in a new process line?**	**Year of process or equipment change (XXXX)**	**Number of days process shut down in order to make the change (days of lost production)**	**Total capital cost, $**	**Total annual operating cost, $/yr**
Example entry:	99999	Changing from a DCE to NDCE recovery furnace	RF2		yes	no	2001	20	19664100	187350
	99999	Changing from a wet to a dry bottom ESP	RF1	ESP1	yes	no	2001	3	3266300	88000
	99999	Adding fields to an existing ESP	RF1	ESP1	yes	no	2001	3	5372400	214000
	99999	Installation of quarterary air ports in the recovery furnace to improve combustion efficiency	RF1		yes	no	2001	3	624140	39800
	99999	Replacing a recovery furnace with a black liquor gasification system	RF2		yes	no	2001	90	150000000	-16340100

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Complete this table for any modifications to processe
or more recently to reduce air emissions of HAP/or
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Instruction:	Describe the air pollutants affected and emissions reduction achieved. indicate the basis for emissions reduction reported (e.g., air emissions testing before and after modification). You may provide this information as a separate attachment to your response if it does not fit here.
Survey overview reference:	
Field:	**Emission reduction achieved (if quantified)**
Example entry:	gaseous organic HAP - 80%
	Methanol - 48%
	PM -66%
	NOx - 20%
	HAP-98%; PM-92%