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Subject: Revised Costs/Impacts of the Subpart MM Residual Risk and Technology Review for Promulgation
EPA Contract No. EP-D-11-084; Work Assignment No. 4-05

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I. Introduction

Section 112(f)(2) of the Clean Air Act (CAA) directs the U.S. Environmental Protection Agency (EPA) to conduct risk assessments on each source category subject to maximum achievable control technology (MACT) standards and determine if additional standards are needed to reduce residual risks from the remaining hazardous air pollutant (HAP) emissions from the category. Section 112(d)(6) of the CAA requires the EPA to review and revise the MACT standards, as necessary, taking into account developments in practices, processes, and control technologies. The section 112(f)(2) residual risk review and section 112(d)(6) technology review are to be done 8 years after promulgation. The national emissions standards for hazardous air pollutants (NESHAP) for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills (40 CFR part 63, subpart MM), originally promulgated on January 12, 2001, are due for review under CAA sections 112(f)(2) and 112(d)(6). To address a lawsuit filed by Sierra Club and California Communities Against Toxics, the subpart MM risk and technology review (RTR) package was proposed in the *Federal Register* on December 30, 2016 (81 FR 97046) and is scheduled to be promulgated by October 1, 2017. A 60-day period ending February 28, 2017 was provided for the public to submit comments on the proposal to EPA.

An earlier memorandum documented the costs, emissions reductions, and environmental and energy impacts of the regulatory options evaluated for the subpart MM RTR proposal. (RTI 2016a) In response to public comments on the proposal, the regulatory options were revised where necessary. A separate memorandum documents the data reviewed for these revised options. (EPA 2017a) The purpose of this memorandum is to document the costs and impacts for the revised options being presented at promulgation. The regulatory options are shown in Table 1 below.

Table 1. Baseline Technologies, Regulatory Options, and Cost Basis for Subpart MM RTR Promulgation

Process unit type	Baseline technology and subpart MM standard	Promulgation options	Cost basis for promulgation options
1. Kraft and soda recovery furnaces - opacity	35% opacity, 20% corrective action level, 6% monitoring allowance, quarterly reporting (existing sources) 20% opacity and corrective action level, 6% monitoring allowance, quarterly reporting (new sources)	RF Opacity Option A (proposed): 20% opacity, 2% monitoring allowance, semiannual reporting. (Consistent with subpart BBa) ¹	-15 existing units need ESP upgrades -No new units need ESP upgrades
		RF Opacity Option B: 20% opacity, 6% monitoring allowance, semiannual reporting.	-5 existing units need ESP upgrades -No new units need ESP upgrades
		RF Opacity Option C: 35% opacity, 20% corrective action level, 2% monitoring allowance, semiannual reporting	No units need ESP upgrades; no costs/impacts
2. Lime kilns with ESP controls - opacity	20% opacity and corrective action level with 6% allowance, quarterly reporting	LK Opacity Option A (proposed): 20% opacity with a 1% monitoring allowance, semiannual reporting. (Consistent with subpart BBa) ¹	2 units need ESP upgrades
		LK Opacity Option B: 20% opacity with a 3% monitoring allowance, semiannual reporting.	No units need ESP upgrades; no costs/impacts
3. ESP-controlled recovery furnaces and lime kilns	No ESP parameter monitoring (opacity monitoring only)	ESP Option A (proposed): Add ESP parameter monitoring (voltage and current) to indicate compliance during times when the opacity monitoring allowance is used for existing and new sources	All units with ESPs
		ESP Option B: Replace with requirement to maintain proper operation of ESP AVC	All units with ESPs

RF = recovery furnace, ESP = electrostatic precipitator, LK = lime kiln, AVC = automatic voltage control

1. 40 CFR part 60, subpart BBa: Standards of Performance for Kraft Pulp Mill Affected Sources for Which Construction, Reconstruction, or Modification Commenced After May 23, 2013.

II. Costs of Options for Subpart MM RTR Promulgation

The costs associated with the regulatory options for subpart MM RTR promulgation are incremental costs (i.e., the additional cost associated with complying with a more stringent limit or additional requirement beyond that required under the current subpart MM MACT).

Appendix A at the end of this memorandum presents the mill-specific and nationwide costs and emissions reductions for each of these regulatory options.

A. Costs of Opacity Options for Kraft/Soda Recovery Furnaces and Lime Kilns

Available continuous opacity monitoring system (COMS) data for recovery furnaces and lime kilns were analyzed to determine the emission units affected by the opacity options for

recovery furnaces and lime kilns. The results of these analyses are documented in a separate memorandum. (EPA 2017a) All recovery furnaces and lime kilns controlled with electrostatic precipitators (ESPs) that did not meet their respective opacity options were assumed to require an ESP upgrade. This is a change from proposal, where only improved annual maintenance and testing were applied for recovery furnaces and lime kilns already achieving a particulate matter (PM) performance level associated with an upgraded ESP. Commenters on the proposed rule expressed concern that EPA was underestimating ESP upgrade costs (EPA 2017b), so a decision was made to conservatively estimate costs for the more stringent controls for these units. Recovery furnace ESP upgrade costs were based on adding two parallel fields to an existing ESP. For lime kilns, the costs were based on adding one field to the existing ESP.

To further address commenter concerns about ESP upgrade costs (particularly for recovery furnaces), RTI revised the ESP upgrade costs for recovery furnaces to incorporate capital cost estimates of \$11 million and \$10 to \$16 million provided by two commenters (EPA 2017b). The costs from the commenters were extrapolated to a common model unit size (3.7 million pounds of black liquor solids per day [lb BLS/d]) using the six-tenths cost rule (shown in Equation 1 below) and then averaged together.

Equation 1 – Six-tenths cost rule:
 $Cost_1/Cost_2 = (Unit\ size_1/Unit\ size_2)^{0.6}$

The ESP upgrade capital costs were then scaled to apply to each affected unit in the inventory using the six-tenths cost rule. The capital cost equations for the recovery furnace and lime kiln ESP upgrades are documented in Appendix B.

The ESP upgrade annual costs were estimated using a combination of industry and EPA cost algorithms. (BE&K 2001, EPA 2002) The industry annual cost algorithms included costs for maintenance and materials, energy, labor, and testing, and the EPA annual cost algorithms included costs for property taxes, insurance, and administrative charges and capital recovery:

- The maintenance and materials cost was calculated as 2 percent of the total installed cost for recovery furnaces and 1 percent of the total installed cost for lime kilns. (BE&K 2001)
- The energy cost was calculated based on 411 kilowatts (kW) of power for recovery furnaces, 100 kW of power for lime kilns, 70 percent power usage, and 350 days per year (d/yr) (BE&K 2001), and was updated using the latest electricity price (\$0.0640 per kilowatt-hour [kWh]) from the U.S. Energy Information Administration (EIA) for the entire U.S (EIA 2017).
- The labor cost was calculated based on 1.5 hours per day (hr/d) and 350 d/yr (BE&K 2001), and was updated using the latest labor rate (\$26.96/hr) from the U.S. Bureau of Labor Statistics (BLS) for Plant and System Operators for the North American Industry Classification System (NAICS) code 322100 (Pulp, Paper, and Paperboard Mills) (BLS 2017).
- The testing cost for each recovery furnace and lime kiln was updated from \$5,000 (BE&K 2001) to \$10,000 (see Table B-3) to account for PM testing costs.

- The costs for property taxes, insurance, and administrative charges were calculated as 4 percent of total installed cost. (EPA 2002)
- Capital recovery was calculated as the product of a capital recovery factor (CRF) and total capital cost. (EPA 2002) The CRF was determined using Equation 2 below:

Equation 2 – Capital recovery factor:

$$\text{CRF} = [\text{interest rate} * (1 + \text{interest rate})^{\text{equip. life}}] / [(1 + \text{interest rate})^{\text{equip. life}} - 1]$$

RTI estimated the capital recovery cost at two interest rates (3 percent and 7 percent), consistent with recent guidance from the Office of Management and Budget (OMB) (OMB 2017), and assumed a 20-year remaining equipment life (EPA 2002).

The base year for costs was changed from 2015 to 2016 based on recent OMB guidance. (OMB 2017) The annual cost equations for the recovery furnace and lime kiln ESP upgrades are documented in Appendix B. The capital and annual costs were applied to each impacted unit and summed to arrive at nationwide costs.

B. ESP Parameter Monitoring Costs for Kraft/Soda Furnaces and Lime Kilns

The subpart MM RTR proposal added a requirement for monitoring of ESP secondary voltage and secondary current to indicate ongoing compliance at all times, including times when the opacity monitoring allowance is used—see ESP Option A in row 3 of Table 1 above. Several commenters stated that this requirement should be removed or revised and provided information suggesting that EPA underestimated the ESP parameter monitoring costs. (EPA 2017b) At proposal, the capital cost for ESP parameter monitoring was estimated to be \$31,000, and the annualized cost was \$7,600 at 7 percent interest (equivalent to \$6,800 at 3 percent interest). (RTI 2013) One commenter stated that, based on their members’ experience, it would actually cost \$80,000 to \$100,000 in capital costs to properly implement this option. (EPA 2017b) Using the midpoint of this cost estimate and applying it to all 183 recovery furnace and lime kiln ESPs currently in operation, RTI estimated that adding ESP parameter monitoring for existing sources would total \$16 million in capital costs nationwide. To calculate annual costs, RTI used the same cost algorithms used for the proposal cost analysis (RTI 2016a):

- The maintenance and materials cost was calculated as 3.5 percent of total capital cost.
- The overhead cost was calculated as 6 percent of total capital cost.
- The costs for property taxes, insurance, and administrative charges were calculated as 4 percent of total capital cost.
- Capital recovery was calculated as the product of a CRF and total capital cost, assuming a 15-year equipment life and using two interest rates (3 percent and 7 percent), consistent with recent OMB guidance (OMB 2017).

RTI estimated annual costs of \$19,700 at 3 percent interest and \$22,000 at 7 percent interest. Applying these annual costs to the 183 ESPs, RTI estimated nationwide annual costs of \$3.6 to \$4.0 million (at 3 and 7 percent interest, respectively).

Multiple commenters objected to the ESP parameter monitoring provisions and suggested that EPA should instead require proper operation of the ESP’s automatic voltage control (AVC)

as a work practice. (EPA 2017b) Therefore, RTI created a second option for consideration to replace ESP parameter monitoring with a requirement to maintain proper operation of the ESP AVC—see ESP Option B in row 3 of Table 1 above. Because existing ESPs already have AVCs, there would be no estimated equipment cost. Only recordkeeping costs were estimated for this requirement (see section II.D below).

C. Periodic Emissions Testing Costs for All Subpart MM Emission Units

Emissions compliance testing costs were treated as capital costs because mills will contract with a testing company to perform the testing. Consistent with the latest OMB guidance (OMB 2017), the capital costs were annualized at 3 percent and 7 percent interest over the 5-year testing period. Table 2 presents estimated emissions testing costs. The testing costs in Table 2 include costs associated with entering information into the EPA’s Electronic Reporting Tool (ERT) for the test methods currently supported in the ERT (Method 5, Method 25A, and Method 308). The basis for the testing costs is presented in Appendix B.

Table 2. Emissions Testing Costs by Mill Process

Process unit type	Subpart MM standard	Test method (surrogate pollutant)	Capital cost per test every 5 years	Annualized capital cost per test, \$/yr ¹	
				3% interest	7% interest
Kraft and soda recovery furnaces, lime kilns, and SDTs	Metal HAP	Method 5 (PM)	\$10,000	\$2,180	\$2,440
Sulfite mill chemical recovery combustion units	Metal HAP	Method 5 (PM)	\$10,000	\$2,180	\$2,440
Kraft and soda recovery furnaces (new sources)	Gaseous organic HAP	Method 308 (Methanol)	\$14,000	\$3,060	\$3,410
Semichemical mill chemical recovery combustion units	Gaseous organic HAP	Method 25A (THC)	\$14,000	\$3,060	\$3,410

\$/yr = dollars per year, SDT = smelt dissolving tank, HAP = hazardous air pollutant, PM = particulate matter, THC = total hydrocarbon

1. Annualized over the 5-year testing period at 3% interest (CRF = 0.218) and 7% interest (CRF = 0.244).

D. Labor-related Costs

The labor-related costs estimated include changes in operating labor associated with equipment changes or incremental reporting and recordkeeping (R&R) changes. Operating labor costs are included in the annual equipment operating costs. Incremental R&R labor hours and costs were developed as part of the Paperwork Reduction Act supporting statement. Reporting and recordkeeping labor costs include (1) the initial R&R labor costs for data acquisition system (DAS) adjustments to include startup and shutdown periods and the revised opacity monitoring allowances, and to transition to electronic excess emissions reporting, (2) the annual R&R labor cost for ESP Option A, and (3) the annual recordkeeping labor cost for ESP Option B. Details on these cost estimates, as well as an accounting for the labor hours involved, can be found in Table 3 of this memorandum and in the supporting statement for subpart MM. (EPA 2017c)

Table 3. Incremental R&R Costs for Inclusion in the Cost Impact Analysis and Estimates of Labor Impacts

Labor cost item	Incremental costs, \$	Incremental annual labor hours	Mills impacted
Initial labor costs			
R&R: Time to adjust existing DAS at existing sources to include startup and shutdown periods and the revised opacity monitoring allowances, and to transition to electronic excess emissions reporting (80 hr x \$124.23/hr composite labor rate used in supporting statement)	\$9,940 per mill	80 hr	All mills
Annual labor costs			
ESP upgrade operating labor (1.5 hr/d x 350 d/yr)	Included in equipment costs	525 hr/yr	Kraft and soda mills requiring ESP upgrades to meet the opacity options
R&R for ESP Option A: ESP parameter monitoring labor (0.25 hr/d x 350 d/yr x \$124.23/hr composite labor rate used in supporting statement)	\$10,870 per ESP	88 hr/yr	All kraft and soda mills
Recordkeeping for ESP Option B: ESP AVC recordkeeping labor (8 hr/semiannual period x \$124.23/hr composite labor rate used in supporting statement)	\$2,000 per ESP	16 hr/yr	All kraft and soda mills

R&R = reporting and recordkeeping, DAS = data acquisition system, hr = hours, ESP = electrostatic precipitator, d = days, yr = years, AVC = automatic voltage control

III. Emissions Reductions

Emissions reductions were estimated for the regulatory options identified in Table 1. Appendix C at the end of this memorandum presents the mill-specific and nationwide emissions reductions for each of the regulatory options.

Although no changes are under consideration as part of the RTR for the PM metal HAP limits, ESP upgrades to meet a tighter opacity monitoring limit would have the effect of reducing PM emissions. Recovery furnace upgrade costs were estimated for adding two parallel fields to an existing ESP resulting in a PM performance level of 0.015 grain per dry standard cubic foot (gr/dscf) at 8 percent oxygen (O₂). For lime kilns, the costs were based on adding one field to the existing ESP to achieve a PM performance level of 0.01 gr/dscf at 10 percent O₂. (BE&K 2001) The potential reduction in PM emissions for each emission unit expected to require an ESP upgrade was estimated by subtracting the PM limit expected to be achieved by the upgraded ESP from the lower of the current PM permit limit or the actual PM performance level for the emission unit. The difference in gr/dscf was converted to tons per year (tpy) using the gas flow rate for each affected unit, as noted in Equations 3 and 4 below.

Equation 3 – Potential PM reduction for recovery furnaces:

Potential recovery furnace PM reduction (tpy) = (the lower of permitted or actual gr/dscf - 0.015 gr/dscf @ 8% O₂) x gas flow rate (dscfm) x (60 min/hr) x (24 hr/d) x (350 d/yr) / (7000 gr/lb) / (2000 lb/ton)

Equation 4 – Potential PM reduction for lime kilns:

Potential lime kiln PM reduction (tpy) = (the lower of permitted or actual gr/dscf - 0.01 gr/dscf @ 10% O₂) x gas flow rate (dscfm) x (60 min/hr) x (24 hr/d) x (350 d/yr) / (7000 gr/lb) / (2000 lb/ton)

The estimated unit-specific PM reductions were summed to arrive at the potential nationwide PM emissions reduction associated with equipment upgrades to achieve the opacity regulatory options. The potential fine PM (PM_{2.5}) reductions were estimated from the PM reductions by applying the following percentages of PM_{2.5} to PM: 45 percent for non-direct contact evaporator (NDCE) recovery furnaces, 59 percent for direct contact evaporator (DCE) recovery furnaces, and 40 percent for lime kilns. (NCASI 2002)

Emissions of HAP metals only comprise a small fraction of PM emissions. As documented in Appendix B, less than half of a percent of the PM emissions are comprised of HAP metals (0.03 percent for recovery furnaces, and 0.48 percent for lime kilns). (NCASI 2004, NCASI 2010)

No emissions reductions, labor, energy, or secondary air impacts were estimated for emission units already meeting actual PM performance levels expected to be achieved by upgraded ESPs. However, as mentioned previously, ESP upgrade costs were still assigned to these units.

IV. Energy and Other Environmental Impacts

Energy impacts and other environmental impacts (secondary air emissions, solid waste impacts) were estimated for the regulatory options identified in Table 1. Documentation of the impacts calculation methodology is presented in Appendices B and D. The mill-specific and nationwide impacts for each of the regulatory options are presented in Appendix C.

A. Energy Impacts

The energy impacts of the regulatory options for each affected emission unit were estimated by first dividing the electricity cost/savings of each option by the latest electricity price of \$0.0640/kWh (EIA 2017) and dividing the steam cost/savings (if applicable) by a steam cost of \$0.005/lb steam (BE&K 2001). The annual amount of energy, in million British thermal units per year (MMBtu/yr), needed to generate the electricity was determined by dividing the electricity (kWh/yr) by a nationwide average power plant efficiency of 36 percent and multiplying by a conversion factor of 3,415 Btu/kWh. The estimated amount of energy from the steam (in lb steam/yr) was converted to MMBtu/yr assuming a conversion factor of 1,200 Btu/lb steam (BE&K 2001).

The efficiency for each type of power plant was determined by dividing the heat content of electricity (3,415 Btu/kWh) by the heat rate for each type of plant--10,415 Btu/kWh for coal; 8,185 Btu/kWh for natural gas; 10,452 Btu/kWh for nuclear power; and 9,756 Btu/kWh for renewable energy. The nationwide average power plant efficiency was determined as a weighted average of these power plant efficiencies, based on the projected fuel mix for a 2020 reference case (MJB&A 2016) from Version 5.15 of EPA's Integrated Planning Model (IPM), which is a forecast model of the U.S. electric power sector. The projected fuel mix is 31 percent coal, 33

percent natural gas/other, 18 percent nuclear, and 18 percent renewable/hydroelectric (MJB&A 2016).

Because energy impacts are a function of gas flow rate, and gas flow rate is proportional to a capacity parameter such as black liquor solids firing rate, the energy impacts were adapted to apply to each affected emission unit in the inventory by ratioing the black liquor solids firing rate. The algorithms in Appendix B include the energy impacts for each model unit.

B. Secondary Air Emissions

Once the energy impacts were determined, the associated secondary air emissions were estimated. Secondary emissions typically include the criteria air pollutant emissions—PM, carbon monoxide (CO), nitrogen oxides (NO_x), and sulfur dioxide (SO₂)—that result from the generation of electricity and steam associated with compliance with regulatory options. For purposes of this analysis, the electricity and steam were assumed to be derived from offsite utilities, rather than generated onsite. Secondary emissions estimates were also developed for mercury (Hg) and the greenhouse gases carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) that are expected to be emitted from utilities. The secondary emissions were estimated using Equation 5 as follows, by multiplying emission factors for the pollutants by the energy impacts, assuming a specific mix of fuels to generate the needed electricity.

Equation 5 – Secondary emissions:

Secondary emissions (tpy) = energy impacts (MMBtu/yr) x [emission factor for solid fuel (lb/MMBtu) x (% of generation for solid fuel) + emission factor for natural gas (lb/MMBtu) x (% of generation for oil/natural gas and other fuel)] x 1 ton/2000 lb

Global warming potentials of 1 for CO₂, 25 for CH₄, and 298 for N₂O were used to estimate CO₂ equivalent (CO₂e) emissions. Appendix D of this memorandum provides the emission factors and other factors used in the energy and secondary impacts calculations and documents the sources of the factors.

Because secondary air emissions are based on energy impacts, and energy impacts are a function of gas flow rate, and gas flow rate is proportional to a capacity parameter such as black liquor solids firing rate, the secondary air emissions were adapted to apply to each affected emission unit in the inventory by ratioing the black liquor solids firing rate.

C. Solid Waste Impacts

An evaluation was also conducted regarding whether the recovery furnace and lime kiln opacity options would have any solid waste impacts. Both opacity options would reduce opacity monitoring allowances, which could require increased PM control from ESP upgrades.

As noted in the technical support document for the subpart MM proposal (EPA 1996), the PM catch from the recovery furnace ESP is primarily sodium sulfate (i.e., salt cake) and sodium carbonate. These chemicals are subsequently added to the concentrated black liquor in a mix tank (i.e., recycled back into the process) in order to conserve chemicals. (EPA 1996) The PM catch from the lime kiln ESP is primarily sodium salts, calcium carbonate, and calcium oxide (CaO). The PM catch from the ESP is returned directly to the lime kiln. (EPA 1996) The

recovery process and lime kiln are expected to have sufficient capacity to absorb the additional PM resulting from the ESP upgrade. Thus, no solid waste disposal impacts are expected under either opacity option.

D. Wastewater Impacts

There are no incremental wastewater impacts associated with the regulatory options for subpart MM RTR promulgation.

V. **Nationwide Costs and Impacts for the Subpart MM RTR**

The costs associated with the subpart MM RTR regulatory options are incremental costs (i.e., the additional cost associated with complying with a more stringent limit or additional requirement beyond that required under the current subpart MM rule). Appendix A presents the mill-specific and nationwide costs and emissions reductions for each of the promulgation options. Table 4 summarizes the nationwide incremental costs, emissions reductions, and cost effectiveness of each option. Table 5 presents a summary of nationwide incremental labor, energy, and secondary air impacts for each of the promulgation options.

A. Incorporation of New Sources

As described in a separate memorandum (RTI 2016b), no new pulp mills are projected to be constructed during the 5-year time period from 2016 to 2021. The only new sources are replacement emission units projected to be installed at three existing kraft pulp mills. It is estimated that the three DCE recovery furnaces (and associated smelt dissolving tanks [SDTs]) will be replaced with NDCE recovery furnaces and new SDTs, one black liquor oxidation (BLO) system will be eliminated and another BLO system will reduce throughout, and one lime kiln will be replaced. Table A-1 in Appendix A summarizes the new sources projected to be constructed at existing mills and the characteristics of the new source replacement units. The opacity regulatory options would result in few incremental costs for the mills with projected new sources. Costs associated with the reduced (20 percent) opacity limit would have been incurred in the absence of the RTR regulatory action. Thus, the only incremental costs assessed for the new sources are the periodic emissions testing costs, and incremental reporting and recordkeeping costs for all subpart MM mills. Because the new source impacts are incurred at existing facilities, they are included in the totals in Tables 4 and 5.

B. Opacity and Associated PM Reductions

More stringent opacity monitoring limits are under consideration for ESP-controlled recovery furnaces and lime kilns under the RTR based on analysis of COMS data. Potentially impacted units were identified through analysis of the COMS considering the promulgation opacity options, averaging period (semiannual), and monitoring allowance. The costs of the promulgation opacity options are summarized in Table 4. Cost estimates were developed for ESP-controlled recovery furnaces and lime kilns not consistently meeting each opacity option in the year of opacity data provided in response to the 2011 pulp and paper information collection request (ICR). (EPA 2017a)

While no specific HAP metals options are under consideration for the RTR, ESP upgrades estimated to be needed to meet a tighter opacity monitoring limit would have the effect of reducing PM and HAP metals emissions. Cost effectiveness values were developed in terms of dollars per ton of PM reduced. No emissions reductions were estimated for units already achieving a PM performance level associated with an upgraded ESP. Nevertheless, costs for these units to meet the opacity options were conservatively estimated based on an ESP upgrade. The estimated costs, emissions reductions, and cost effectiveness for the promulgation opacity options are presented in Table 4.

C. Periodic Testing and Incremental R&R Costs

Excluding those subpart MM sources that already conduct periodic testing (see Table A-4 in Appendix A), it's estimated that 73 (68 percent) of the 107 facilities subject to subpart MM would be impacted by the periodic testing costs. The capital costs per facility for periodic testing range from \$10,000 to \$80,000, for a nationwide total of \$2.8 million from the 73 impacted facilities. The annualized costs per facility for periodic testing range from \$2,180 to \$17,440 at 3 percent interest and \$2,440 to \$19,520 at 7 percent interest, for a nationwide total of \$0.60 to \$0.67 million (at 3 and 7 percent interest) from the 73 impacted facilities.

As noted previously, the incremental R&R costs associated with changes to the subpart MM RTR include time to adjust existing DAS at existing sources to include startup and shutdown periods and the revised opacity monitoring allowances, and to transition to electronic excess emissions reporting, the annual R&R labor cost for ESP Option A, and the annual recordkeeping labor cost for ESP Option B. The nationwide incremental R&R costs are estimated to be \$1.1 million in initial (one-time) costs for the DAS adjustments and \$2.0 million and \$0.4 million in annual labor costs for ESP Options A and B, respectively. All 107 facilities subject to subpart MM would be impacted by the incremental initial R&R costs, and 96 mills with ESP-controlled recovery furnaces and lime kilns would be impacted by the incremental annual R&R labor costs.

D. Labor, Energy, and Secondary Air Impacts

As shown in Table 5, the opacity options and ESP options would increase labor hours. Operating labor costs are embedded in the equipment costs included in Table 4. Table 5 shows the incremental R&R labor costs associated with the DAS adjustments and ESP options, as well as the increased electricity use and secondary air impacts associated with the opacity options.

Table 4. Summary of Nationwide Incremental Costs and Emissions Reductions for Subpart MM RTR Promulgation

Promulgation option	No. of mills impacted	2016\$		Baseline HAP/HAP surrogate from impacted units, tpy ²	Incremental HAP/HAP surrogate emissions reduction, tpy ³	Cost effectiveness \$/ton ³
		Capital costs, \$million	Annualized costs, \$million/yr ¹			
RF opacity options						
Option A (proposed): 20% opacity, 2% MA, semiannual reporting (Consistent with subpart BBa) ⁴	11 mills (15 units)	\$124	\$18 - 21	PM: 1,665 HAP metals: 0.50	PM: 235 HAP metals: 0.07	PM: \$77,000 - 91,400 HAP metals: \$257 - 305 million
Option B: 20% opacity, 6% MA, semiannual reporting	5 mills (5 units)	\$43	\$6.3 - 7.4	PM: 628 HAP metals: 0.19	PM: 131 HAP metals: 0.04	PM: \$47,800 - 56,700 HAP metals: \$159 - 189 million
Option C: 35% opacity, 20% corrective action level, 2% MA, semiannual reporting	0 mills	\$0	\$0	0	0	NA
LK opacity options						
Option A (proposed): 20% opacity, 1% MA, semiannual reporting (Consistent with subpart BBa) ⁴	2 mills (2 units)	\$4.8	\$0.73 - 0.87	PM: 11 HAP metals: 0.05	0	NA
Option B: 20% opacity, 3% MA, semiannual reporting	0 mills	\$0	\$0	0	0	NA
ESP options						
Option A (proposed): Add ESP parameter monitoring	96 ⁵	\$16	\$3.6 - 4.0			
Option B: Requirement to maintain proper operation of ESP AVC	96 ⁵	\$0	\$0			
Emissions testing						
5-year periodic testing	107	\$2.8 ⁶	\$0.60 - 0.67			
Incremental R&R						
DAS adjustments (initial)	107	\$1.1 ⁷				
ESP Option A (annual)	96 ⁵		\$2.0 ⁸			
ESP Option B (annual)	96 ⁵		\$0.37 ⁹			

HAP = hazardous air pollutant, tpy = tons per year, MA = monitoring allowance, RF = recovery furnace, PM = particulate matter, HAP = hazardous air pollutant, LK = lime kiln, ESP = electrostatic precipitator, AVC = automatic voltage control, R&R = reporting and recordkeeping, DAS = data acquisition system

1. Annualized capital costs estimated at 3% and 7% interest, respectively.

2. The baseline emissions value provided in the table is the baseline for the emission units impacted by the regulatory options.

3. As documented in Appendix B, 0.03% of recovery furnace PM emissions and 0.48% of lime kiln PM emissions are comprised of HAP metals. Thus, the emissions reductions for HAP metals are orders of magnitude less than that shown for PM, and the cost effectiveness for HAP metals is orders of magnitude greater than that shown for PM. Based on PM_{2.5} emission factors, the PM_{2.5} emissions reductions are 112 tpy for RF Opacity Option A and 59 tpy for RF Opacity Option B; the PM_{2.5} cost effectiveness values are \$161,000-191,000 per ton for RF Opacity Option A and \$106,000-126,000 per ton for RF Opacity Option B at 3% and 7% interest, respectively.

4. 40 CFR part 60, subpart BBa: Standards of Performance for Kraft Pulp Mill Affected Sources for Which Construction, Reconstruction, or Modification Commenced After May 23, 2013.

5 All mills with ESP-controlled recovery furnaces and lime kilns.

6. The total recurring cost for testing every 5 years is shown as a capital cost. Annualized costs distributing the capital over 5 years are also presented.

7. Reporting and recordkeeping costs include one-time labor costs for DAS adjustments to include startup and shutdown periods, compliance with revised opacity monitoring allowances, and to provide output for electronic reporting.

8. The annualized reporting and recordkeeping costs include ongoing labor costs associated with ESP parameter monitoring (ESP Option A).

9. The annualized recordkeeping costs include ongoing labor costs associated with proper operation of ESP AVC (ESP Option B).

Table 5. Summary of Nationwide Incremental Labor, Energy, and Secondary Air Impacts for Subpart MM RTR Promulgation

Promulgation option	Labor hours	Energy impacts, MMBtu/yr	Secondary air impacts, tpy					
			PM and PM _{2.5}	CO	NOx	SO ₂	CO _{2e}	Hg
RF opacity options								
Option A (proposed): 20% opacity, 2% MA, semiannual reporting (Consistent with subpart BBa) ¹	7,875 hr/yr	294,101	PM: 1.4 PM _{2.5} : 0.5	4.7	21	53	15,000	0.2
Option B: 20% opacity, 6% MA, semiannual reporting	2,625 hr/yr	99,581	PM: 0.5 PM _{2.5} : 0.2	1.6	7.3	18	5,100	0.06
Option C: 35% opacity, 20% corrective action level, 2% MA, semiannual reporting	0 hr/yr	0	0	0	0	0	0	0
LK opacity options								
Option A (proposed): 20% opacity, 1% MA, semiannual reporting (Consistent with subpart BBa) ¹	1,050 hr/yr	18,435	PM: 0.09 PM _{2.5} : 0.03	0.3	1.3	3.3	940	0.01
Option B: 20% opacity, 3% MA, semiannual reporting	0 hr/yr	0	0	0	0	0	0	0
Incremental R&R								
DAS adjustments (initial)	8,560 hr ²							
ESP Option A (annual)	16,104 hr/yr ³							
ESP Option B (annual)	2,928 hr/yr ⁴							

MMBtu/yr = million British thermal units per year, tpy = tons per year, PM = particulate matter, PM_{2.5} = fine PM, CO = carbon monoxide, NOx = nitrogen oxides, SO₂ = sulfur dioxide, CO_{2e} = carbon dioxide equivalent, Hg = mercury, RF = recovery furnace, MA = monitoring allowance, hr/yr = hours per year, LK = lime kiln, R&R = reporting and recordkeeping, DAS = data acquisition system, ESP = electrostatic precipitator.

1. 40 CFR part 60, subpart BBa: Standards of Performance for Kraft Pulp Mill Affected Sources for Which Construction, Reconstruction, or Modification Commenced After May 23, 2013.
2. Initial, one-time labor for DAS adjustments to include startup and shutdown periods, compliance with revised opacity monitoring allowances, and to provide output for electronic reporting.
3. Ongoing labor associated with ESP parameter monitoring (ESP Option A).
4. Ongoing labor associated with proper operation of ESP AVC (ESP Option B).

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Appendix A

Mill-specific Costs for the Mills Impacted by Subpart MM RTR Regulatory Options

Table A-1. Summary of Projected New or Reconstructed Process Units for Inclusion in the NESHAP RTR Economic Impacts Analysis

Table A-2. Total Cost of Subpart MM RTR Regulatory Options by Facility

Table A-3. Mill Total Costs and Emissions Reductions for Opacity Options

Table A-4. Unit-specific Costs and Impacts

Table A-1. Summary of Projected New or Reconstructed Process Units for Inclusion in the NESHAP RTR Economic Impacts Analysis (RTI 2016b)

RTI code	Small business	Projected changes to process units	Characteristics of replacement unit
130	No	Replace two small DCEs and associated SDTs with a single larger NDCE and SDT. Remove BLO.	New NDCE furnaces are assumed to be equipped with a dry bottom ESP with a dry PM return system to meet the current subpart MM gaseous organic HAP and PM limits, and the NSPS TRS limit. SDTs are assumed to operate with an upgraded wet scrubber to meet the subpart MM and NSPS new source limits.
145	No	Replace DCE with NDCE. Replace SDT. Reduce BLO throughput as BLO would only serve one remaining DCE.	
206	No	Replace one lime kiln	The new kiln is assumed to operate an ESP to comply with the current subpart MM and NSPS PM limit for new sources.

Table A-2. Total Cost of Subpart MM RTR Regulatory Options by Facility

RTI Code	Final NEISiteID	Operator (2015)	City	St	Pulp Processes	Small_business
100	NEI40686	Domtar Paper Company LLC	Johnsonburg	PA	Kraft	No
102	NEI42341A	Weyerhaeuser NR Company	Longview	WA	Kraft	No
103	NEI9201	Domtar Paper Company	Plymouth	NC	Kraft	No
104	NEI11251	International Paper	Valliant	OK	Kraft, SemiChem	No
105	NEI45182	International Paper Company	Springfield	OR	Kraft, Secondary	No
107	NEI47074	Domtar Paper Company LLC	Bennettsville	SC	Kraft	No
108	NEI33025	International Paper	Campti	LA	Kraft	No
109	NEI32869A	Domtar Paper Company, LLC.	Hawesville	KY	Kraft	No
111	NEI45206	Weyerhaeuser NR Company	Vanceboro	NC	Kraft	No
112	NEI34064	Weyerhaeuser NR Company	Columbus	MS	Kraft	No
114	NEI26506	Weyerhaeuser NR Company	Oglethorpe	GA	Kraft	No
115	NEI26476	Weyerhaeuser NR Company	Port Wentworth	GA	Kraft	No
116	NEI8619	International Paper Company	Pine Hill	AL	Kraft, Secondary, SemiChem	No
117	NEI42689	Wausau Paper Mills, LLC.	Mosinee	WI	Kraft	No
119	NEI46814	International Paper - Bogalusa Mill	BOGALUSA	LA	Kraft, Secondary	No
120	NEI26495	TIN Inc. dba Temple-Inland	Rome	GA	Kraft	No
121	NEI12492	International Paper - Orange Mill	Orange	TX	Kraft, Secondary	No
124	NEI8278	WestRock Company - Panama City Mill	Panama City	FL	Kraft	No
126	NEI42317	WestRock - Hopewell Mill	Hopewell	VA	Kraft	No
127	NEI7933	WestRock - Florence Mill	Florence	SC	Kraft, Secondary	No
130	NEI18338	Georgia-Pacific Brewton LLC	Brewton	AL	Kraft	No
131	NEI42254	WestRock Company - West Point Mill	West Point	VA	Kraft, Secondary	No
132	NEI8261	WestRock - Fernandina Beach Mill	Fernandina Beach	FL	Kraft, Secondary	No
133	NEI13363	WestRock - Tacoma Mill	Tacoma	WA	Kraft	No
135	NEI33118	S.D. Warren Company - Somerset Operations	Skowhegan	ME	Kraft	No
136	NEI12368	Sappi Cloquet LLC	Cloquet	MN	Kraft	No
137	NEI26581	Clearwater Paper Corp - PPD & CPD, Idaho	Lewiston	ID	Kraft	No
138	NEI18652	Clearwater Paper Corporation	Arkansas City	AR	Kraft	No
139	NEI42357	PORT TOWNSEND PAPER CORP	Port Townsend	WA	Kraft, Secondary	No
140	NEI13340	Cascade Pacific Pulp, LLC	Halsey	OR	Kraft	Yes
142	NEI41552	Packaging Corporation of America	Counce	TN	Kraft, Secondary	No
143	NEI26504	Packaging Corporation of America	Clyattville	GA	Kraft	No
145	NEI33135	Luke Paper Company	Luke	MD	Kraft	No
146	NEI759	WestRock Company – Covington Mill	Covington	VA	Kraft	No
147	NEI6450	WESTVACO TEXAS LP	EVADALE	TX	Kraft	No
148	NEI46931	WestRock Company	Cottonton	AL	Kraft, Secondary	No

RTI Code	Final NEISiteID	Operator (2015)	City	St	Pulp Processes	Small_business
149	NEI40488	P.H. Glatfelter Company - Chillicothe Facility	Chillicothe	OH	Kraft	No
150	NEI6273	Catalyst Paper Operations Inc. Rumford Division	RUMFORD	ME	Kraft, Mechanical	No
151	NEI41252	KapStone	North Charleston	SC	Kraft	No
152	NEI11338	Wickliffe Paper Company	Wickliffe	KY	Kraft	No
153	NEI33043	Hood Container of Louisiana LLC	St. Francisville	LA	Kraft	No
154	NEI46739	Verso Corporation - Wisconsin Rapids Mill	Wisconsin Rapids	WI	Kraft	No
155	NEI33883	Escanaba Paper Company	Escanaba	MI	Kraft, Mechanical	No
156	NEI42338	Longview Fibre Paper & Packaging, Inc.	Longview	WA	Kraft, SemiChem	No
159	NEI8177	Interstate Paper, LLC	Riceboro	GA	Kraft	No
162	NEI46760	International Paper	Eastover	SC	Kraft	No
163	NEI8560	International Paper Company	Prattville	AL	Kraft, Secondary	No
164	NEI42710	Thilmany, LLC	Kaukauna	WI	Kraft	No
165	NEI41628	International Paper Company	Queen City	TX	Kraft	No
166	NEI41314	International Paper	Georgetown	SC	Kraft	No
167	NEI34070	International Paper Co. - Vicksburg Mill	Redwood	MS	Kraft, Secondary	No
169	NEI33013	International Paper	Mansfield	LA	Kraft, SemiChem	No
171	NEI18658	Evergreen Packaging Inc	Pine Bluff	AR	Kraft	No
172	NEI18335	International Paper Company	Selma	AL	Kraft, Secondary	No
173	NEI35908	International Paper Company	Ticonderoga	NY	Kraft	No
174	NEI40247	International Paper, Inc	Riegelwood	NC	Kraft	No
175	NEI26514	International Paper Company	AUGUSTA	GA	Kraft	No
176	NEI47104	KapStone Kraft Paper Corporation	Roanoke Rapids	NC	Kraft	No
177	NEI33887	Verso Quinnesec LLC	Quinnesec	MI	Kraft	No
178	NEI26309	International Paper	Cantonment	FL	Kraft	No
179	NEI45474	Rock-Tenn Mill Company, LLC	Demopolis	AL	Kraft	No
180	NEI26471	Graphic Packaging International, Inc.	Macon	GA	Kraft, Secondary	No
181	NEI6057	Graphic Packaging International Inc.	West Monroe	LA	Kraft, Secondary, SemiChem	No
182	NEI7181	PH Glatfelter	Spring Grove	PA	Kraft	No
183	NEI33103	Expera Old Town LLC	Old Town	ME	Kraft	No
184	NEI46817	Georgia-Pacific Consumer Operations LLC Port Hudson Operations	Zachary	LA	Kraft	No
185	NEI46599	Georgia Pacific Consumer Products (Camas), LLC	CAMAS	WA	Kraft	No
186	NEI18334	Georgia-Pacific Consumer Products LP (Naheola Mill)	Pennington	AL	Kraft	No
188	NEI40600	Georgia-Pacific Toledo LLC	Toledo	OR	Kraft, Secondary, SemiChem	No
189	NEI54342	Georgia-Pacific LLC Crossett Paper Operations	Crossett	AR	Kraft	No
190	NEI26491	Georgia-Pacific Cedar Springs, LLC	Cedar Springs	GA	Kraft, Secondary, SemiChem	No
195	NEI46835	Woodland Pulp LLC	Baileyville	ME	Kraft	Yes
196	NEI18660	Domtar A.W. LLC	Ashdown	AR	Kraft	No

RTI Code	Final NEISiteID	Operator (2015)	City	St	Pulp Processes	Small_business
197	NEI18657	Mondi Bags USA, LLC	Pine Bluff	AR	Kraft	No
198	NEI41565	AbiBow US Inc	Calhoun	TN	Kraft, Mechanical, Secondary	No
199	NEI18390	Resolute Forest Products - Coosa Pines Operation	Coosa Pines	AL	Kraft	No
200	NEI47077	Resolute Forest Products - Catawba Operations	Catawba	SC	Kraft, Mechanical	No
201	NEI7559	Boise Packaging and Newsprint, LLC	DeRidder	LA	Kraft, Mechanical, Secondary	No
202	NEI12411	Boise White Paper, LLC	International Falls	MN	Kraft	No
203	NEI42410	Boise White Paper LLC	Wallula	WA	Kraft, Semichem	No
205	NEI8601	BOISE WHITE PAPER LLC	Jackson	AL	Kraft, Secondary	No
206	NEI40282	Blue Ridge Holding Company	Canton	NC	Kraft	No
207	NEI7104	Appleton Papers, Inc.	Roaring Spring	PA	Kraft	No
208228535	NEI18373	Alabama River Cellulose, LLC	Perdue Hill	AL	Kraft	No
226	NEI33023	WestRock - Hodge Mill	Hodge	LA	Kraft, Secondary, SemiChem	No
240	NEI26526	Rayonier Performance Fibers, LLC	JESUP	GA	Kraft	No
242	NEI34066	Leaf River Cellulose, LLC	New Augusta	MS	Kraft	No
243	NEI8196	GP Cellulose, LLC.	Brunswick	GA	Kraft	No
340	NEI46852	Green Bay Packaging Inc.	Morrilton	AR	Kraft, Secondary	No
525	NEI8265	Georgia Pacific Consumer Operations LLC	Palatka	FL	Kraft	No
531	NEI8186	International Paper Company	Savannah	GA	Kraft, Secondary	No
606	NEI47091	Foley Cellulose LLC, Foley Mill	Perry	FL	Kraft	No
610	NEI6261	Verso Androscoggin LLC	Jay	ME	Kraft, Mechanical	No
613	NEI11172	Georgia Pacific Monticello LLC	Monticello	MS	Kraft, Secondary	No
615	NEI40554	Georgia-Pacific Consumer Products, LP	Clatskanie	OR	Kraft	No
617	NEI42695	Domtar A.W. LLC	Nekoosa	WI	Kraft	No
161	NEI7621	International Paper – Franklin, VA	Franklin	VA	Kraft	No
700	NEI42351	Gores Group, LLC	Cosmopolis	WA	Sulfite-Mg	No
106	NEI41599	Domtar Paper Company, LLC	Kingsport	TN	Soda	No
141	NEI46750	PACKAGING CORPORATION OF AMERICA-Tomahawk	Tomahawk	WI	SemiChem	No
187	NEI42211	GP Big Island, LLC	Big Island	VA	Secondary, Semichem	No
193	NEI39968	Finch Paper LLC	Glens Falls	NY	Sulfite-NH3	Yes
241	NEI26382	Rayonier Fernandina Mill	Fernandina Beach	FL	Sulfite-NH3	No
244	NEI43472	Sonoco Products Company	Hartsville	SC	SemiChem	No
245	NEI18347	WestRock - Stevenson Mill	Stevenson	AL	Secondary, Semichem	No
247	NEI33945	Packaging Corporation of America	Filer City	MI	Secondary, Semichem	No
304	NEIVA00022	Greif Packaging LLC	Riverville	VA	Secondary, Semichem	No

RTI Code	Final NEISiteID	Additional 5-yr periodic testing costs, capital, \$2016	Additional 5-yr periodic testing costs, annualized (3% interest), \$2016/yr	Additional 5-yr periodic testing costs, annualized (7% interest), \$2016/yr	DAS adjustments incremental R&R costs, initial, \$2016	RF and ESP-controlled LK	
						ESP Opt A incremental R&R costs, annual, \$2016	ESP Opt B incremental recordkeeping costs, annual, \$2016
100	NEI40686	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 21,740	\$ 4,000
102	NEI42341A				\$ 9,940	\$ 21,740	\$ 4,000
103	NEI9201	\$ 10,000	\$ 2,180	\$ 2,440	\$ 9,940	\$ 10,870	\$ 2,000
104	NEI11251	\$ 44,000	\$ 9,600	\$ 10,730	\$ 9,940	\$ 21,740	\$ 4,000
105	NEI45182	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 21,740	\$ 4,000
107	NEI47074	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 21,740	\$ 4,000
108	NEI33025	\$ 34,000	\$ 7,420	\$ 8,290	\$ 9,940	\$ 10,870	\$ 2,000
109	NEI32869A	\$ 50,000	\$ 10,900	\$ 12,200	\$ 9,940	\$ 32,610	\$ 6,000
111	NEI45206				\$ 9,940	\$ 21,740	\$ 4,000
112	NEI34064	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 21,740	\$ 4,000
114	NEI26506	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 21,740	\$ 4,000
115	NEI26476				\$ 9,940	\$ 21,740	\$ 4,000
116	NEI8619				\$ 9,940	\$ 10,870	\$ 2,000
117	NEI42689	\$ 10,000	\$ 2,180	\$ 2,440	\$ 9,940	\$ 10,870	\$ 2,000
119	NEI46814	\$ 50,000	\$ 10,900	\$ 12,200	\$ 9,940	\$ 21,740	\$ 4,000
120	NEI26495	\$ 40,000	\$ 8,720	\$ 9,760	\$ 9,940	\$ 10,870	\$ 2,000
121	NEI12492	\$ 50,000	\$ 10,900	\$ 12,200	\$ 9,940	\$ 21,740	\$ 4,000
124	NEI8278	\$ 50,000	\$ 10,900	\$ 12,200	\$ 9,940	\$ 21,740	\$ 4,000
126	NEI42317				\$ 9,940	\$ 21,740	\$ 4,000
127	NEI7933	\$ 40,000	\$ 8,720	\$ 9,760	\$ 9,940	\$ 32,610	\$ 6,000
130	NEI18338	\$ 74,000	\$ 16,140	\$ 18,050	\$ 9,940	\$ 21,740	\$ 4,000
131	NEI42254	\$ 60,000	\$ 13,080	\$ 14,640	\$ 9,940	\$ 21,740	\$ 4,000
132	NEI8261				\$ 9,940	\$ 32,610	\$ 6,000
133	NEI13363	\$ 50,000	\$ 10,900	\$ 12,200	\$ 9,940	\$ 10,870	\$ 2,000
135	NEI33118	\$ 20,000	\$ 4,360	\$ 4,880	\$ 9,940	\$ 10,870	\$ 2,000
136	NEI12368				\$ 9,940	\$ 21,740	\$ 4,000
137	NEI26581	\$ 60,000	\$ 13,080	\$ 14,640	\$ 9,940	\$ 43,480	\$ 8,000
138	NEI18652				\$ 9,940	\$ 10,870	\$ 2,000
139	NEI42357	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 10,870	\$ 2,000
140	NEI13340	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 10,870	\$ 2,000
142	NEI41552	\$ 70,000	\$ 15,260	\$ 17,080	\$ 9,940	\$ 32,610	\$ 6,000
143	NEI26504	\$ 24,000	\$ 5,240	\$ 5,850	\$ 9,940	\$ 21,740	\$ 4,000
145	NEI33135	\$ 44,000	\$ 9,600	\$ 10,730	\$ 9,940	\$ 21,740	\$ 4,000
146	NEI759				\$ 9,940	\$ 32,610	\$ 6,000
147	NEI6450	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 32,610	\$ 6,000
148	NEI46931				\$ 9,940	\$ 32,610	\$ 6,000

RTI Code	Final NEISiteID	Additional 5-yr periodic testing costs, capital, \$2016	Additional 5-yr periodic testing costs, annualized (3% interest), \$2016/yr	Additional 5-yr periodic testing costs, annualized (7% interest), \$2016/yr	DAS adjustments incremental R&R costs, initial, \$2016	RF and ESP-controlled LK	
						ESP Opt A incremental R&R costs, annual, \$2016	ESP Opt B incremental recordkeeping costs, annual, \$2016
149	NEI40488				\$ 9,940	\$ 10,870	\$ 2,000
150	NEI6273	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 10,870	\$ 2,000
151	NEI41252	\$ 70,000	\$ 15,260	\$ 17,080	\$ 9,940	\$ 32,610	\$ 6,000
152	NEI11338	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 10,870	\$ 2,000
153	NEI33043	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940		
154	NEI46739	\$ 70,000	\$ 15,260	\$ 17,080	\$ 9,940	\$ 43,480	\$ 8,000
155	NEI33883	\$ 10,000	\$ 2,180	\$ 2,440	\$ 9,940	\$ 10,870	\$ 2,000
156	NEI42338	\$ 70,000	\$ 15,260	\$ 17,080	\$ 9,940	\$ 32,610	\$ 6,000
159	NEI8177	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940		
162	NEI46760				\$ 9,940	\$ 32,610	\$ 6,000
163	NEI8560	\$ 70,000	\$ 15,260	\$ 17,080	\$ 9,940	\$ 21,740	\$ 4,000
164	NEI42710	\$ 50,000	\$ 10,900	\$ 12,200	\$ 9,940	\$ 21,740	\$ 4,000
165	NEI41628	\$ 60,000	\$ 13,080	\$ 14,640	\$ 9,940	\$ 21,740	\$ 4,000
166	NEI41314				\$ 9,940	\$ 21,740	\$ 4,000
167	NEI34070				\$ 9,940	\$ 10,870	\$ 2,000
169	NEI33013	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 21,740	\$ 4,000
171	NEI18658	\$ 80,000	\$ 17,440	\$ 19,520	\$ 9,940	\$ 32,610	\$ 6,000
172	NEI18335				\$ 9,940	\$ 21,740	\$ 4,000
173	NEI35908				\$ 9,940	\$ 10,870	\$ 2,000
174	NEI40247	\$ 60,000	\$ 13,080	\$ 14,640	\$ 9,940	\$ 32,610	\$ 6,000
175	NEI26514				\$ 9,940	\$ 21,740	\$ 4,000
176	NEI47104	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 10,870	\$ 2,000
177	NEI33887				\$ 9,940	\$ 10,870	\$ 2,000
178	NEI26309	\$ 50,000	\$ 10,900	\$ 12,200	\$ 9,940	\$ 32,610	\$ 6,000
179	NEI45474	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 21,740	\$ 4,000
180	NEI26471				\$ 9,940	\$ 10,870	\$ 2,000
181	NEI6057	\$ 60,000	\$ 13,080	\$ 14,640	\$ 9,940	\$ 21,740	\$ 4,000
182	NEI7181				\$ 9,940	\$ 10,870	\$ 2,000
183	NEI33103	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 10,870	\$ 2,000
184	NEI46817	\$ 70,000	\$ 15,260	\$ 17,080	\$ 9,940	\$ 32,610	\$ 6,000
185	NEI46599	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 10,870	\$ 2,000
186	NEI18334				\$ 9,940	\$ 21,740	\$ 4,000
188	NEI40600				\$ 9,940	\$ 21,740	\$ 4,000
189	NEI54342	\$ 40,000	\$ 8,720	\$ 9,760	\$ 9,940	\$ 10,870	\$ 2,000
190	NEI26491	\$ 80,000	\$ 17,440	\$ 19,520	\$ 9,940	\$ 32,610	\$ 6,000
195	NEI46835	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 10,870	\$ 2,000
196	NEI18660	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 32,610	\$ 6,000

RTI Code	Final NEISiteID	Additional 5-yr periodic testing costs, capital, \$2016	Additional 5-yr periodic testing costs, annualized (3% interest), \$2016/yr	Additional 5-yr periodic testing costs, annualized (7% interest), \$2016/yr	DAS adjustments incremental R&R costs, initial, \$2016	RF and ESP-controlled LK	
						ESP Opt A incremental R&R costs, annual, \$2016	ESP Opt B incremental recordkeeping costs, annual, \$2016
197	NEI18657	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 10,870	\$ 2,000
198	NEI41565	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 10,870	\$ 2,000
199	NEI18390				\$ 9,940	\$ 10,870	\$ 2,000
200	NEI47077				\$ 9,940	\$ 32,610	\$ 6,000
201	NEI7559	\$ 20,000	\$ 4,360	\$ 4,880	\$ 9,940	\$ 10,870	\$ 2,000
202	NEI12411				\$ 9,940	\$ 10,870	\$ 2,000
203	NEI42410	\$ 50,000	\$ 10,900	\$ 12,200	\$ 9,940	\$ 21,740	\$ 4,000
205	NEI8601				\$ 9,940	\$ 10,870	\$ 2,000
206	NEI40282	\$ 20,000	\$ 4,360	\$ 4,880	\$ 9,940	\$ 32,610	\$ 6,000
207	NEI7104	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 10,870	\$ 2,000
208228535	NEI18373				\$ 9,940	\$ 32,610	\$ 6,000
226	NEI33023	\$ 50,000	\$ 10,900	\$ 12,200	\$ 9,940	\$ 21,740	\$ 4,000
240	NEI26526				\$ 9,940	\$ 32,610	\$ 6,000
242	NEI34066				\$ 9,940	\$ 21,740	\$ 4,000
243	NEI8196				\$ 9,940	\$ 32,610	\$ 6,000
340	NEI46852	\$ 20,000	\$ 4,360	\$ 4,880	\$ 9,940	\$ 10,870	\$ 2,000
525	NEI8265	\$ 40,000	\$ 8,720	\$ 9,760	\$ 9,940	\$ 10,870	\$ 2,000
531	NEI8186				\$ 9,940	\$ 21,740	\$ 4,000
606	NEI47091				\$ 9,940	\$ 43,480	\$ 8,000
610	NEI6261				\$ 9,940	\$ 10,870	\$ 2,000
613	NEI11172				\$ 9,940	\$ 21,740	\$ 4,000
615	NEI40554	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 10,870	\$ 2,000
617	NEI42695	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 21,740	\$ 4,000
161	NEI7621	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940	\$ 10,870	\$ 2,000
700	NEI42351	\$ 30,000	\$ 6,540	\$ 7,320	\$ 9,940		
106	NEI41599	\$ 44,000	\$ 9,600	\$ 10,730	\$ 9,940	\$ 21,740	\$ 4,000
141	NEI46750	\$ 14,000	\$ 3,060	\$ 3,410	\$ 9,940		
187	NEI42211	\$ 14,000	\$ 3,060	\$ 3,410	\$ 9,940		
193	NEI39968	\$ 40,000	\$ 8,720	\$ 9,760	\$ 9,940		
241	NEI26382	\$ 10,000	\$ 2,180	\$ 2,440	\$ 9,940		
244	NEI43472	\$ 14,000	\$ 3,060	\$ 3,410	\$ 9,940		
245	NEI18347						
247	NEI33945	\$ 14,000	\$ 3,060	\$ 3,410	\$ 9,940		
304	NEIVA00022	\$ 14,000	\$ 3,060	\$ 3,410	\$ 9,940		
		\$ 2,764,000	\$ 602,640	\$ 674,350	\$ 1,053,640	\$ 1,989,210	\$ 366,000

RTI Code	Final NEISiteID	RF and ESP-controlled LK		
		ESP Opt A ESP parameter monitoring, capital, \$2016	ESP Opt A ESP parameter monitoring, annualized (3% interest), \$2016/yr	ESP Opt A ESP parameter monitoring, annualized (7% interest), \$2016/yr
100	NEI40686	\$ 180,000	\$ 39,400	\$ 44,000
102	NEI42341A	\$ 180,000	\$ 39,400	\$ 44,000
103	NEI9201	\$ 90,000	\$ 19,700	\$ 22,000
104	NEI11251	\$ 180,000	\$ 39,400	\$ 44,000
105	NEI45182	\$ 180,000	\$ 39,400	\$ 44,000
107	NEI47074	\$ 180,000	\$ 39,400	\$ 44,000
108	NEI33025	\$ 90,000	\$ 19,700	\$ 22,000
109	NEI32869A	\$ 270,000	\$ 59,100	\$ 66,000
111	NEI45206	\$ 180,000	\$ 39,400	\$ 44,000
112	NEI34064	\$ 180,000	\$ 39,400	\$ 44,000
114	NEI26506	\$ 180,000	\$ 39,400	\$ 44,000
115	NEI26476	\$ 180,000	\$ 39,400	\$ 44,000
116	NEI8619	\$ 90,000	\$ 19,700	\$ 22,000
117	NEI42689	\$ 90,000	\$ 19,700	\$ 22,000
119	NEI46814	\$ 180,000	\$ 39,400	\$ 44,000
120	NEI26495	\$ 90,000	\$ 19,700	\$ 22,000
121	NEI12492	\$ 180,000	\$ 39,400	\$ 44,000
124	NEI8278	\$ 180,000	\$ 39,400	\$ 44,000
126	NEI42317	\$ 180,000	\$ 39,400	\$ 44,000
127	NEI7933	\$ 270,000	\$ 59,100	\$ 66,000
130	NEI18338	\$ 180,000	\$ 39,400	\$ 44,000
131	NEI42254	\$ 180,000	\$ 39,400	\$ 44,000
132	NEI8261	\$ 270,000	\$ 59,100	\$ 66,000
133	NEI13363	\$ 90,000	\$ 19,700	\$ 22,000
135	NEI33118	\$ 90,000	\$ 19,700	\$ 22,000
136	NEI12368	\$ 180,000	\$ 39,400	\$ 44,000
137	NEI26581	\$ 360,000	\$ 78,800	\$ 88,000
138	NEI18652	\$ 90,000	\$ 19,700	\$ 22,000
139	NEI42357	\$ 90,000	\$ 19,700	\$ 22,000
140	NEI13340	\$ 90,000	\$ 19,700	\$ 22,000
142	NEI41552	\$ 270,000	\$ 59,100	\$ 66,000
143	NEI26504	\$ 180,000	\$ 39,400	\$ 44,000
145	NEI33135	\$ 180,000	\$ 39,400	\$ 44,000
146	NEI759	\$ 270,000	\$ 59,100	\$ 66,000
147	NEI6450	\$ 270,000	\$ 59,100	\$ 66,000
148	NEI46931	\$ 270,000	\$ 59,100	\$ 66,000

RTI Code	Final NEISiteID	RF and ESP-controlled LK		
		ESP Opt A ESP parameter monitoring, capital, \$2016	ESP Opt A ESP parameter monitoring, annualized (3% interest), \$2016/yr	ESP Opt A ESP parameter monitoring, annualized (7% interest), \$2016/yr
149	NEI40488	\$ 90,000	\$ 19,700	\$ 22,000
150	NEI6273	\$ 90,000	\$ 19,700	\$ 22,000
151	NEI41252	\$ 270,000	\$ 59,100	\$ 66,000
152	NEI11338	\$ 90,000	\$ 19,700	\$ 22,000
153	NEI33043			
154	NEI46739	\$ 360,000	\$ 78,800	\$ 88,000
155	NEI33883	\$ 90,000	\$ 19,700	\$ 22,000
156	NEI42338	\$ 270,000	\$ 59,100	\$ 66,000
159	NEI8177			
162	NEI46760	\$ 270,000	\$ 59,100	\$ 66,000
163	NEI8560	\$ 180,000	\$ 39,400	\$ 44,000
164	NEI42710	\$ 180,000	\$ 39,400	\$ 44,000
165	NEI41628	\$ 180,000	\$ 39,400	\$ 44,000
166	NEI41314	\$ 180,000	\$ 39,400	\$ 44,000
167	NEI34070	\$ 90,000	\$ 19,700	\$ 22,000
169	NEI33013	\$ 180,000	\$ 39,400	\$ 44,000
171	NEI18658	\$ 270,000	\$ 59,100	\$ 66,000
172	NEI18335	\$ 180,000	\$ 39,400	\$ 44,000
173	NEI35908	\$ 90,000	\$ 19,700	\$ 22,000
174	NEI40247	\$ 270,000	\$ 59,100	\$ 66,000
175	NEI26514	\$ 180,000	\$ 39,400	\$ 44,000
176	NEI47104	\$ 90,000	\$ 19,700	\$ 22,000
177	NEI33887	\$ 90,000	\$ 19,700	\$ 22,000
178	NEI26309	\$ 270,000	\$ 59,100	\$ 66,000
179	NEI45474	\$ 180,000	\$ 39,400	\$ 44,000
180	NEI26471	\$ 90,000	\$ 19,700	\$ 22,000
181	NEI6057	\$ 180,000	\$ 39,400	\$ 44,000
182	NEI7181	\$ 90,000	\$ 19,700	\$ 22,000
183	NEI33103	\$ 90,000	\$ 19,700	\$ 22,000
184	NEI46817	\$ 270,000	\$ 59,100	\$ 66,000
185	NEI46599	\$ 90,000	\$ 19,700	\$ 22,000
186	NEI18334	\$ 180,000	\$ 39,400	\$ 44,000
188	NEI40600	\$ 180,000	\$ 39,400	\$ 44,000
189	NEI54342	\$ 90,000	\$ 19,700	\$ 22,000
190	NEI26491	\$ 270,000	\$ 59,100	\$ 66,000
195	NEI46835	\$ 90,000	\$ 19,700	\$ 22,000
196	NEI18660	\$ 270,000	\$ 59,100	\$ 66,000

RTI Code	Final NEISiteID	RF and ESP-controlled LK		
		ESP Opt A ESP parameter monitoring, capital, \$2016	ESP Opt A ESP parameter monitoring, annualized (3% interest), \$2016/yr	ESP Opt A ESP parameter monitoring, annualized (7% interest), \$2016/yr
197	NEI18657	\$ 90,000	\$ 19,700	\$ 22,000
198	NEI41565	\$ 90,000	\$ 19,700	\$ 22,000
199	NEI18390	\$ 90,000	\$ 19,700	\$ 22,000
200	NEI47077	\$ 270,000	\$ 59,100	\$ 66,000
201	NEI7559	\$ 90,000	\$ 19,700	\$ 22,000
202	NEI12411	\$ 90,000	\$ 19,700	\$ 22,000
203	NEI42410	\$ 180,000	\$ 39,400	\$ 44,000
205	NEI8601	\$ 90,000	\$ 19,700	\$ 22,000
206	NEI40282	\$ 270,000	\$ 59,100	\$ 66,000
207	NEI7104	\$ 90,000	\$ 19,700	\$ 22,000
208228535	NEI18373	\$ 270,000	\$ 59,100	\$ 66,000
226	NEI33023	\$ 180,000	\$ 39,400	\$ 44,000
240	NEI26526	\$ 270,000	\$ 59,100	\$ 66,000
242	NEI34066	\$ 180,000	\$ 39,400	\$ 44,000
243	NEI8196	\$ 270,000	\$ 59,100	\$ 66,000
340	NEI46852	\$ 90,000	\$ 19,700	\$ 22,000
525	NEI8265	\$ 90,000	\$ 19,700	\$ 22,000
531	NEI8186	\$ 180,000	\$ 39,400	\$ 44,000
606	NEI47091	\$ 360,000	\$ 78,800	\$ 88,000
610	NEI6261	\$ 90,000	\$ 19,700	\$ 22,000
613	NEI11172	\$ 180,000	\$ 39,400	\$ 44,000
615	NEI40554	\$ 90,000	\$ 19,700	\$ 22,000
617	NEI42695	\$ 180,000	\$ 39,400	\$ 44,000
161	NEI7621	\$ 90,000	\$ 19,700	\$ 22,000
700	NEI42351			
106	NEI41599	\$ 180,000	\$ 39,400	\$ 44,000
141	NEI46750			
187	NEI42211			
193	NEI39968			
241	NEI26382			
244	NEI43472			
245	NEI18347			
247	NEI33945			
304	NEIVA00022			
		\$ 16,470,000	\$ 3,605,100	\$ 4,026,000

Table A-3. Mill Total Costs and Emissions Reductions for Opacity Options

		LK Opacity Opt A			RF Opacity Opt A		
RTI Code	Final NEISiteID	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr
100	NEI40686						
102	NEI42341A						
103	NEI9201						
104	NEI11251						
105	NEI45182						
107	NEI47074						
108	NEI33025						
109	NEI32869A	\$ 2,147,773	\$ 327,335	\$ 385,754	\$ 5,938,794	\$ 850,632	\$ 1,012,167
111	NEI45206						
112	NEI34064						
114	NEI26506						
115	NEI26476						
116	NEI8619						
117	NEI42689						
119	NEI46814				\$ 7,716,181	\$ 1,115,592	\$ 1,325,472
120	NEI26495				\$ 11,181,005	\$ 1,650,372	\$ 1,954,495
121	NEI12492						
124	NEI8278						
126	NEI42317						
127	NEI7933				\$ 9,362,092	\$ 1,366,754	\$ 1,621,402
130	NEI18338						
131	NEI42254						
132	NEI8261						
133	NEI13363						
135	NEI33118						
136	NEI12368						
137	NEI26581						
138	NEI18652						
139	NEI42357				\$ 5,938,794	\$ 850,632	\$ 1,012,167
140	NEI13340				\$ 7,556,648	\$ 1,091,537	\$ 1,297,078
142	NEI41552						
143	NEI26504						

		LK Opacity Opt A			RF Opacity Opt A		
RTI Code	Final NEISiteID	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr
145	NEI33135						
146	NEI759						
147	NEI6450						
148	NEI46931				\$ 18,488,925	\$ 2,701,074	\$ 3,203,973
149	NEI40488						
150	NEI6273						
151	NEI41252						
152	NEI11338						
153	NEI33043						
154	NEI46739						
155	NEI33883						
156	NEI42338						
159	NEI8177						
162	NEI46760						
163	NEI8560						
164	NEI42710						
165	NEI41628						
166	NEI41314						
167	NEI34070						
169	NEI33013						
171	NEI18658				\$ 12,563,119	\$ 1,797,862	\$ 2,139,578
172	NEI18335						
173	NEI35908						
174	NEI40247				\$ 13,028,115	\$ 1,944,530	\$ 2,298,894
175	NEI26514						
176	NEI47104						
177	NEI33887						
178	NEI26309						
179	NEI45474						
180	NEI26471						
181	NEI6057						
182	NEI7181						
183	NEI33103						

		LK Opacity Opt A			RF Opacity Opt A		
RTI Code	Final NEISiteID	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr
184	NEI46817						
185	NEI46599						
186	NEI18334						
188	NEI40600						
189	NEI54342						
190	NEI26491						
195	NEI46835						
196	NEI18660						
197	NEI18657						
198	NEI41565						
199	NEI18390						
200	NEI47077	\$ 2,647,141	\$ 407,311	\$ 479,313			
201	NEI7559						
202	NEI12411						
203	NEI42410						
205	NEI8601						
206	NEI40282						
207	NEI7104						
208228535	NEI18373				\$ 23,513,957	\$ 3,483,639	\$ 4,123,219
226	NEI33023						
240	NEI26526						
242	NEI34066						
243	NEI8196						
340	NEI46852						
525	NEI8265						
531	NEI8186						
606	NEI47091				\$ 8,698,199	\$ 1,264,800	\$ 1,501,391
610	NEI6261						
613	NEI11172						
615	NEI40554						
617	NEI42695						
161	NEI7621						
700	NEI42351						

		LK Opacity Opt A			RF Opacity Opt A		
RTI Code	Final NEISiteID	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr
106	NEI41599						
141	NEI46750						
187	NEI42211						
193	NEI39968						
241	NEI26382						
244	NEI43472						
245	NEI18347						
247	NEI33945						
304	NEIVA00022						
		\$ 4,794,914	\$ 734,646	\$ 865,067	\$ 123,985,830	\$ 18,117,421	\$ 21,489,836

RTI Code	Final NEISiteID	RF Opacity Opt B			Potential Emission Reduction - RF and LK Opacity Options		
		RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	Baseline PM, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy
100	NEI40686						
102	NEI42341A						
103	NEI9201						
104	NEI11251						
105	NEI45182						
107	NEI47074						
108	NEI33025						
109	NEI32869A	\$ 5,938,794	\$ 850,632	\$ 1,012,167	120	40	18
111	NEI45206						
112	NEI34064						
114	NEI26506						
115	NEI26476						
116	NEI8619						
117	NEI42689						
119	NEI46814				152	58	26
120	NEI26495				99		
121	NEI12492						
124	NEI8278						
126	NEI42317						
127	NEI7933	\$ 9,362,092	\$ 1,366,754	\$ 1,621,402	53		
130	NEI18338						
131	NEI42254						
132	NEI8261						
133	NEI13363						
135	NEI33118						
136	NEI12368						
137	NEI26581						
138	NEI18652						
139	NEI42357				99	1	1
140	NEI13340				53		
142	NEI41552						
143	NEI26504						

		RF Opacity Opt B			Potential Emission Reduction - RF and LK Opacity Options		
RTI Code	Final NEISiteID	RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	Baseline PM, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy
145	NEI33135						
146	NEI759						
147	NEI6450						
148	NEI46931	\$ 7,838,757	\$ 1,134,109	\$ 1,347,324	158		
149	NEI40488						
150	NEI6273						
151	NEI41252						
152	NEI11338						
153	NEI33043						
154	NEI46739						
155	NEI33883						
156	NEI42338						
159	NEI8177						
162	NEI46760						
163	NEI8560						
164	NEI42710						
165	NEI41628						
166	NEI41314						
167	NEI34070						
169	NEI33013						
171	NEI18658				302	46	27
172	NEI18335						
173	NEI35908						
174	NEI40247				67		
175	NEI26514						
176	NEI47104						
177	NEI33887						
178	NEI26309						
179	NEI45474						
180	NEI26471						
181	NEI6057						
182	NEI7181						
183	NEI33103						

		RF Opacity Opt B			Potential Emission Reduction - RF and LK Opacity Options		
RTI Code	Final NEISiteID	RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	Baseline PM, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy
184	NEI46817						
185	NEI46599						
186	NEI18334						
188	NEI40600						
189	NEI54342						
190	NEI26491						
195	NEI46835						
196	NEI18660						
197	NEI18657						
198	NEI41565						
199	NEI18390						
200	NEI47077				6.1		
201	NEI7559						
202	NEI12411						
203	NEI42410						
205	NEI8601						
206	NEI40282						
207	NEI7104						
208228535	NEI18373	\$ 11,112,128	\$ 1,639,520	\$ 1,941,770	415	29	13
226	NEI33023						
240	NEI26526						
242	NEI34066						
243	NEI8196						
340	NEI46852						
525	NEI8265						
531	NEI8186						
606	NEI47091	\$ 8,698,199	\$ 1,264,800	\$ 1,501,391	153	62	28
610	NEI6261						
613	NEI11172						
615	NEI40554						
617	NEI42695						
161	NEI7621						
700	NEI42351						

		RF Opacity Opt B			Potential Emission Reduction - RF and LK Opacity Options		
RTI Code	Final NEISiteID	RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	Baseline PM, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy
106	NEI41599						
141	NEI46750						
187	NEI42211						
193	NEI39968						
241	NEI26382						
244	NEI43472						
245	NEI18347						
247	NEI33945						
304	NEIVA00022						
		\$ 42,949,971	\$ 6,255,815	\$ 7,424,054	1,677	235	112

Table A-4. Unit-specific Costs and Impacts

RTI Code	Final NEISiteID	Operator (2015)	City	St	Pulp Processes	Small_business	RTI&EUID	EmissionProcessGroup	RTI_APCD_Type	Install/upgrade year for determining NESHAP impact
100	NEI40686	Domtar Paper Company LLC	Johnsonburg	PA	Kraft	No	100.037A	NDCE	DBESP	1993
100	NEI40686	Domtar Paper Company LLC	Johnsonburg	PA	Kraft	No	100.109	SDT (Kraft)	SCBR	1993
100	NEI40686	Domtar Paper Company LLC	Johnsonburg	PA	Kraft	No	100.115	Lime Kiln	ESP	1993
102	NEI42341A	Weyerhaeuser NR Company	Longview	WA	Kraft	No	102.LK	Lime Kiln	ESP	1985
102	NEI42341A	Weyerhaeuser NR Company	Longview	WA	Kraft	No	102.RB10	NDCE	DBESP-WPR	2002
102	NEI42341A	Weyerhaeuser NR Company	Longview	WA	Kraft	No	102.SDTV10	SDT (Kraft)	SCBR	2002
103	NEI9201	Domtar Paper Company	Plymouth	NC	Kraft	No	103.G-158	NDCE	DBESP	2000
103	NEI9201	Domtar Paper Company	Plymouth	NC	Kraft	No	103.G-165	Lime Kiln	SCBR	1987
103	NEI9201	Domtar Paper Company	Plymouth	NC	Kraft	No	103.G-225	SDT (Kraft) (2)	SCBR	2000
104	NEI11251	International Paper	Valliant	OK	Kraft, SemiChem	No	104.EUG D6	NDCE	DBESP	2006
104	NEI11251	International Paper	Valliant	OK	Kraft, SemiChem	No	104.EUG E4b	SDT (Kraft)	INC_RF	2006
104	NEI11251	International Paper	Valliant	OK	Kraft, SemiChem	No	104.EUG E7	Lime Kiln	ESP	2005
105	NEI45182	International Paper Company	Springfield	OR	Kraft, Secondary	No	105.EU440BLO	BLO		1964
105	NEI45182	International Paper Company	Springfield	OR	Kraft, Secondary	No	105.EU445A	DCE	WBESP	1964
105	NEI45182	International Paper Company	Springfield	OR	Kraft, Secondary	No	105.EU445BEast		SCBR	1964
105	NEI45182	International Paper Company	Springfield	OR	Kraft, Secondary	No	105.EU445BWest		SCBR	1964
105	NEI45182	International Paper Company	Springfield	OR	Kraft, Secondary	No	105.EU445BEastWest	SDT (Kraft)	SCBR	1964
105	NEI45182	International Paper Company	Springfield	OR	Kraft, Secondary	No	105.EU445C	NDCE	DBESP-WPR	2007
105	NEI45182	International Paper Company	Springfield	OR	Kraft, Secondary	No	105.EU445D	SDT (Kraft)	SCBR	2007
105	NEI45182	International Paper Company	Springfield	OR	Kraft, Secondary	No	105.EU455	Lime Kilns (2)	ESP	1955
107	NEI47074	Domtar Paper Company LLC	Bennettsville	SC	Kraft	No	107.08-P1	NDCE	DBESP	1996
107	NEI47074	Domtar Paper Company LLC	Bennettsville	SC	Kraft	No	107.09-P2	SDT (Kraft)	SCBR	1996
107	NEI47074	Domtar Paper Company LLC	Bennettsville	SC	Kraft	No	107.11-P14	Lime Kiln	ESP	1996
108	NEI33025	International Paper	Campti	LA	Kraft	No	108.LK1	Lime Kiln	SCBR	1974
108	NEI33025	International Paper	Campti	LA	Kraft	No	108.RB3	NDCE	DBESP	2009
108	NEI33025	International Paper	Campti	LA	Kraft	No	108.SDT3	SDT (Kraft)	PBSCBR/INC_RF	2009
109	NEI32869A	Domtar Paper Company, LLC.	Hawesville	KY	Kraft	No	109.LK1	Lime Kiln	ESP	1997
109	NEI32869A	Domtar Paper Company, LLC.	Hawesville	KY	Kraft	No	109.RB3	NDCE	DBESP	1985
109	NEI32869A	Domtar Paper Company, LLC.	Hawesville	KY	Kraft	No	109.RB4	NDCE	DBESP	1997
109	NEI32869A	Domtar Paper Company, LLC.	Hawesville	KY	Kraft	No	109.SDT3	SDT (Kraft)	SCBR	1985
109	NEI32869A	Domtar Paper Company, LLC.	Hawesville	KY	Kraft	No	109.SDT4	SDT (Kraft)	SCBR	1997
111	NEI45206	Weyerhaeuser NR Company	Vanceboro	NC	Kraft	No	111.G-127	SDT (Kraft)	SCBR/INC_RF	2009
111	NEI45206	Weyerhaeuser NR Company	Vanceboro	NC	Kraft	No	111.G-35	Lime Kiln	ESP	1996
111	NEI45206	Weyerhaeuser NR Company	Vanceboro	NC	Kraft	No	111.G-44	NDCE	DBESP-WPR	2009
112	NEI34064	Weyerhaeuser NR Company	Columbus	MS	Kraft	No	112.AA-100	NDCE	DBESP	1989
112	NEI34064	Weyerhaeuser NR Company	Columbus	MS	Kraft	No	112.AA-101a	SDT (Kraft)	SCBR	1989
112	NEI34064	Weyerhaeuser NR Company	Columbus	MS	Kraft	No	112.AA-110	Lime Kiln	ESP	1990
114	NEI26506	Weyerhaeuser NR Company	Oglethorpe	GA	Kraft	No	114.U500	NDCE	DBESP	1994
114	NEI26506	Weyerhaeuser NR Company	Oglethorpe	GA	Kraft	No	114.U508	SDT (Kraft)	SCBR	1994
114	NEI26506	Weyerhaeuser NR Company	Oglethorpe	GA	Kraft	No	114.U800	Lime Kiln	ESP	2003
115	NEI26476	Weyerhaeuser NR Company	Port Wentworth	GA	Kraft	No	115.LK01	Lime Kiln	ESP	1990

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115	NEI26476	Weyerhaeuser NR Company	Port Wentworth	GA	Kraft	No	115.RE01	NDCE	DBESP	2000
115	NEI26476	Weyerhaeuser NR Company	Port Wentworth	GA	Kraft	No	115.SM01	SDT (Kraft)	SCBR	2000
116	NEI8619	International Paper Company	Pine Hill	AL	Kraft, Secondary, SemiChem	No	116.001	Lime Kiln	SCBR	1968
116	NEI8619	International Paper Company	Pine Hill	AL	Kraft, Secondary, SemiChem	No	116.003	NDCE	WBESP	1982
116	NEI8619	International Paper Company	Pine Hill	AL	Kraft, Secondary, SemiChem	No	116.004	SDT (Kraft)	SCBR	1982
117	NEI42689	Wausau Paper Mills, LLC.	Mosinee	WI	Kraft	No	117.B21	NDCE	DBESP	1995
117	NEI42689	Wausau Paper Mills, LLC.	Mosinee	WI	Kraft	No	117.P30	SDT (Kraft)	SCBR	1995
117	NEI42689	Wausau Paper Mills, LLC.	Mosinee	WI	Kraft	No	117.P36	Lime Kiln	SCBR	1960
119	NEI46814	International Paper - Bogalusa Mill	BOGALUSA	LA	Kraft, Secondary	No	119.EQT005	SDT (Kraft)	SCBR	1964
119	NEI46814	International Paper - Bogalusa Mill	BOGALUSA	LA	Kraft, Secondary	No	119.EQT006	Lime Kiln	SCBR	1963
119	NEI46814	International Paper - Bogalusa Mill	BOGALUSA	LA	Kraft, Secondary	No	119.EQT008	DCE	DBESP	1964
119	NEI46814	International Paper - Bogalusa Mill	BOGALUSA	LA	Kraft, Secondary	No	119.EQT010	NDCE	DBESP	1989
119	NEI46814	International Paper - Bogalusa Mill	BOGALUSA	LA	Kraft, Secondary	No	119.EQT011	SDT (Kraft)	SCBR	1989
119	NEI46814	International Paper - Bogalusa Mill	BOGALUSA	LA	Kraft, Secondary	No	119.EQT013	BLO		1964
119	NEI46814	International Paper - Bogalusa Mill	BOGALUSA	LA	Kraft, Secondary	No	119.EQT014	BLO		1964
120	NEI26495	TIN Inc. dba Temple-Inland	Rome	GA	Kraft	No	120.F7	NDCE	DBESP	1988
120	NEI26495	TIN Inc. dba Temple-Inland	Rome	GA	Kraft	No	120.M18	Lime Kiln	SCBR	1979
120	NEI26495	TIN Inc. dba Temple-Inland	Rome	GA	Kraft	No	120.M19	Lime Kiln	SCBR	1976
120	NEI26495	TIN Inc. dba Temple-Inland	Rome	GA	Kraft	No	120.M3	SDT (Kraft)	SCBR	1989
121	NEI12492	International Paper - Orange Mill	Orange	TX	Kraft, Secondary	No	121.000009	SDT (Kraft)	SCBR	1967
121	NEI12492	International Paper - Orange Mill	Orange	TX	Kraft, Secondary	No	121.000010	SDT (Kraft)	SCBR	1967
121	NEI12492	International Paper - Orange Mill	Orange	TX	Kraft, Secondary	No	121.000011	Lime Kiln	SCBR	1967
121	NEI12492	International Paper - Orange Mill	Orange	TX	Kraft, Secondary	No	121.000013	DCE	DBESP	1967
121	NEI12492	International Paper - Orange Mill	Orange	TX	Kraft, Secondary	No	121.000014	DCE	DBESP	1967
121	NEI12492	International Paper - Orange Mill	Orange	TX	Kraft, Secondary	No	121.BLOX01			1967
121	NEI12492	International Paper - Orange Mill	Orange	TX	Kraft, Secondary	No	121.BLOX02		INC	1967
121	NEI12492	International Paper - Orange Mill	Orange	TX	Kraft, Secondary	No	121.BLOX03			1967
121	NEI12492	International Paper - Orange Mill	Orange	TX	Kraft, Secondary	No	121.BLOX01-03	BLO	INC	1967
124	NEI8278	WestRock Company - Panama City Mill	Panama City	FL	Kraft	No	124.001	DCE	DBESP	1971
124	NEI8278	WestRock Company - Panama City Mill	Panama City	FL	Kraft	No	124.004-1	Lime Kiln	MC/SCBR	2007
124	NEI8278	WestRock Company - Panama City Mill	Panama City	FL	Kraft	No	124.019	DCE	WBESP	1972
124	NEI8278	WestRock Company - Panama City Mill	Panama City	FL	Kraft	No	124.020	SDT (Kraft)	SCBR	1972
124	NEI8278	WestRock Company - Panama City Mill	Panama City	FL	Kraft	No	124.021	SDT (Kraft)	SCBR	1971
124	NEI8278	WestRock Company - Panama City Mill	Panama City	FL	Kraft	No	124.037-8	BLO		1972
126	NEI42317	WestRock - Hopewell Mill	Hopewell	VA	Kraft	No	126.LK	Lime Kiln	ESP/SCBR	1972
126	NEI42317	WestRock - Hopewell Mill	Hopewell	VA	Kraft	No	126.RECOV	NDCE	WBESP	1995
126	NEI42317	WestRock - Hopewell Mill	Hopewell	VA	Kraft	No	126.SDT	SDT (Kraft)	SCBR	1995
127	NEI7933	WestRock - Florence Mill	Florence	SC	Kraft, Secondary	No	127.LK1	Lime Kiln	ESP	1963
127	NEI7933	WestRock - Florence Mill	Florence	SC	Kraft, Secondary	No	127.LK2	Lime Kiln	ESP	1973

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127	NEI7933	WestRock - Florence Mill	Florence	SC	Kraft, Secondary	No	127.REC1	NDCE	WBESP	1991
127	NEI7933	WestRock - Florence Mill	Florence	SC	Kraft, Secondary	No	127.SDT1	SDT (Kraft)	SCBR	1991
130	NEI18338	Georgia-Pacific Brewton LLC	Brewton	AL	Kraft	No	130.1	DCE	WBESP	1957
130	NEI18338	Georgia-Pacific Brewton LLC	Brewton	AL	Kraft	No	130.11	SDT (Kraft)	SCBR	2002
130	NEI18338	Georgia-Pacific Brewton LLC	Brewton	AL	Kraft	No	130.2	DCE	WBESP	1964
130	NEI18338	Georgia-Pacific Brewton LLC	Brewton	AL	Kraft	No	130.23	BLO		1964
130	NEI18338	Georgia-Pacific Brewton LLC	Brewton	AL	Kraft	No	130.3	NDCE	DBESP	2002
130	NEI18338	Georgia-Pacific Brewton LLC	Brewton	AL	Kraft	No	130.4	Lime Kiln	SCBR	1957
130	NEI18338	Georgia-Pacific Brewton LLC	Brewton	AL	Kraft	No	130.5	Lime Kiln	SCBR	1964
130	NEI18338	Georgia-Pacific Brewton LLC	Brewton	AL	Kraft	No	130.6	SDT (Kraft)	SCBR	1957
130	NEI18338	Georgia-Pacific Brewton LLC	Brewton	AL	Kraft	No	130.7	SDT (Kraft)	SCBR	1964
131	NEI42254	WestRock Company - West Point Mill	West Point	VA	Kraft, Secondary	No	131.16	Lime Kiln	CYC/SCBR	1982
131	NEI42254	WestRock Company - West Point Mill	West Point	VA	Kraft, Secondary	No	131.18	Lime Kiln	SCBR	1956
131	NEI42254	WestRock Company - West Point Mill	West Point	VA	Kraft, Secondary	No	131.5	DCE	DBESP	1975
131	NEI42254	WestRock Company - West Point Mill	West Point	VA	Kraft, Secondary	No	131.6	NDCE	DBESP	1991
131	NEI42254	WestRock Company - West Point Mill	West Point	VA	Kraft, Secondary	No	131.BLO	BLO	DBESP	1975
131	NEI42254	WestRock Company - West Point Mill	West Point	VA	Kraft, Secondary	No	131.SDT4N		SCBR	1975
131	NEI42254	WestRock Company - West Point Mill	West Point	VA	Kraft, Secondary	No	131.SDT4S		SCBR	1975
131	NEI42254	WestRock Company - West Point Mill	West Point	VA	Kraft, Secondary	No	131.SDT4N/4S	SDT (Kraft)	SCBR	1975
131	NEI42254	WestRock Company - West Point Mill	West Point	VA	Kraft, Secondary	No	131.SDT5	SDT (Kraft)	SCBR	1991
132	NEI8261	WestRock - Fernandina Beach Mill	Fernandina Beach	FL	Kraft, Secondary	No	132.21LK4	Lime Kiln	ESP	1989
132	NEI8261	WestRock - Fernandina Beach Mill	Fernandina Beach	FL	Kraft, Secondary	No	132.4RB	NDCE	DBESP-WPR	1970
132	NEI8261	WestRock - Fernandina Beach Mill	Fernandina Beach	FL	Kraft, Secondary	No	132.4SDT	SDT (Kraft)	SCBR	2003
132	NEI8261	WestRock - Fernandina Beach Mill	Fernandina Beach	FL	Kraft, Secondary	No	132.5RB	NDCE	DBESP-WPR	1977
132	NEI8261	WestRock - Fernandina Beach Mill	Fernandina Beach	FL	Kraft, Secondary	No	132.5SDT	SDT (Kraft)	SCBR	1977
133	NEI13363	WestRock - Tacoma Mill	Tacoma	WA	Kraft	No	133.10	NDCE	DBESP	2002
133	NEI13363	WestRock - Tacoma Mill	Tacoma	WA	Kraft	No	133.12a	SDT (Kraft)	SCBR	2001
133	NEI13363	WestRock - Tacoma Mill	Tacoma	WA	Kraft	No	133.12b	SDT (Kraft)	SCBR	2001
133	NEI13363	WestRock - Tacoma Mill	Tacoma	WA	Kraft	No	133.14	Lime Kiln	SCBR	1960
133	NEI13363	WestRock - Tacoma Mill	Tacoma	WA	Kraft	No	133.15	Lime Kiln	SCBR	1973
135	NEI33118	S.D. Warren Company - Somerset Operations	Skowhegan	ME	Kraft	No	135.003-1	NDCE	DBESP	2010
135	NEI33118	S.D. Warren Company - Somerset Operations	Skowhegan	ME	Kraft	No	135.004-1	Lime Kiln	CYC/SCBR	1976

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135	NEI33118	S.D. Warren Company - Somerset Operations	Skowhegan	ME	Kraft	No	135.007-1	SDT (Kraft)	SCBR	2010
135	NEI33118	S.D. Warren Company - Somerset Operations	Skowhegan	ME	Kraft	No	135.007-2	SDT (Kraft)	SCBR	2010
136	NEI12368	Sappi Cloquet LLC	Cloquet	MN	Kraft	No	136.EU 005	NDCE	DBESP	1998
136	NEI12368	Sappi Cloquet LLC	Cloquet	MN	Kraft	No	136.EU 031	SDT (Kraft)	SCBR	1998
136	NEI12368	Sappi Cloquet LLC	Cloquet	MN	Kraft	No	136.EU 033	Lime Kiln	ESP	1999
137	NEI26581	Clearwater Paper Corp - PPD & CPD, Idaho	Lewiston	ID	Kraft	No	137.157	SDT (Kraft)	SCBR	1990
137	NEI26581	Clearwater Paper Corp - PPD & CPD, Idaho	Lewiston	ID	Kraft	No	137.189	NDCE	DBESP-WPR	1990
137	NEI26581	Clearwater Paper Corp - PPD & CPD, Idaho	Lewiston	ID	Kraft	No	137.204	SDT (Kraft)	SCBR	1987
137	NEI26581	Clearwater Paper Corp - PPD & CPD, Idaho	Lewiston	ID	Kraft	No	137.511	Lime Kiln	ESP	1958
137	NEI26581	Clearwater Paper Corp - PPD & CPD, Idaho	Lewiston	ID	Kraft	No	137.512	Lime Kiln	ESP/PBSCBR	1975
137	NEI26581	Clearwater Paper Corp - PPD & CPD, Idaho	Lewiston	ID	Kraft	No	137.721	NDCE	DBESP-WPR	1987
138	NEI18652	Clearwater Paper Corporation	Arkansas City	AR	Kraft	No	138.001	Lime Kiln	SCBR	1976
138	NEI18652	Clearwater Paper Corporation	Arkansas City	AR	Kraft	No	138.002	NDCE	DBESP-WPR	1991
138	NEI18652	Clearwater Paper Corporation	Arkansas City	AR	Kraft	No	138.003	SDT (Kraft)	PBSCBR	1991
139	NEI42357	PORT TOWNSEND PAPER CORP	Port Townsend	WA	Kraft, Secondary	No	139.02	NDCE	DBESP-WPR/DBESP/DBESP	1969
139	NEI42357	PORT TOWNSEND PAPER CORP	Port Townsend	WA	Kraft, Secondary	No	139.03	SDT (Kraft)	SCBR	1969
139	NEI42357	PORT TOWNSEND PAPER CORP	Port Townsend	WA	Kraft, Secondary	No	139.04	Lime Kiln	SCBR	1975
140	NEI13340	Cascade Pacific Pulp, LLC	Halsey	OR	Kraft	Yes	140.32	Lime Kiln	SCBR	1968
140	NEI13340	Cascade Pacific Pulp, LLC	Halsey	OR	Kraft	Yes	140.55	NDCE	DBESP	1968
140	NEI13340	Cascade Pacific Pulp, LLC	Halsey	OR	Kraft	Yes	140.57	SDT (Kraft)	PBSCBR	1968
142	NEI41552	Packaging Corporation of America	Counce	TN	Kraft, Secondary	No	142.CU7214	NDCE	DBESP	2011
142	NEI41552	Packaging Corporation of America	Counce	TN	Kraft, Secondary	No	142.CU7215	NDCE	DBESP	1999
142	NEI41552	Packaging Corporation of America	Counce	TN	Kraft, Secondary	No	142.CU7216	NDCE	WBESP	2011
142	NEI41552	Packaging Corporation of America	Counce	TN	Kraft, Secondary	No	142.P6009	Lime Kiln	SCBR	1975
142	NEI41552	Packaging Corporation of America	Counce	TN	Kraft, Secondary	No	142.P6025	Lime Kiln	SCBR	1960
142	NEI41552	Packaging Corporation of America	Counce	TN	Kraft, Secondary	No	142.P7236	SDT (Kraft)	SCBR	1999
142	NEI41552	Packaging Corporation of America	Counce	TN	Kraft, Secondary	No	142.P7413	SDT (Kraft) (2)	SCBR	1985
143	NEI26504	Packaging Corporation of America	Clyattville	GA	Kraft	No	143.6063	Lime Kiln	ESP	1992
143	NEI26504	Packaging Corporation of America	Clyattville	GA	Kraft	No	143.7040	NDCE	DBESP	2009
143	NEI26504	Packaging Corporation of America	Clyattville	GA	Kraft	No	143.7045	SDT (Kraft)	INC_RF	2009
145	NEI33135	Luke Paper Company	Luke	MD	Kraft	No	145.31	BLO		1986
145	NEI33135	Luke Paper Company	Luke	MD	Kraft	No	145.54	DCE	WBESP	1959
145	NEI33135	Luke Paper Company	Luke	MD	Kraft	No	145.55	DCE	WBESP	1986
145	NEI33135	Luke Paper Company	Luke	MD	Kraft	No	145.56	SDT (Kraft)	OTH	1959
145	NEI33135	Luke Paper Company	Luke	MD	Kraft	No	145.57	SDT (Kraft)	SCBR	1986

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145	NEI706	Luke Paper Company	Luke	MD	Kraft	No	145.001	Lime Kiln	SCBR	1966
146	NEI759	WestRock Company – Covington Mill	Covington	VA	Kraft	No	146.10	SDT (Kraft)	SCBR	1996
146	NEI759	WestRock Company – Covington Mill	Covington	VA	Kraft	No	146.16	NDCE	DBESP-WPR	1991
146	NEI759	WestRock Company – Covington Mill	Covington	VA	Kraft	No	146.17	SDT (Kraft)	SCBR	1991
146	NEI759	WestRock Company – Covington Mill	Covington	VA	Kraft	No	146.23	BLO		1996
146	NEI759	WestRock Company – Covington Mill	Covington	VA	Kraft	No	146.30	Lime Kiln	ESP/SCBR	1998
146	NEI759	WestRock Company – Covington Mill	Covington	VA	Kraft	No	146.6	Lime Kiln	SCBR	1950
146	NEI759	WestRock Company – Covington Mill	Covington	VA	Kraft	No	146.8	DCE	WBESP	1996
147	NEI6450	WESTVACO TEXAS LP	EVADALE	TX	Kraft	No	147.14	NDCE	DBESP	2003
147	NEI6450	WESTVACO TEXAS LP	EVADALE	TX	Kraft	No	147.161	SDT (Kraft)	SCBR	2003
147	NEI6450	WESTVACO TEXAS LP	EVADALE	TX	Kraft	No	147.243	SDT (Kraft)	SCBR	2003
147	NEI6450	WESTVACO TEXAS LP	EVADALE	TX	Kraft	No	147.244	SDT (Kraft)	SCBR	2003
147	NEI6450	WESTVACO TEXAS LP	EVADALE	TX	Kraft	No	147.3	Lime Kiln	SCBR	1980
147	NEI6450	WESTVACO TEXAS LP	EVADALE	TX	Kraft	No	147.5	NDCE	DBESP	2003
147	NEI6450	WESTVACO TEXAS LP	EVADALE	TX	Kraft	No	147.55	Lime Kiln	CYC/ESP	2010
148	NEI46931	WestRock Company	Cottonton	AL	Kraft, Secondary	No	148.001	NDCE	DBESP	1996
148	NEI46931	WestRock Company	Cottonton	AL	Kraft, Secondary	No	148.002	SDT (Kraft)	SCBR	1996
148	NEI46931	WestRock Company	Cottonton	AL	Kraft, Secondary	No	148.003	Lime Kiln	SCBR	1966
148	NEI46931	WestRock Company	Cottonton	AL	Kraft, Secondary	No	148.007	NDCE	DBESP	1990
148	NEI46931	WestRock Company	Cottonton	AL	Kraft, Secondary	No	148.008	SDT (Kraft)	SCBR	1990
148	NEI46931	WestRock Company	Cottonton	AL	Kraft, Secondary	No	148.009	Lime Kiln	ESP	1990
149	NEI40488	P.H. Glatfelter Company - Chillicothe Facility	Chillicothe	OH	Kraft	No	149.B011	NDCE	DBESP	1999
149	NEI40488	P.H. Glatfelter Company - Chillicothe Facility	Chillicothe	OH	Kraft	No	149.P001	Lime Kiln	CYC/SCBR	1961
149	NEI40488	P.H. Glatfelter Company - Chillicothe Facility	Chillicothe	OH	Kraft	No	149.P005	SDT (Kraft)	SCBR	1999
150	NEI6273	Catalyst Paper Operations Inc. Rumford Division	RUMFORD	ME	Kraft, Mechanical	No	150.CAU-12	Lime Kiln	SCBR	1989
150	NEI6273	Catalyst Paper Operations Inc. Rumford Division	RUMFORD	ME	Kraft, Mechanical	No	150.CREC-1	NDCE	DBESP	1992
150	NEI6273	Catalyst Paper Operations Inc. Rumford Division	RUMFORD	ME	Kraft, Mechanical	No	150.CREC-2a		SCBR	1992
150	NEI6273	Catalyst Paper Operations Inc. Rumford Division	RUMFORD	ME	Kraft, Mechanical	No	150.CREC-2b		SCBR	1992
150	NEI6273	Catalyst Paper Operations Inc. Rumford Division	RUMFORD	ME	Kraft, Mechanical	No	150.CREC-2a/2b	SDT (Kraft)	SCBR	1992
151	NEI41252	KapStone	North Charleston	SC	Kraft	No	151.CP001	Lime Kiln	SCBR (NCG scrubbers pre-kiln + LK SCBR]	1990

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151	NEI41252	KapStone	North Charleston	SC	Kraft	No	151.CP002	Lime Kiln	ESP (NCG scrubbers pre-kiln + LK ESP]	1990
151	NEI41252	KapStone	North Charleston	SC	Kraft	No	151.REC001	BLO		1983
151	NEI41252	KapStone	North Charleston	SC	Kraft	No	151.REC004	NDCE	DBESP	1984
151	NEI41252	KapStone	North Charleston	SC	Kraft	No	151.REC005		SCBR/STRIP	1984
151	NEI41252	KapStone	North Charleston	SC	Kraft	No	151.REC006		SCBR/STRIP	1984
151	NEI41252	KapStone	North Charleston	SC	Kraft	No	151.REC005/006	SDT (Kraft)	SCBR/STRIP	1984
151	NEI41252	KapStone	North Charleston	SC	Kraft	No	151.REC007	DCE	DBESP	1983
151	NEI41252	KapStone	North Charleston	SC	Kraft	No	151.REC008	SDT (Kraft)	SCBR/STRIP	1983
151	NEI41252	KapStone	North Charleston	SC	Kraft	No	151.REC009	SDT (Kraft)	SCBR/STRIP	1983
152	NEI11338	Wickliffe Paper Company	Wickliffe	KY	Kraft	No	152.03	DCE	WBESP/SCBR	1969
152	NEI11338	Wickliffe Paper Company	Wickliffe	KY	Kraft	No	152.04	SDT (Kraft)	SCBR	1969
152	NEI11338	Wickliffe Paper Company	Wickliffe	KY	Kraft	No	152.07	BLO		1969
152	NEI11338	Wickliffe Paper Company	Wickliffe	KY	Kraft	No	152.08	Lime Kiln	SCBR	1969
153	NEI33043	Hood Container of Louisiana LLC	St. Francisville	LA	Kraft	No	153.EQT 0053	Lime Kiln	SCBR	1988
153	NEI33043	Hood Container of Louisiana LLC	St. Francisville	LA	Kraft	No	153.EQT 0065	NDCE	SCBR	1998
153	NEI33043	Hood Container of Louisiana LLC	St. Francisville	LA	Kraft	No	153.EQT 0066	SDT (Kraft)	SCBR	1998
154	NEI46739	Verso Corporation - Wisconsin Rapids Mill	Wisconsin Rapids	WI	Kraft	No	154.P30	Lime Kiln	ESP/SCBR	1989
154	NEI46739	Verso Corporation - Wisconsin Rapids Mill	Wisconsin Rapids	WI	Kraft	No	154.P32	SDT (Kraft)	SCBR	1995
154	NEI46739	Verso Corporation - Wisconsin Rapids Mill	Wisconsin Rapids	WI	Kraft	No	154.P35	SDT (Kraft)	SCBR	1987
154	NEI46739	Verso Corporation - Wisconsin Rapids Mill	Wisconsin Rapids	WI	Kraft	No	154.P36	DCE	WBESP	1987
154	NEI46739	Verso Corporation - Wisconsin Rapids Mill	Wisconsin Rapids	WI	Kraft	No	154.P37	DCE	WBESP	1989
154	NEI46739	Verso Corporation - Wisconsin Rapids Mill	Wisconsin Rapids	WI	Kraft	No	154.P38	SDT (Kraft)	PBSCBR	1989
154	NEI46739	Verso Corporation - Wisconsin Rapids Mill	Wisconsin Rapids	WI	Kraft	No	154.P39	DCE	WBESP	1995
154	NEI46739	Verso Corporation - Wisconsin Rapids Mill	Wisconsin Rapids	WI	Kraft	No	154.P40			1995
154	NEI46739	Verso Corporation - Wisconsin Rapids Mill	Wisconsin Rapids	WI	Kraft	No	154.P41			1995
154	NEI46739	Verso Corporation - Wisconsin Rapids Mill	Wisconsin Rapids	WI	Kraft	No	154.P40/41	BLO		1995
155	NEI33883	Escanaba Paper Company	Escanaba	MI	Kraft, Mechanical	No	155.LIME KILN	Lime Kiln	SCBR	1972
155	NEI33883	Escanaba Paper Company	Escanaba	MI	Kraft, Mechanical	No	155.RECOVERY FURNACE	NDCE	DBESP	1994
155	NEI33883	Escanaba Paper Company	Escanaba	MI	Kraft, Mechanical	No	155.SDT	SDT (Kraft)	PBSCBR	1994
156	NEI42338	Longview Fibre Paper & Packaging, Inc.	Longview	WA	Kraft, SemiChem	No	156.143100	Lime Kiln	SCBR	1992
156	NEI42338	Longview Fibre Paper & Packaging, Inc.	Longview	WA	Kraft, SemiChem	No	156.145000	Lime Kiln	SCBR	1992
156	NEI42338	Longview Fibre Paper & Packaging, Inc.	Longview	WA	Kraft, SemiChem	No	156.BLOXID	BLO		2001
156	NEI42338	Longview Fibre Paper & Packaging, Inc.	Longview	WA	Kraft, SemiChem	No	156.LK5	Lime Kiln	ESP	1982

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156	NEI42338	Longview Fibre Paper & Packaging, Inc.	Longview	WA	Kraft, SemiChem	No	156.RF18	DCE	WBESP	1965
156	NEI42338	Longview Fibre Paper & Packaging, Inc.	Longview	WA	Kraft, SemiChem	No	156.RF19	DCE	WBESP	2001
156	NEI42338	Longview Fibre Paper & Packaging, Inc.	Longview	WA	Kraft, SemiChem	No	156.RF22	NDCE	DBESP	1992
156	NEI42338	Longview Fibre Paper & Packaging, Inc.	Longview	WA	Kraft, SemiChem	No	156.SMEL18	SDT (Kraft)	PBSCBR	1965
156	NEI42338	Longview Fibre Paper & Packaging, Inc.	Longview	WA	Kraft, SemiChem	No	156.SMEL19	SDT (Kraft)	PBSCBR	2001
156	NEI42338	Longview Fibre Paper & Packaging, Inc.	Longview	WA	Kraft, SemiChem	No	156.SMEL22	SDT (Kraft)	PBSCBR	1992
159	NEI8177	Interstate Paper, LLC	Riceboro	GA	Kraft	No	159.PW04	SDT (Kraft)	SCBR	1991
159	NEI8177	Interstate Paper, LLC	Riceboro	GA	Kraft	No	159.F3	NDCE	SCBR	1991
159	NEI8177	Interstate Paper, LLC	Riceboro	GA	Kraft	No	159.F4	Lime Kiln	SCBR	1968
162	NEI46760	International Paper	Eastover	SC	Kraft	No	162.371A	Lime Kiln	SCBR	1982
162	NEI46760	International Paper	Eastover	SC	Kraft	No	162.372A	Lime Kiln	ESP	1989
162	NEI46760	International Paper	Eastover	SC	Kraft	No	162.381A	NDCE	DBESP	1982
162	NEI46760	International Paper	Eastover	SC	Kraft	No	162.381C	SDT (Kraft)	SCBR	1982
162	NEI46760	International Paper	Eastover	SC	Kraft	No	162.382A	NDCE	DBESP	1989
162	NEI46760	International Paper	Eastover	SC	Kraft	No	162.382B	SDT (Kraft)	SCBR	1989
163	NEI8560	International Paper Company	Prattville	AL	Kraft, Secondary	No	163.BLO404			2007
163	NEI8560	International Paper Company	Prattville	AL	Kraft, Secondary	No	163.BLO405			2007
163	NEI8560	International Paper Company	Prattville	AL	Kraft, Secondary	No	163.BLO404/BLO405	BLO		2007
163	NEI8560	International Paper Company	Prattville	AL	Kraft, Secondary	No	163.LK1501	Lime Kiln	SCBR	1967
163	NEI8560	International Paper Company	Prattville	AL	Kraft, Secondary	No	163.LK2502	Lime Kiln	SCBR	1980
163	NEI8560	International Paper Company	Prattville	AL	Kraft, Secondary	No	163.RF1901	DCE	WBESP	2007
163	NEI8560	International Paper Company	Prattville	AL	Kraft, Secondary	No	163.RF2904	NDCE	WBESP	1980
163	NEI8560	International Paper Company	Prattville	AL	Kraft, Secondary	No	163.SD1902	SDT (Kraft)	SCBR	2007
163	NEI8560	International Paper Company	Prattville	AL	Kraft, Secondary	No	163.SD1903	SDT (Kraft)	SCBR	2007
163	NEI8560	International Paper Company	Prattville	AL	Kraft, Secondary	No	163.SD2906	SDT (Kraft)	SCBR	1980
164	NEI42710	Thilmany,LLC	Kaukauna	WI	Kraft	No	164.B08	NDCE	DBESP	1996
164	NEI42710	Thilmany,LLC	Kaukauna	WI	Kraft	No	164.B10	NDCE	DBESP	1995
164	NEI42710	Thilmany,LLC	Kaukauna	WI	Kraft	No	164.P08	SDT (Kraft)	SCBR	1996
164	NEI42710	Thilmany,LLC	Kaukauna	WI	Kraft	No	164.P10	SDT (Kraft)	SCBR	1995
164	NEI42710	Thilmany,LLC	Kaukauna	WI	Kraft	No	164.P12	Lime Kiln	SCBR	1986
165	NEI41628	International Paper Company	Queen City	TX	Kraft	No	165.000002	Lime Kiln	SCBR	1975
165	NEI41628	International Paper Company	Queen City	TX	Kraft	No	165.000006	NDCE	DBESP	1991
165	NEI41628	International Paper Company	Queen City	TX	Kraft	No	165.000008	SDT (Kraft)	SCBR	1991
165	NEI41628	International Paper Company	Queen City	TX	Kraft	No	165.000013	NDCE	DBESP	1990
165	NEI41628	International Paper Company	Queen City	TX	Kraft	No	165.000014	SDT (Kraft)	SCBR	1990
165	NEI41628	International Paper Company	Queen City	TX	Kraft	No	165.000019	Lime Kiln	SCBR	1972
166	NEI41314	International Paper	Georgetown	SC	Kraft	No	166.BLOX1			1989
166	NEI41314	International Paper	Georgetown	SC	Kraft	No	166.BLOX2		COND/RTO	1989
166	NEI41314	International Paper	Georgetown	SC	Kraft	No	166.BLOX1/2	BLO	COND/RTO	1989
166	NEI41314	International Paper	Georgetown	SC	Kraft	No	166.LK01	Lime Kiln	SCBR	1963
166	NEI41314	International Paper	Georgetown	SC	Kraft	No	166.LK02	Lime Kiln	SCBR	1979

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166	NEI41314	International Paper	Georgetown	SC	Kraft	No	166.RB01	DCE	WBESP	1983
166	NEI41314	International Paper	Georgetown	SC	Kraft	No	166.RB02	DCE	WBESP/SCBR	1989
166	NEI41314	International Paper	Georgetown	SC	Kraft	No	166.ST01	SDT (Kraft)	SCBR	1983
166	NEI41314	International Paper	Georgetown	SC	Kraft	No	166.ST02	SDT (Kraft)	SCBR	1989
167	NEI34070	International Paper Co. - Vicksburg Mill	Redwood	MS	Kraft, Secondary	No	167.004LK	Lime Kiln	SCBR	1967
167	NEI34070	International Paper Co. - Vicksburg Mill	Redwood	MS	Kraft, Secondary	No	167.005RB	DCE	WBESP	1967
167	NEI34070	International Paper Co. - Vicksburg Mill	Redwood	MS	Kraft, Secondary	No	167.007SDT	SDT (Kraft)	SCBR	1967
167	NEI34070	International Paper Co. - Vicksburg Mill	Redwood	MS	Kraft, Secondary	No	167.TK0217	BLO		1967
169	NEI33013	International Paper	Mansfield	LA	Kraft, SemiChem	No	169.03	Lime Kiln	SCBR	1981
169	NEI33013	International Paper	Mansfield	LA	Kraft, SemiChem	No	169.04	NDCE	WBESP	1994
169	NEI33013	International Paper	Mansfield	LA	Kraft, SemiChem	No	169.05	NDCE	WBESP	1995
169	NEI33013	International Paper	Mansfield	LA	Kraft, SemiChem	No	169.06	SDT (Kraft)	PBSCBR	1994
169	NEI33013	International Paper	Mansfield	LA	Kraft, SemiChem	No	169.07	SDT (Kraft)	PBSCBR	1995
171	NEI18658	Evergreen Packaging Inc	Pine Bluff	AR	Kraft	No	171.002	DCE	DBESP-WPR	1990
171	NEI18658	Evergreen Packaging Inc	Pine Bluff	AR	Kraft	No	171.003	DCE	DBESP-WPR	1990
171	NEI18658	Evergreen Packaging Inc	Pine Bluff	AR	Kraft	No	171.004	DCE	DBESP-WPR	1991
171	NEI18658	Evergreen Packaging Inc	Pine Bluff	AR	Kraft	No	171.006	SDT (Kraft)	OTH	1990
171	NEI18658	Evergreen Packaging Inc	Pine Bluff	AR	Kraft	No	171.007	SDT (Kraft)	SCBR	1990
171	NEI18658	Evergreen Packaging Inc	Pine Bluff	AR	Kraft	No	171.008	SDT (Kraft)	SCBR	1991
171	NEI18658	Evergreen Packaging Inc	Pine Bluff	AR	Kraft	No	171.009	Lime Kiln	SCBR	1958
171	NEI18658	Evergreen Packaging Inc	Pine Bluff	AR	Kraft	No	171.010	Lime Kiln	SCBR	1964
171	NEI18658	Evergreen Packaging Inc	Pine Bluff	AR	Kraft	No	171.021	BLO		1991
172	NEI18335	International Paper Company	Selma	AL	Kraft, Secondary	No	172.LK03	Lime Kiln	SCBR	1986
172	NEI18335	International Paper Company	Selma	AL	Kraft, Secondary	No	172.RB01	NDCE	WBESP	1982
172	NEI18335	International Paper Company	Selma	AL	Kraft, Secondary	No	172.RB02	NDCE	WBESP	1987
172	NEI18335	International Paper Company	Selma	AL	Kraft, Secondary	No	172.ST01	SDT (Kraft)	SCBR	1982
172	NEI18335	International Paper Company	Selma	AL	Kraft, Secondary	No	172.ST02	SDT (Kraft)	SCBR	1987
173	NEI35908	International Paper Company	Ticonderoga	NY	Kraft	No	173.LK1	Lime Kiln	SCBR	1970
173	NEI35908	International Paper Company	Ticonderoga	NY	Kraft	No	173.RECOVB	NDCE	DBESP	1970
173	NEI35908	International Paper Company	Ticonderoga	NY	Kraft	No	173.SDT	SDT (Kraft)	SCBR	1970
174	NEI40247	International Paper, Inc	Riegelwood	NC	Kraft	No	174.G-18	Lime Kiln	ESP/SCBR	1998
174	NEI40247	International Paper, Inc	Riegelwood	NC	Kraft	No	174.G-32	NDCE	DBESP	1982
174	NEI40247	International Paper, Inc	Riegelwood	NC	Kraft	No	174.G-60	BLO		1974
174	NEI40247	International Paper, Inc	Riegelwood	NC	Kraft	No	174.G-63B	SDT (Kraft)	SCBR	1974
174	NEI40247	International Paper, Inc	Riegelwood	NC	Kraft	No	174.G-63C	SDT (Kraft)	SCBR	1982
174	NEI40247	International Paper, Inc	Riegelwood	NC	Kraft	No	174.G-92	DCE	WBESP	1974
174	NEI40247	International Paper, Inc	Riegelwood	NC	Kraft	No	174.G-95	Lime Kiln	CYC/SCBR	1976
175	NEI26514	International Paper Company	AUGUSTA	GA	Kraft	No	175.APRX	BLO [See Notes]		1989
175	NEI26514	International Paper Company	AUGUSTA	GA	Kraft	No	175.LK1A	Lime Kiln	SCBR	1960

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175	NEI26514	International Paper Company	AUGUSTA	GA	Kraft	No	175.LK2A	Lime Kiln	SCBR	1987
175	NEI26514	International Paper Company	AUGUSTA	GA	Kraft	No	175.RB2A	DCE	WBESP	1989
175	NEI26514	International Paper Company	AUGUSTA	GA	Kraft	No	175.RB3A	NDCE	DBESP	1988
175	NEI26514	International Paper Company	AUGUSTA	GA	Kraft	No	175.ST2A	SDT (Kraft)	SCBR	1989
175	NEI26514	International Paper Company	AUGUSTA	GA	Kraft	No	175.ST3A	SDT (Kraft)	SCBR	1988
176	NEI47104	KapStone Kraft Paper Corporation	Roanoke Rapids	NC	Kraft	No	176.G-37	SDT (Kraft)	SCBR	1997
176	NEI47104	KapStone Kraft Paper Corporation	Roanoke Rapids	NC	Kraft	No	176.G-5	Lime Kiln	SCBR	1961
176	NEI47104	KapStone Kraft Paper Corporation	Roanoke Rapids	NC	Kraft	No	176.RB7	NDCE	DBESP	1997
177	NEI33887	Verso Quinnesec LLC	Quinnesec	MI	Kraft	No	177.EU0804	NDCE	DBESP	1981
177	NEI33887	Verso Quinnesec LLC	Quinnesec	MI	Kraft	No	177.EU0805	SDT (Kraft)	SCBR	1981
177	NEI33887	Verso Quinnesec LLC	Quinnesec	MI	Kraft	No	177.EU0905	Lime Kiln	SCBR	1981
178	NEI26309	International Paper	Cantonment	FL	Kraft	No	178.08P012	NDCE	DBESP	1989
178	NEI26309	International Paper	Cantonment	FL	Kraft	No	178.08P013	NDCE	DBESP	1989
178	NEI26309	International Paper	Cantonment	FL	Kraft	No	178.08T014	SDT (Kraft)	SCBR	1989
178	NEI26309	International Paper	Cantonment	FL	Kraft	No	178.08T015	SDT (Kraft)	SCBR	1989
178	NEI26309	International Paper	Cantonment	FL	Kraft	No	178.09P037	Lime Kiln	ESP/SCBR	1995
179	NEI45474	Rock-Tenn Mill Company, LLC	Demopolis	AL	Kraft	No	179.LK3	Lime Kiln	ESP	1995
179	NEI45474	Rock-Tenn Mill Company, LLC	Demopolis	AL	Kraft	No	179.RF3	NDCE	DBESP	1992
179	NEI45474	Rock-Tenn Mill Company, LLC	Demopolis	AL	Kraft	No	179.SDT	SDT (Kraft)	SCBR	1992
180	NEI26471	Graphic Packaging International, Inc.	Macon	GA	Kraft, Secondary	No	180.D001	NDCE	DBESP	1992
180	NEI26471	Graphic Packaging International, Inc.	Macon	GA	Kraft, Secondary	No	180.D002	SDT (Kraft)	SCBR	1992
180	NEI26471	Graphic Packaging International, Inc.	Macon	GA	Kraft, Secondary	No	180.L001	Lime Kiln	SCBR	1996
180	NEI26471	Graphic Packaging International, Inc.	Macon	GA	Kraft, Secondary	No	180.L002	Lime Kiln	SCBR	1996
181	NEI6057	Graphic Packaging International Inc.	West Monroe	LA	Kraft, Secondary, SemiChem	No	181.01	Lime Kiln	SCBR	1964
181	NEI6057	Graphic Packaging International Inc.	West Monroe	LA	Kraft, Secondary, SemiChem	No	181.09		WBESP	1993
181	NEI6057	Graphic Packaging International Inc.	West Monroe	LA	Kraft, Secondary, SemiChem	No	181.10		WBESP	1993
181	NEI6057	Graphic Packaging International Inc.	West Monroe	LA	Kraft, Secondary, SemiChem	No	181.09/10	NDCE	WBESP	1993
181	NEI6057	Graphic Packaging International Inc.	West Monroe	LA	Kraft, Secondary, SemiChem	No	181.11	SDT (Kraft)	SCBR	1993
181	NEI6057	Graphic Packaging International Inc.	West Monroe	LA	Kraft, Secondary, SemiChem	No	181.14	Lime Kiln	SCBR	1976
181	NEI6057	Graphic Packaging International Inc.	West Monroe	LA	Kraft, Secondary, SemiChem	No	181.49		DBESP	1990
181	NEI6057	Graphic Packaging International Inc.	West Monroe	LA	Kraft, Secondary, SemiChem	No	181.50		DBESP	1990
181	NEI6057	Graphic Packaging International Inc.	West Monroe	LA	Kraft, Secondary, SemiChem	No	181.49/50	NDCE	DBESP	1990
181	NEI6057	Graphic Packaging International Inc.	West Monroe	LA	Kraft, Secondary, SemiChem	No	181.51	SDT (Kraft)	SCBR	1990
182	NEI7181	PH Glatfelter	Spring Grove	PA	Kraft	No	182.037	NDCE	DBESP	1993
182	NEI7181	PH Glatfelter	Spring Grove	PA	Kraft	No	182.103	Calcliner	SCBR	1966
182	NEI7181	PH Glatfelter	Spring Grove	PA	Kraft	No	182.110	SDT (Kraft)	SCBR	1993
183	NEI33103	Expera Old Town LLC	Old Town	ME	Kraft	No	183.002	NDCE	DBESP	1987

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183	NEI33103	Expera Old Town LLC	Old Town	ME	Kraft	No	183.003	SDT (Kraft)	SCBR	1987
183	NEI33103	Expera Old Town LLC	Old Town	ME	Kraft	No	183.004	Lime Kiln	SCBR	1974
184	NEI46817	Georgia-Pacific Consumer Operations LLC Port Hudson Operations	Zachary	LA	Kraft	No	184.72	NDCE	DBESP-WPR	2000
184	NEI46817	Georgia-Pacific Consumer Operations LLC Port Hudson Operations	Zachary	LA	Kraft	No	184.73	NDCE	DBESP-WPR	2001
184	NEI46817	Georgia-Pacific Consumer Operations LLC Port Hudson Operations	Zachary	LA	Kraft	No	184.LK1	Lime Kiln	SCBR	2000
184	NEI46817	Georgia-Pacific Consumer Operations LLC Port Hudson Operations	Zachary	LA	Kraft	No	184.LK2	Lime Kiln	ESP/SCBR	2000
184	NEI46817	Georgia-Pacific Consumer Operations LLC Port Hudson Operations	Zachary	LA	Kraft	No	184.SDT1	SDT (Kraft)	SCBR	2000
184	NEI46817	Georgia-Pacific Consumer Operations LLC Port Hudson Operations	Zachary	LA	Kraft	No	184.SDT2a	SDT (Kraft)	SCBR	2001
184	NEI46817	Georgia-Pacific Consumer Operations LLC Port Hudson Operations	Zachary	LA	Kraft	No	184.SDT2b	SDT (Kraft)	SCBR	2001
185	NEI46599	Georgia Pacific Consumer Products (Camas), LLC	CAMAS	WA	Kraft	No	185.02	NDCE	DBESP/SCBR	2007
185	NEI46599	Georgia Pacific Consumer Products (Camas), LLC	CAMAS	WA	Kraft	No	185.05	SDT (Kraft)	PBSCBR	2007
185	NEI46599	Georgia Pacific Consumer Products (Camas), LLC	CAMAS	WA	Kraft	No	185.07	Lime Kiln	SCBR	2002
186	NEI18334	Georgia-Pacific Consumer Products LP (Naheola Mill)	Pennington	AL	Kraft	No	186.LK	Lime Kiln	ESP/SCBR	1992
186	NEI18334	Georgia-Pacific Consumer Products LP (Naheola Mill)	Pennington	AL	Kraft	No	186.RB15	NDCE	DBESP	1992
186	NEI18334	Georgia-Pacific Consumer Products LP (Naheola Mill)	Pennington	AL	Kraft	No	186.RB17	SDT (Kraft)	SCBR	1992
188	NEI40600	Georgia-Pacific Toledo LLC	Toledo	OR	Kraft, Secondary, SemiChem	No	188.001LK1	Lime Kiln	SCBR	1956
188	NEI40600	Georgia-Pacific Toledo LLC	Toledo	OR	Kraft, Secondary, SemiChem	No	188.002LK2	Lime Kiln	SCBR	1959
188	NEI40600	Georgia-Pacific Toledo LLC	Toledo	OR	Kraft, Secondary, SemiChem	No	188.003LK3	Lime Kiln	SCBR	1963
188	NEI40600	Georgia-Pacific Toledo LLC	Toledo	OR	Kraft, Secondary, SemiChem	No	188.014RB1	DCE	WBESP	1996
188	NEI40600	Georgia-Pacific Toledo LLC	Toledo	OR	Kraft, Secondary, SemiChem	No	188.015SD1	SDT (Kraft)	SCBR	1996
188	NEI40600	Georgia-Pacific Toledo LLC	Toledo	OR	Kraft, Secondary, SemiChem	No	188.016RB2	DCE	WBESP	1996
188	NEI40600	Georgia-Pacific Toledo LLC	Toledo	OR	Kraft, Secondary, SemiChem	No	188.017SD2	SDT (Kraft)	SCBR	1996
188	NEI40600	Georgia-Pacific Toledo LLC	Toledo	OR	Kraft, Secondary, SemiChem	No	188.HBLBLO	BLO		1996
189	NEI54342	Georgia-Pacific LLC Crossett Paper Operations	Crossett	AR	Kraft	No	189.SN25	Lime Kiln	SCBR	1981
189	NEI54342	Georgia-Pacific LLC Crossett Paper Operations	Crossett	AR	Kraft	No	189.SN26	NDCE	WBESP	1981
189	NEI54342	Georgia-Pacific LLC Crossett Paper Operations	Crossett	AR	Kraft	No	189.SN27	SDT (Kraft)	SCBR	1981

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189	NEI54342	Georgia-Pacific LLC Crossett Paper Operations	Crossett	AR	Kraft	No	189.SN28	SDT (Kraft)	SCBR	1981
190	NEI26491	Georgia-Pacific Cedar Springs, LLC	Cedar Springs	GA	Kraft, Secondary, SemiChem	No	190.L600	Lime Kiln	SCBR	1963
190	NEI26491	Georgia-Pacific Cedar Springs, LLC	Cedar Springs	GA	Kraft, Secondary, SemiChem	No	190.L601	Lime Kiln	SCBR	1967
190	NEI26491	Georgia-Pacific Cedar Springs, LLC	Cedar Springs	GA	Kraft, Secondary, SemiChem	No	190.R400	NDCE	DBESP	1990
190	NEI26491	Georgia-Pacific Cedar Springs, LLC	Cedar Springs	GA	Kraft, Secondary, SemiChem	No	190.R401	NDCE	DBESP	1991
190	NEI26491	Georgia-Pacific Cedar Springs, LLC	Cedar Springs	GA	Kraft, Secondary, SemiChem	No	190.R402	NDCE	DBESP	1983
190	NEI26491	Georgia-Pacific Cedar Springs, LLC	Cedar Springs	GA	Kraft, Secondary, SemiChem	No	190.R404	SDT (Kraft)	SCBR	1990
190	NEI26491	Georgia-Pacific Cedar Springs, LLC	Cedar Springs	GA	Kraft, Secondary, SemiChem	No	190.R405	SDT (Kraft)	SCBR	1991
190	NEI26491	Georgia-Pacific Cedar Springs, LLC	Cedar Springs	GA	Kraft, Secondary, SemiChem	No	190.R406	SDT (Kraft)	SCBR	1983
195	NEI46835	Woodland Pulp LLC	Baileyville	ME	Kraft	Yes	195.002	Lime Kiln	SCBR	1965
195	NEI46835	Woodland Pulp LLC	Baileyville	ME	Kraft	Yes	195.003	NDCE	DBESP	1988
195	NEI46835	Woodland Pulp LLC	Baileyville	ME	Kraft	Yes	195.007	SDT (Kraft)	SCBR	1988
196	NEI18660	Domtar A.W. LLC	Ashdown	AR	Kraft	No	196.SN-02	Lime Kiln	ESP	1991
196	NEI18660	Domtar A.W. LLC	Ashdown	AR	Kraft	No	196.SN-06	NDCE	DBESP	1989
196	NEI18660	Domtar A.W. LLC	Ashdown	AR	Kraft	No	196.SN-08North		SCBR	1989
196	NEI18660	Domtar A.W. LLC	Ashdown	AR	Kraft	No	196.SN-08South		SCBR	1989
196	NEI18660	Domtar A.W. LLC	Ashdown	AR	Kraft	No	196.SN-08North/South	SDT (Kraft)	SCBR	1989
196	NEI18660	Domtar A.W. LLC	Ashdown	AR	Kraft	No	196.SN-09	Lime Kiln	SCBR	1979
196	NEI18660	Domtar A.W. LLC	Ashdown	AR	Kraft	No	196.SN-14	NDCE	DBESP	1989
196	NEI18660	Domtar A.W. LLC	Ashdown	AR	Kraft	No	196.SN-15	SDT (Kraft)	SCBR	1989
197	NEI18657	Mondi Bags USA, LLC	Pine Bluff	AR	Kraft	No	197.1	Lime Kiln	SCBR	1957
197	NEI18657	Mondi Bags USA, LLC	Pine Bluff	AR	Kraft	No	197.12	BLO		1986
197	NEI18657	Mondi Bags USA, LLC	Pine Bluff	AR	Kraft	No	197.2	DCE	DBESP/SCBR	1986
197	NEI18657	Mondi Bags USA, LLC	Pine Bluff	AR	Kraft	No	197.4	SDT (Kraft)	SCBR	1986
198	NEI41565	AbiBow US Inc	Calhoun	TN	Kraft, Mechanical, Secondary	No	198.004	Lime Kiln	SCBR	1989
198	NEI41565	AbiBow US Inc	Calhoun	TN	Kraft, Mechanical, Secondary	No	198.019	NDCE	DBESP	1994
198	NEI41565	AbiBow US Inc	Calhoun	TN	Kraft, Mechanical, Secondary	No	198.020	SDT (Kraft)	SCBR	1994
199	NEI18390	Resolute Forest Products - Coosa Pines Operation	Coosa Pines	AL	Kraft	No	199.002	NDCE	DBESP	1997
199	NEI18390	Resolute Forest Products - Coosa Pines Operation	Coosa Pines	AL	Kraft	No	199.004	SDT (Kraft)	SCBR	1997
199	NEI18390	Resolute Forest Products - Coosa Pines Operation	Coosa Pines	AL	Kraft	No	199.011	Lime Kiln	SCBR	1975
200	NEI47077	Resolute Forest Products - Catawba Operations	Catawba	SC	Kraft, Mechanical	No	200.007_10	Lime Kiln	ESP	1994
200	NEI47077	Resolute Forest Products - Catawba Operations	Catawba	SC	Kraft, Mechanical	No	200.007_8	SDT (Kraft)	SCBR	1984
200	NEI47077	Resolute Forest Products - Catawba Operations	Catawba	SC	Kraft, Mechanical	No	200.007_9	SDT (Kraft)	SCBR	2007
200	NEI47077	Resolute Forest Products - Catawba Operations	Catawba	SC	Kraft, Mechanical	No	200.007RF2	NDCE	DBESP	1984
200	NEI47077	Resolute Forest Products - Catawba Operations	Catawba	SC	Kraft, Mechanical	No	200.007RF3	NDCE	DB-WBESP [2-sided dry and wet]	2007
201	NEI7559	Boise Packaging and Newsprint, LLC	DeRidder	LA	Kraft, Mechanical, Secondary	No	201.SR0001	NDCE	DBESP	2001
201	NEI7559	Boise Packaging and Newsprint, LLC	DeRidder	LA	Kraft, Mechanical, Secondary	No	201.SR0003	Lime Kiln	SCBR	1969
201	NEI7559	Boise Packaging and Newsprint, LLC	DeRidder	LA	Kraft, Mechanical, Secondary	No	201.SR0034	SDT (Kraft)	SCBR	2001

RTI Code	Final NEISiteID	Operator (2015)	City	St	Pulp Processes	Small_business	RTI&EUID	EmissionProcessGroup	RTI_APCD_Type	Install/upgrade year for determining NESHAP impact
202	NEI12411	Boise White Paper, LLC	International Falls	MN	Kraft	No	202.Lime Kiln EU340	Lime Kiln	CYC/SCBR	1990
202	NEI12411	Boise White Paper, LLC	International Falls	MN	Kraft	No	202.Recovery Furnace EU320	NDCE	DBESP	2001
202	NEI12411	Boise White Paper, LLC	International Falls	MN	Kraft	No	202.Smelt Dissolving Tank EU322	SDT (Kraft)	SCBR	2001
203	NEI42410	Boise White Paper LLC	Wallula	WA	Kraft, Semichem	No	203.2DTSr	SDT (Kraft)	SCBR	2000
203	NEI42410	Boise White Paper LLC	Wallula	WA	Kraft, Semichem	No	203.3DTSr	SDT (Kraft)	SCBR	2010
203	NEI42410	Boise White Paper LLC	Wallula	WA	Kraft, Semichem	No	203.LKScr	Lime Kiln	SCBR	1979
203	NEI42410	Boise White Paper LLC	Wallula	WA	Kraft, Semichem	No	203.RF#2	NDCE	DBESP	2000
203	NEI42410	Boise White Paper LLC	Wallula	WA	Kraft, Semichem	No	203.RF#3	NDCE	DBESP	2010
205	NEI8601	BOISE WHITE PAPER LLC	Jackson	AL	Kraft, Secondary	No	205.008	Lime Kiln	SCBR	1964
205	NEI8601	BOISE WHITE PAPER LLC	Jackson	AL	Kraft, Secondary	No	205.009	DCE	WBESP	1973
205	NEI8601	BOISE WHITE PAPER LLC	Jackson	AL	Kraft, Secondary	No	205.010	SDT (Kraft)	SCBR	1973
205	NEI8601	BOISE WHITE PAPER LLC	Jackson	AL	Kraft, Secondary	No	205.025	BLO		1973
206	NEI40282	Blue Ridge Holding Company	Canton	NC	Kraft	No	206.G-31	DCE	WBESP	1991
206	NEI40282	Blue Ridge Holding Company	Canton	NC	Kraft	No	206.G-32	DCE	WBESP	1992
206	NEI40282	Blue Ridge Holding Company	Canton	NC	Kraft	No	206.G-34	BLO	TO/SCBR	1992
206	NEI40282	Blue Ridge Holding Company	Canton	NC	Kraft	No	206.G-35	SDT (Kraft)	OTH	1991
206	NEI40282	Blue Ridge Holding Company	Canton	NC	Kraft	No	206.G-36	SDT (Kraft)	OTH	1992
206	NEI40282	Blue Ridge Holding Company	Canton	NC	Kraft	No	206.G-37	Lime Kiln	SCBR	1947
206	NEI40282	Blue Ridge Holding Company	Canton	NC	Kraft	No	206.G-38	Lime Kiln	SCBR	1954
207	NEI7104	Appleton Papers, Inc.	Roaring Spring	PA	Kraft	No	207.038	NDCE	DBESP	1983
207	NEI7104	Appleton Papers, Inc.	Roaring Spring	PA	Kraft	No	207.103A	Lime Kiln	SCBR	1966
207	NEI7104	Appleton Papers, Inc.	Roaring Spring	PA	Kraft	No	207.108	SDT (Kraft)	PBSCBR	1983
208228535	NEI18373	Alabama River Cellulose, LLC	Perdue Hill	AL	Kraft	No	208228535.001	NDCE	DBESP	1978
208228535	NEI18373	Alabama River Cellulose, LLC	Perdue Hill	AL	Kraft	No	208228535.002	SDT (Kraft)	SCBR	1978
208228535	NEI18373	Alabama River Cellulose, LLC	Perdue Hill	AL	Kraft	No	208228535.003	Lime Kiln	SCBR	1978
208228535	NEI18373	Alabama River Cellulose, LLC	Perdue Hill	AL	Kraft	No	208228535.007	NDCE	DBESP	1991
208228535	NEI18373	Alabama River Cellulose, LLC	Perdue Hill	AL	Kraft	No	208228535.008	SDT (Kraft)	SCBR	1991
208228535	NEI18373	Alabama River Cellulose, LLC	Perdue Hill	AL	Kraft	No	208228535.009	Lime Kiln	ESP	1991
226	NEI33023	WestRock - Hodge Mill	Hodge	LA	Kraft, Secondary, SemiChem	No	226.LK1	Lime Kiln	SCBR	1971
226	NEI33023	WestRock - Hodge Mill	Hodge	LA	Kraft, Secondary, SemiChem	No	226.LK2	Lime Kiln	SCBR	1972
226	NEI33023	WestRock - Hodge Mill	Hodge	LA	Kraft, Secondary, SemiChem	No	226.RECB1	NDCE	WBESP	1996
226	NEI33023	WestRock - Hodge Mill	Hodge	LA	Kraft, Secondary, SemiChem	No	226.RECB2	NDCE	WBESP	1992
226	NEI33023	WestRock - Hodge Mill	Hodge	LA	Kraft, Secondary, SemiChem	No	226.SDT1N	SDT (Kraft)	SCBR	1996
226	NEI33023	WestRock - Hodge Mill	Hodge	LA	Kraft, Secondary, SemiChem	No	226.SDT1S	SDT (Kraft)	SCBR	1996
226	NEI33023	WestRock - Hodge Mill	Hodge	LA	Kraft, Secondary, SemiChem	No	226.SDT2	SDT (Kraft)	SCBR	1992
240	NEI26526	Rayonier Performance Fibers, LLC	JESUP	GA	Kraft	No	240.CA81	Lime Kiln	ESP	1989
240	NEI26526	Rayonier Performance Fibers, LLC	JESUP	GA	Kraft	No	240.RF01	NDCE	DBESP	1973
240	NEI26526	Rayonier Performance Fibers, LLC	JESUP	GA	Kraft	No	240.RF02	SDT (Kraft)	SCBR	1973
240	NEI26526	Rayonier Performance Fibers, LLC	JESUP	GA	Kraft	No	240.RF04	NDCE	DBESP	1982
240	NEI26526	Rayonier Performance Fibers, LLC	JESUP	GA	Kraft	No	240.RF05	SDT (Kraft)	SCBR	1982
240	NEI26526	Rayonier Performance Fibers, LLC	JESUP	GA	Kraft	No	240.RF06	SDT (Kraft)	SCBR	1982
242	NEI34066	Leaf River Cellulose, LLC	New Augusta	MS	Kraft	No	242.AA-011	NDCE	DBESP	1984
242	NEI34066	Leaf River Cellulose, LLC	New Augusta	MS	Kraft	No	242.AA-012	SDT (Kraft)	SCBR	1984
242	NEI34066	Leaf River Cellulose, LLC	New Augusta	MS	Kraft	No	242.AA-013	Lime Kiln	ESP/SCBR	1984
243	NEI8196	GP Cellulose, LLC.	Brunswick	GA	Kraft	No	243.LG07	Lime Kiln	ESP/SCBR	1986
243	NEI8196	GP Cellulose, LLC.	Brunswick	GA	Kraft	No	243.R401	NDCE	DBESP	1996
243	NEI8196	GP Cellulose, LLC.	Brunswick	GA	Kraft	No	243.R403	SDT (Kraft)	SCBR	1996
243	NEI8196	GP Cellulose, LLC.	Brunswick	GA	Kraft	No	243.R407	NDCE	DBESP	1990

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243	NEI8196	GP Cellulose, LLC.	Brunswick	GA	Kraft	No	243.R408	SDT (Kraft)	SCBR	1990
340	NEI46852	Green Bay Packaging Inc.	Morrilton	AR	Kraft, Secondary	No	340.005	NDCE	DBESP	1975
340	NEI46852	Green Bay Packaging Inc.	Morrilton	AR	Kraft, Secondary	No	340.007	SDT (Kraft)	SCBR	1975
340	NEI46852	Green Bay Packaging Inc.	Morrilton	AR	Kraft, Secondary	No	340.008	Lime Kiln	SCBR	1975
525	NEI8265	Georgia Pacific Consumer Operations LLC	Palatka	FL	Kraft	No	525.EU17	Lime Kiln	SCBR	1976
525	NEI8265	Georgia Pacific Consumer Operations LLC	Palatka	FL	Kraft	No	525.EU18	NDCE	DBESP-WPR	2007
525	NEI8265	Georgia Pacific Consumer Operations LLC	Palatka	FL	Kraft	No	525.EU19North	SDT (Kraft)	SCBR	2007
525	NEI8265	Georgia Pacific Consumer Operations LLC	Palatka	FL	Kraft	No	525.EU19South	SDT (Kraft)	SCBR	2007
531	NEI8186	International Paper Company	Savannah	GA	Kraft, Secondary	No	531.LK7	Lime Kiln	ESP	1990
531	NEI8186	International Paper Company	Savannah	GA	Kraft, Secondary	No	531.RF10	SDT (Kraft)	SCBR	1995
531	NEI8186	International Paper Company	Savannah	GA	Kraft, Secondary	No	531.RF15	NDCE	DBESP	1995
606	NEI47091	Foley Cellulose LLC, Foley Mill	Perry	FL	Kraft	No	606.LK4	Lime Kiln	ESP	1986
606	NEI47091	Foley Cellulose LLC, Foley Mill	Perry	FL	Kraft	No	606.RB2	NDCE	DBESP	2010
606	NEI47091	Foley Cellulose LLC, Foley Mill	Perry	FL	Kraft	No	606.RB3	NDCE	DBESP	2014
606	NEI47091	Foley Cellulose LLC, Foley Mill	Perry	FL	Kraft	No	606.RB4	NDCE	DBESP	1975
606	NEI47091	Foley Cellulose LLC, Foley Mill	Perry	FL	Kraft	No	606.SDT2	SDT (Kraft)	SCBR	2010
606	NEI47091	Foley Cellulose LLC, Foley Mill	Perry	FL	Kraft	No	606.SDT3	SDT (Kraft)	SCBR	2014
606	NEI47091	Foley Cellulose LLC, Foley Mill	Perry	FL	Kraft	No	606.SDT4	SDT (Kraft)	SCBR	1975
610	NEI6261	Verso Androscoggin LLC	Jay	ME	Kraft, Mechanical	No	610.10	SDT (Kraft)	SCBR	1975
610	NEI6261	Verso Androscoggin LLC	Jay	ME	Kraft, Mechanical	No	610.4	NDCE	DBESP	1987
610	NEI6261	Verso Androscoggin LLC	Jay	ME	Kraft, Mechanical	No	610.5	NDCE	DBESP	1975
610	NEI6261	Verso Androscoggin LLC	Jay	ME	Kraft, Mechanical	No	610.7	Lime Kiln	SCBR	1965
610	NEI6261	Verso Androscoggin LLC	Jay	ME	Kraft, Mechanical	No	610.8	Lime Kiln	SCBR	1975
610	NEI6261	Verso Androscoggin LLC	Jay	ME	Kraft, Mechanical	No	610.9	SDT (Kraft)	SCBR	1987
613	NEI11172	Georgia Pacific Monticello LLC	Monticello	MS	Kraft, Secondary	No	613.001L		DBESP	1991
613	NEI11172	Georgia Pacific Monticello LLC	Monticello	MS	Kraft, Secondary	No	613.001R		DBESP	1991
613	NEI11172	Georgia Pacific Monticello LLC	Monticello	MS	Kraft, Secondary	No	613.001L/001R	DCE	DBESP	1991
613	NEI11172	Georgia Pacific Monticello LLC	Monticello	MS	Kraft, Secondary	No	613.002L		DBESP	1991
613	NEI11172	Georgia Pacific Monticello LLC	Monticello	MS	Kraft, Secondary	No	613.002R		DBESP	1991
613	NEI11172	Georgia Pacific Monticello LLC	Monticello	MS	Kraft, Secondary	No	613.002L/002R	DCE	DBESP	1991
613	NEI11172	Georgia Pacific Monticello LLC	Monticello	MS	Kraft, Secondary	No	613.005	SDT (Kraft)	SCBR	1991
613	NEI11172	Georgia Pacific Monticello LLC	Monticello	MS	Kraft, Secondary	No	613.006	SDT (Kraft)	SCBR	1991
613	NEI11172	Georgia Pacific Monticello LLC	Monticello	MS	Kraft, Secondary	No	613.007	SDT (Kraft)	SCBR	1991
613	NEI11172	Georgia Pacific Monticello LLC	Monticello	MS	Kraft, Secondary	No	613.008	SDT (Kraft)	SCBR	1991

RTI Code	Final NEISiteID	Operator (2015)	City	St	Pulp Processes	Small_business	RTI&EUID	EmissionProcessGroup	RTI_APCD_Type	Install/upgrade year for determining NESHAP impact
613	NEI11172	Georgia Pacific Monticello LLC	Monticello	MS	Kraft, Secondary	No	613.009	Lime Kiln	SCBR	1968
613	NEI11172	Georgia Pacific Monticello LLC	Monticello	MS	Kraft, Secondary	No	613.UT-7	BLO		1991
613	NEI11172	Georgia Pacific Monticello LLC	Monticello	MS	Kraft, Secondary	No	613.UT-8	BLO		1991
615	NEI40554	Georgia-Pacific Consumer Products, LP	Clatskanie	OR	Kraft	No	615.21	Lime Kiln	SCBR	1966
615	NEI40554	Georgia-Pacific Consumer Products, LP	Clatskanie	OR	Kraft	No	615.24	NDCE	DBESP	2005
615	NEI40554	Georgia-Pacific Consumer Products, LP	Clatskanie	OR	Kraft	No	615.25	SDT (Kraft)	SCBR	2005
617	NEI42695	Domtar A.W. LLC	Nekoosa	WI	Kraft	No	617.B14	NDCE	DBESP	1991
617	NEI42695	Domtar A.W. LLC	Nekoosa	WI	Kraft	No	617.P21	SDT (Kraft)	PBSCBR	1991
617	NEI42695	Domtar A.W. LLC	Nekoosa	WI	Kraft	No	617.P22	Lime Kiln	ESP	1995
161	NEI7621	International Paper – Franklin, VA	Franklin	VA	Kraft	No	161.8	NDCE	DBESP-WPR	1977
161	NEI7621	International Paper – Franklin, VA	Franklin	VA	Kraft	No	161.11	SDT (Kraft)	SCBR	1977
161	NEI7621	International Paper – Franklin, VA	Franklin	VA	Kraft	No	161.12	Lime Kiln	SCBR	1977
700	NEI42351	Gores Group, LLC	Cosmopolis	WA	Sulfite-Mg	No	700.RB1	Sulfite Recovery: Sulfite Combustion Unit	SCBR	1957
700	NEI42351	Gores Group, LLC	Cosmopolis	WA	Sulfite-Mg	No	700.RB2	Sulfite Recovery: Sulfite Combustion Unit	SCBR	1957
700	NEI42351	Gores Group, LLC	Cosmopolis	WA	Sulfite-Mg	No	700.RB3	Sulfite Recovery: Sulfite Combustion Unit	SCBR	1966
106	NEI41599	Domtar Paper Company, LLC	Kingsport	TN	Soda	No	106.RF	NDCE (Soda)	WBESP	2002
106	NEI41599	Domtar Paper Company, LLC	Kingsport	TN	Soda	No	106.SDT	SDT (Soda)	SCBR/INC_RF	2002
106	NEI41599	Domtar Paper Company, LLC	Kingsport	TN	Soda	No	106.LK	Lime Kiln (Soda)	ESP	2002
141	NEI46750	PACKAGING CORPORATION OF AMERICA-Tomahawk	Tomahawk	WI	SemiChem	No	141.B25	Semichem Recovery: Semichemical Combustion Unit	ESP	1990
141	NEI46750	PACKAGING CORPORATION OF AMERICA-Tomahawk	Tomahawk	WI	SemiChem	No	141.P32	SDT (Semichem)	SCBR	1990
187	NEI42211	GP Big Island, LLC	Big Island	VA	Secondary, Semichem	No	187.24	Semichem Recovery: Semichemical Combustion Unit	ESP	2009
187	NEI42211	GP Big Island, LLC	Big Island	VA	Secondary, Semichem	No	187.63	SDT (Semichem)	SCBR	2009
193	NEI39968	Finch Paper LLC	Glens Falls	NY	Sulfite-NH3	Yes	193.320000-00312	Sulfite Recovery: Sulfite Combustion Unit	OTH	1987
193	NEI39968	Finch Paper LLC	Glens Falls	NY	Sulfite-NH3	Yes	193.320000-00309	Sulfite Recovery: Sulfite Combustion Unit	OTH	1969
193	NEI39968	Finch Paper LLC	Glens Falls	NY	Sulfite-NH3	Yes	193.320000-00310	Sulfite Recovery: Sulfite Combustion Unit	OTH	1969
193	NEI39968	Finch Paper LLC	Glens Falls	NY	Sulfite-NH3	Yes	193.320000-00311	Sulfite Recovery: Sulfite Combustion Unit	OTH	1977
193	NEI39968	Finch Paper LLC	Glens Falls	NY	Sulfite-NH3	Yes	193.400000-00401	Sulfite Pulping (NH3) [NonMM]	OTH	

RTI Code	Final NEISiteID	Operator (2015)	City	St	Pulp Processes	Small_business	RTI&EUID	EmissionProcessGroup	RTI_APCD_Type	Install/upgrade year for determining NESHAP impact
241	NEI26382	Rayonier Fernandina Mill	Fernandina Beach	FL	Sulfite-NH3	No	241.MSHA	Sulfite Pulping (NH3) [NonMM]	PBSCBR/COND	
241	NEI26382	Rayonier Fernandina Mill	Fernandina Beach	FL	Sulfite-NH3	No	241.RF06	Sulfite Recovery: Sulfite Combustion Unit	SCBR	1990
244	NEI43472	Sonoco Products Company	Hartsville	SC	SemiChem	No	244.R7330	Semichem Recovery: Semichemical Combustion Unit	TO/BH	1971
244	NEI43472	Sonoco Products Company	Hartsville	SC	SemiChem	No	244.DT	SDT (Semichem)	INC_RF	1971
245	NEI18347	WestRock - Stevenson Mill	Stevenson	AL	Secondary, Semichem	No	245.SB	NSSC Pulping [NonMM]	INC_RF	
245	NEI18347	WestRock - Stevenson Mill	Stevenson	AL	Secondary, Semichem	No	245. X014	NSSC Recovery: Semichemical Combustion Unit	DBESP/SCBR/ABSORBER	2001
245	NEI18347	WestRock - Stevenson Mill	Stevenson	AL	Secondary, Semichem	No	245.DT	SDT (Semichem)	INC_RF	1997
247	NEI33945	Packaging Corporation of America	Filer City	MI	Secondary, Semichem	No	247.CPLND	Semichem Recovery: Semichemical Combustion Unit	SCBR/WESP/RTO	1990
247	NEI33945	Packaging Corporation of America	Filer City	MI	Secondary, Semichem	No	247.DISTANK	SDT (Semichem)	SCBR	1990
304	NEIVA00022	Greif Packaging LLC	Riverville	VA	Secondary, Semichem	No	304.CR05	Semichem Recovery: Semichemical Combustion Unit	ESP	1975
304	NEIVA00022	Greif Packaging LLC	Riverville	VA	Secondary, Semichem	No	304.CR06	SDT (Semichem)	None	1975

RTI Code	Final NEISiteID	Effective age for determining impact (2016 - yr)	PM permit limit (subpart MM)	Gaseous organic HAP permit limit (subpart MM)	Operating Status Note	Projection	Testing frequency		Testing costs	
							PM	THC	PM	THC
100	NEI40686	23	0.027 gr/dscf				Once		Yes	NA
100	NEI40686	23	0.2 lb/ton BLS				Once		Yes	NA
100	NEI40686	23	0.016 gr/dscf				Once		Yes	NA
102	NEI42341A	31	0.03 gr/dscf				Quarterly		No	NA
102	NEI42341A	14	0.027 gr/dscf (1-hour) and 0.02 gr/dscf (annual)				Quarterly	Once	No	NA
102	NEI42341A	14	0.12 lb/ton BLS				Quarterly		No	NA
103	NEI9201	16	0.044 gr/dscf				5 years		No	NA
103	NEI9201	29	0.13 gr/dscf				5 years		No	NA
103	NEI9201	16	0.2 lb/ton BLS (each)						Yes	NA
104	NEI11251	10	0.015 gr/dscf	0.025 lb/ton BLS as methanol			Once		Yes	Yes
104	NEI11251	10	0.015 gr/dscf						Yes	NA
104	NEI11251	11	0.064 gr/dscf				Once		Yes	NA
105	NEI45182	52			Not in operation				NA	NA
105	NEI45182	52	0.044 gr/dscf		NA: Not in operation				Yes	NA
105	NEI45182				Not in operation					
105	NEI45182				Not in operation					
105	NEI45182	52	0.2 lb/ton BLS		Not in operation				Yes	NA
105	NEI45182	9	0.044 gr/dscf						Yes	NA
105	NEI45182	9	0.2 lb/ton BLS						Yes	NA
105	NEI45182	61	0.064 gr/dscf		NA: newer kiln constructed in 1964 is used; older kiln is backup				Yes	NA
107	NEI47074	20	0.021 gr/dscf						Yes	NA
107	NEI47074	20	0.199 lb/ton BLS						Yes	NA
107	NEI47074	20	0.064 gr/dscf						Yes	NA
108	NEI33025	42	0.064 gr/dscf				Once		Yes	NA
108	NEI33025	7	0.015 gr/dscf	0.025 lb/ton BLS as methanol			Annually		No	Yes
108	NEI33025	7	0.12 lb/ton BLS						Yes	NA
109	NEI32869A	19	0.064 gr/dscf						Yes	NA
109	NEI32869A	31	0.025 gr/dscf						Yes	NA
109	NEI32869A	19	0.044 gr/dscf						Yes	NA
109	NEI32869A	31	0.12 lb/ton BLS						Yes	NA
109	NEI32869A	19	0.2 lb/ton BLS						Yes	NA
111	NEI45206	7	0.2 lb/ton BLS				Annually		No	NA
111	NEI45206	20	0.064 gr/dscf (NG), 0.13 gr/dscf (fuel oil)				5 years		No	NA
111	NEI45206	7	0.044 gr/dscf				Annually		No	NA
112	NEI34064	27	0.023 gr/dscf						Yes	NA
112	NEI34064	27	0.12 lb/ton BLS						Yes	NA
112	NEI34064	26	0.033 gr/dscf						Yes	NA
114	NEI26506	22	0.021 gr/dscf and 0.0298 gr/dscf				Determined by % of limit	Once	Yes	NA
114	NEI26506	22	0.2 lb/ton BLS				Determined by % of		Yes	NA
114	NEI26506	13	0.01 gr/dscf				Determined by % of	Once	Yes	NA
115	NEI26476	26	0.064 gr/dscf				Annually		No	NA

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							PM	THC	PM	THC
115	NEI26476	16	0.044 gr/dscf				Annually		No	NA
115	NEI26476	16	0.2 lb/ton BLS				Annually		No	NA
116	NEI8619	48	0.064 gr/dscf				Annually		No	NA
116	NEI8619	34	0.044 gr/dscf				Annually		No	NA
116	NEI8619	34	0.2 lb/ton BLS				Annually		No	NA
117	NEI42689	21	0.027 gr/dscf and 0.034 gr/dscf				2 years		No	NA
117	NEI42689	21	0.18 lb/ton BLS				2 years		No	NA
117	NEI42689	56	0.064 gr/dscf				Once		Yes	NA
119	NEI46814	52	0.2 lb/ton BLS						Yes	NA
119	NEI46814	53	0.24 gr/dscf						Yes	NA
119	NEI46814	52	0.02 gr/dscf						Yes	NA
119	NEI46814	27	0.029 gr/dscf (annual)						Yes	NA
119	NEI46814	27	0.2 lb/ton BLS						Yes	NA
119	NEI46814	52							NA	NA
119	NEI46814	52							NA	NA
120	NEI26495	28	0.021 gr/dscf and 0.0238 gr/dscf						Yes	NA
120	NEI26495	37	0.067 gr/dscf (NG), 0.106 gr/dscf (fuel oil)						Yes	NA
120	NEI26495	40	0.067 gr/dscf (NG), 0.106 gr/dscf (fuel oil)						Yes	NA
120	NEI26495	27	0.14 lb/ton BLS						Yes	NA
121	NEI12492	49	0.2 lb/ton BLS						Yes	NA
121	NEI12492	49	0.2 lb/ton BLS						Yes	NA
121	NEI12492	49	0.064 gr/dscf						Yes	NA
121	NEI12492	49	0.044 gr/dscf						Yes	NA
121	NEI12492	49	0.044 gr/dscf						Yes	NA
121	NEI12492									
121	NEI12492									
121	NEI12492	49							NA	NA
124	NEI8278	45	0.044 gr/dscf						Yes	NA
124	NEI8278	9	0.064 gr/dscf						Yes	NA
124	NEI8278	44	0.044 gr/dscf						Yes	NA
124	NEI8278	44	0.2 lb/ton BLS						Yes	NA
124	NEI8278	45	0.2 lb/ton BLS						Yes	NA
124	NEI8278	44							NA	NA
126	NEI42317	44	0.064 gr/dscf				Once per permit period	Once	No	NA
126	NEI42317	21	0.044 gr/dscf				Once per permit		No	NA
126	NEI42317	21	0.2 lb/ton BLS				Once per permit		No	NA
127	NEI7933	53	0.064 gr/dscf						Yes	NA
127	NEI7933	43	0.064 gr/dscf						Yes	NA

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							PM	THC	PM	THC
127	NEI7933	25	0.044 gr/dscf						Yes	NA
127	NEI7933	25	0.2 lb/ton BLS						Yes	NA
130	NEI18338	59	0.044 gr/dscf			replace 2 small DCEs w/ single larger NDCE			Yes	NA
130	NEI18338	14	0.2 lb/ton BLS						Yes	NA
130	NEI18338	52	0.044 gr/dscf			replace 2 small DCEs w/ single larger NDCE			Yes	NA
130	NEI18338	52				remove			NA	NA
130	NEI18338	14	0.025 gr/dscf						Yes	NA
130	NEI18338	59	0.064 gr/dscf						Yes	NA
130	NEI18338	52	0.064 gr/dscf						Yes	NA
130	NEI18338	59	0.2 lb/ton BLS			replace with single SDT serving new NDCE			Yes	NA
130	NEI18338	52	0.2 lb/ton BLS			replace with single SDT serving new NDCE			Yes	NA
131	NEI42254	34	0.064 gr/dscf (NG), 0.2 gr/dscf (fuel oil)				As requested by permit authority		Yes	NA
131	NEI42254	60	0.064 gr/dscf (NG), 0.13 gr/dscf (fuel oil)				As requested by permit authority		Yes	NA
131	NEI42254	41	0.035 gr/dscf				As requested by permit authority		Yes	NA
131	NEI42254	25	0.03 gr/dscf				As requested by permit authority		Yes	NA
131	NEI42254	41							NA	NA
131	NEI42254									
131	NEI42254	41	0.2 lb/ton BLS				As requested by permit authority		Yes	NA
131	NEI42254	25	0.2 lb/ton BLS				As requested by permit authority		Yes	NA
132	NEI8261	27	0.064 gr/dscf				Annually		No	NA
132	NEI8261	46	0.044 gr/dscf				Annually		No	NA
132	NEI8261	13	0.2 lb/ton BLS				Annually		No	NA
132	NEI8261	39	0.044 gr/dscf				Annually		No	NA
132	NEI8261	39	0.2 lb/ton BLS				Annually		No	NA
133	NEI13363	14	0.044 gr/dscf						Yes	NA
133	NEI13363	15	0.3 lb/ton BLS						Yes	NA
133	NEI13363	15	0.3 lb/ton BLS						Yes	NA
133	NEI13363	56	0.13 gr/dscf						Yes	NA
133	NEI13363	43	0.13 gr/dscf						Yes	NA
135	NEI33118	6	0.038 gr/dscf				5 years	Once	No	NA
135	NEI33118	40	0.064 gr/dscf				5 years	Once	No	NA

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							PM	THC	PM	THC
135	NEI33118	6	0.2 lb/ton BLS		assume rebuilt with NDCE		Once	Once	Yes	NA
135	NEI33118	6	0.2 lb/ton BLS		assume rebuilt with NDCE		Once	Once	Yes	NA
136	NEI12368	18	0.025 gr/dscf				2 years	Once	No	NA
136	NEI12368	18	0.12 lb/ton BLS				3 years	Once	No	NA
136	NEI12368	17	0.035 gr/dscf				2 years	Once	No	NA
137	NEI26581	26	0.2 lb/ton BLS						Yes	NA
137	NEI26581	26	0.04 gr/dscf						Yes	NA
137	NEI26581	29	0.2 lb/ton BLS						Yes	NA
137	NEI26581	58	0.064 gr/dscf						Yes	NA
137	NEI26581	41	0.064 gr/dscf						Yes	NA
137	NEI26581	29	0.044 gr/dscf						Yes	NA
138	NEI18652	40	0.064 gr/dscf				Annually	Once	No	NA
138	NEI18652	25	0.0294 gr/dscf				Semiannually	Once	No	NA
138	NEI18652	25	0.2 lb/ton BLS				Annually		No	NA
139	NEI42357	47	0.044 gr/dscf (3-hour) and 0.05 gr/dscf (1-hour)						Yes	NA
139	NEI42357	47	0.2 lb/ton BLS (3-hour) and 0.3 lb/ton BLS (1-hour)						Yes	NA
139	NEI42357	41	0.064 gr/dscf						Yes	NA
140	NEI13340	48	0.064 gr/dscf						Yes	NA
140	NEI13340	48	0.044 gr/dscf						Yes	NA
140	NEI13340	48	0.2 lb/ton BLS						Yes	NA
142	NEI41552	5	0.044 gr/dscf				As requested by permit authority		Yes	NA
142	NEI41552	17	0.044 gr/dscf				As requested by	As requested by	Yes	NA
142	NEI41552	5	0.044 gr/dscf				As requested by		Yes	NA
142	NEI41552	41	0.064 gr/dscf				As requested by		Yes	NA
142	NEI41552	56	0.064 gr/dscf				As requested by		Yes	NA
142	NEI41552	17	0.2 lb/ton BLS				As requested by		Yes	NA
142	NEI41552	31	0.2 lb/ton BLS (each)				As requested by		Yes	NA
143	NEI26504	24	0.064 gr/dscf				Once		Yes	NA
143	NEI26504	7	0.015 gr/dscf	0.025 lb/ton BLS as methanol			Annually		No	NA
143	NEI26504	7	0.015 gr/dscf				Annually		No	NA
145	NEI33135	30				reduce throughput because would only serve 1 DCE			NA	NA
145	NEI33135	57	0.044 gr/dscf			replace w/ NDCE	2 years		No	NA
145	NEI33135	30	0.044 gr/dscf				2 years		No	NA
145	NEI33135	57	0.2 lb/ton BLS			replace SDT	Once		Yes	NA
145	NEI33135	30	0.2 lb/ton BLS				Once		Yes	NA

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							PM	THC	PM	THC
145	NEI706	50	0.064 gr/dscf				Once		Yes	NA
146	NEI759	20	0.2 lb/ton BLS				5 years		No	NA
146	NEI759	25	0.027 gr/dscf				Annually		No	NA
146	NEI759	25	0.15 lb/ton BLS (monthly)				5 years		No	NA
146	NEI759	20							NA	NA
146	NEI759	18	0.02 gr/dscf (3-hour), 0.015 gr/dscf (annual) and 0.018 gr/dscf (3-hour), and 0.013 gr/dscf (annual)				5 years		No	NA
146	NEI759	66	0.064 gr/dscf				5 years		No	NA
146	NEI759	20	0.044 gr/dscf				Annually		No	NA
147	NEI6450	13	0.044 gr/dscf				5 years	5 years	No	NA
147	NEI6450	13	0.2 lb/ton BLS				Once		Yes	NA
147	NEI6450	13	0.2 lb/ton BLS				Once		Yes	NA
147	NEI6450	13	0.2 lb/ton BLS				Once		Yes	NA
147	NEI6450	36	0.064 gr/dscf				5 years	5 years	No	NA
147	NEI6450	13	0.044 gr/dscf				5 years	5 years	No	NA
147	NEI6450	6	0.064 gr/dscf				5 years	5 years	No	NA
148	NEI46931	20	0.036 gr/dscf				Annually	5 years	No	NA
148	NEI46931	20	0.2 lb/ton BLS				Annually		No	NA
148	NEI46931	50	0.192 gr/dscf				Annually	5 years	No	NA
148	NEI46931	26	0.028 gr/dscf				Annually	5 years	No	NA
148	NEI46931	26	0.2 lb/ton BLS				Annually		No	NA
148	NEI46931	26	0.035 gr/dscf (NG), 0.064 gr/dscf (fuel oil)				Annually	5 years	No	NA
149	NEI40488	17	0.021 gr/dscf				5 years	5 years	No	NA
149	NEI40488	55	0.064 gr/dscf				5 years		No	NA
149	NEI40488	17	0.2 lb/ton BLS				5 years		No	NA
150	NEI6273	27	0.064 gr/dscf						Yes	NA
150	NEI6273	24	0.044 gr/dscf						Yes	NA
150	NEI6273									
150	NEI6273									
150	NEI6273	24	0.192 lb/ton BLS and 0.19 lb/ton BLS						Yes	NA
151	NEI41252	26	0.064 gr/dscf						Yes	NA

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							PM	THC	PM	THC
151	NEI41252	26	0.0125 gr/dscf						Yes	NA
151	NEI41252	33							NA	NA
151	NEI41252	32	0.027 gr/dscf						Yes	NA
151	NEI41252									
151	NEI41252	32	0.2 lb/ton BLS						Yes	NA
151	NEI41252	33	0.057 gr/dscf						Yes	NA
151	NEI41252	33	0.2 lb/ton BLS						Yes	NA
151	NEI41252	33	0.2 lb/ton BLS						Yes	NA
152	NEI11338	47	0.044 gr/dscf				As requested by permit authority		Yes	NA
152	NEI11338	47	0.2 lb/ton BLS				As requested by		Yes	NA
152	NEI11338	47							NA	NA
152	NEI11338	47	0.064 gr/dscf				As requested by		Yes	NA
153	NEI33043	28	0.064 gr/dscf						Yes	NA
153	NEI33043	18	0.044 gr/dscf	0.054 lb/ton BLS as methanol					Yes	NA
153	NEI33043	18	0.2 lb/ton BLS						Yes	NA
154	NEI46739	27	0.04 gr/dscf (NG), 0.064 gr/dscf (fuel oil)						Yes	NA
154	NEI46739	21	0.46 lb/ton BLS						Yes	NA
154	NEI46739	29	0.46 lb/ton BLS						Yes	NA
154	NEI46739	29	0.039 gr/dscf and 0.0287 gr/dscf						Yes	NA
154	NEI46739	27	0.033 gr/dscf and 0.0257 gr/dscf						Yes	NA
154	NEI46739	27	0.12 lb/ton BLS						Yes	NA
154	NEI46739	21	0.0303 gr/dscf						Yes	NA
154	NEI46739									
154	NEI46739									
154	NEI46739	21							NA	NA
155	NEI33883	44	0.064 gr/dscf				Once		Yes	NA
155	NEI33883	22	0.033 gr/dscf (1-hour)				5 years		No	NA
155	NEI33883	22	0.2 lb/ton BLS				5 years	As requested by	No	NA
156	NEI42338	24	0.03 gr/dscf						Yes	NA
156	NEI42338	24	0.03 gr/dscf						Yes	NA
156	NEI42338	15							NA	NA
156	NEI42338	34	0.035 gr/dscf (NG), 0.13 gr/dscf (fuel oil)						Yes	NA

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							PM	THC	PM	THC
156	NEI42338	51	0.044 gr/dscf (1-hour)		NA: Not in operation				Yes	NA
156	NEI42338	15	0.04 gr/dscf (1-hour)						Yes	NA
156	NEI42338	24	0.027 gr/dscf						Yes	NA
156	NEI42338	51	0.12 lb/ton BLS (1-hour)		Not in operation				Yes	NA
156	NEI42338	15	0.12 lb/ton BLS (1-hour)						Yes	NA
156	NEI42338	24	0.12 lb/ton BLS (1-hour)						Yes	NA
159	NEI8177	25	0.2 lb/ton BLS						Yes	NA
159	NEI8177	25	0.044 gr/dscf						Yes	NA
159	NEI8177	48	0.064 gr/dscf						Yes	NA
162	NEI46760	34	0.13 gr/dscf				2 years		No	NA
162	NEI46760	27	0.1 gr/dscf				4 years	4 years	No	NA
162	NEI46760	34	0.044 gr/dscf				4 years		No	NA
162	NEI46760	34	0.2 lb/ton BLS				4 years		No	NA
162	NEI46760	27	0.03 gr/dscf				4 years		No	NA
162	NEI46760	27	0.2 lb/ton BLS				4 years		No	NA
163	NEI8560									
163	NEI8560									
163	NEI8560	9							NA	NA
163	NEI8560	49	0.067 gr/dscf (NG), 0.13 gr/dscf (fuel oil)						Yes	NA
163	NEI8560	36	0.067 gr/dscf (NG), 0.13 gr/dscf (fuel oil)						Yes	NA
163	NEI8560	9	0.023 gr/dscf						Yes	NA
163	NEI8560	36	0.024 gr/dscf						Yes	NA
163	NEI8560	9	0.25 lb/ton BLS						Yes	NA
163	NEI8560	9	0.25 lb/ton BLS						Yes	NA
163	NEI8560	36	0.19 lb/ton BLS						Yes	NA
164	NEI42710	20	0.036 gr/dscf						Yes	NA
164	NEI42710	21	0.036 gr/dscf						Yes	NA
164	NEI42710	20	0.246 lb/ton BLS						Yes	NA
164	NEI42710	21	0.246 lb/ton BLS						Yes	NA
164	NEI42710	30	0.067 gr/dscf (NG), 0.13 gr/dscf (fuel oil)						Yes	NA
165	NEI41628	41	0.064 gr/dscf				Once		Yes	NA
165	NEI41628	25	0.044 gr/dscf				Once		Yes	NA
165	NEI41628	25	0.2 lb/ton BLS				Once		Yes	NA
165	NEI41628	26	0.044 gr/dscf				Once		Yes	NA
165	NEI41628	26	0.2 lb/ton BLS				Once		Yes	NA
165	NEI41628	44	0.064 gr/dscf				Once		Yes	NA
166	NEI41314									
166	NEI41314									
166	NEI41314	27							NA	NA
166	NEI41314	53	0.064 gr/dscf				2 years		No	NA
166	NEI41314	37	0.13 gr/dscf				2 years		No	NA

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							PM	THC	PM	THC
166	NEI41314	33	0.044 gr/dscf				2 years		No	NA
166	NEI41314	27	0.043 gr/dscf				2 years		No	NA
166	NEI41314	33	0.2 lb/ton BLS				4 years		No	NA
166	NEI41314	27	0.2 lb/ton BLS				4 years		No	NA
167	NEI34070	49	0.064 gr/dscf				2 years	2 years	No	NA
167	NEI34070	49	0.041 gr/dscf				2 years	2 years	No	NA
167	NEI34070	49	0.364 lb/ton BLS				2 years		No	NA
167	NEI34070	49							NA	NA
169	NEI33013	35	0.064 gr/dscf (NG), 0.13 gr/dscf (fuel oil)				Once		Yes	NA
169	NEI33013	22	0.02 gr/dscf (annual) and 0.044 gr/dscf (3-hour)				Annually		No	NA
169	NEI33013	21	0.02 gr/dscf (annual) and 0.044 gr/dscf (3-hour)				Annually		No	NA
169	NEI33013	22	0.2 lb/ton BLS				Once		Yes	NA
169	NEI33013	21	0.2 lb/ton BLS				Once		Yes	NA
171	NEI18658	26	0.044 gr/dscf	0.514 lb/ton BLS as methanol					Yes	NA
171	NEI18658	26	0.044 gr/dscf	0.546 lb/ton BLS as methanol					Yes	NA
171	NEI18658	25	0.044 gr/dscf	0.447 lb/ton BLS as methanol					Yes	NA
171	NEI18658	26	0.2 lb/ton BLS						Yes	NA
171	NEI18658	26	0.2 lb/ton BLS						Yes	NA
171	NEI18658	25	0.2 lb/ton BLS						Yes	NA
171	NEI18658	58	0.064 gr/dscf						Yes	NA
171	NEI18658	52	0.064 gr/dscf						Yes	NA
171	NEI18658	25							NA	NA
172	NEI18335	30	0.064 gr/dscf (NG), 0.13 gr/dscf (fuel oil)				Annually		No	NA
172	NEI18335	34	0.024 gr/dscf				Annually		No	NA
172	NEI18335	29	0.044 gr/dscf				Annually		No	NA
172	NEI18335	34	0.2 lb/ton BLS				Annually		No	NA
172	NEI18335	29	0.2 lb/ton BLS				Annually		No	NA
173	NEI35908	46	0.15 gr/dscf				Once per permit		No	NA
173	NEI35908	46	0.03 gr/dscf				Once per permit period		No	NA
173	NEI35908	46	0.2 lb/ton BLS				Once per permit		No	NA
174	NEI40247	18	0.064 gr/dscf (NG), 0.13 gr/dscf (fuel oil)						Yes	NA
174	NEI40247	34	0.043 gr/dscf						Yes	NA
174	NEI40247	42							NA	NA
174	NEI40247	42	0.2 lb/ton BLS						Yes	NA
174	NEI40247	34	0.2 lb/ton BLS						Yes	NA
174	NEI40247	42	0.051 gr/dscf						Yes	NA
174	NEI40247	40	0.064 gr/dscf						Yes	NA
175	NEI26514	27							NA	NA
175	NEI26514	56	0.176 gr/dscf				Annually		No	NA

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							PM	THC	PM	THC
175	NEI26514	29	0.064 gr/dscf				Annually		No	NA
175	NEI26514	27	0.055 gr/dscf				Annually		No	NA
175	NEI26514	28	0.021 gr/dscf				Annually		No	NA
175	NEI26514	27	0.585 lb/ton BLS				Annually		No	NA
175	NEI26514	28	0.2 lb/ton BLS				Annually		No	NA
176	NEI47104	19	0.2 lb/ton BLS						Yes	NA
176	NEI47104	55	0.064 gr/dscf						Yes	NA
176	NEI47104	19	0.021 gr/dscf						Yes	NA
177	NEI33887	35	0.027 gr/dscf				5 years	5 years	No	NA
177	NEI33887	35	0.2 lb/ton BLS				5 years	5 years	No	NA
177	NEI33887	35	0.064 gr/dscf				5 years	5 years	No	NA
178	NEI26309	27	0.042 gr/dscf						Yes	NA
178	NEI26309	27	0.042 gr/dscf						Yes	NA
178	NEI26309	27	0.2 lb/ton BLS						Yes	NA
178	NEI26309	27	0.2 lb/ton BLS						Yes	NA
178	NEI26309	21	0.03 gr/dscf						Yes	NA
179	NEI45474	21	0.035 gr/dscf (NG), 0.064 gr/dscf (fuel oil)						Yes	NA
179	NEI45474	24	0.021 gr/dscf						Yes	NA
179	NEI45474	24	0.12 lb/ton BLS						Yes	NA
180	NEI26471	24	0.027 gr/dscf				Annually		No	NA
180	NEI26471	24	0.12 lb/ton BLS				Annually		No	NA
180	NEI26471	20	0.064 gr/dscf (NG), 0.13 gr/dscf (fuel oil)				Annually		No	NA
180	NEI26471	20	0.064 gr/dscf (NG), 0.13 gr/dscf (fuel oil)				Annually		No	NA
181	NEI6057	52	0.064 gr/dscf						Yes	NA
181	NEI6057									
181	NEI6057									
181	NEI6057	23	0.044 gr/dscf						Yes	NA
181	NEI6057	23	0.2 lb/ton BLS						Yes	NA
181	NEI6057	40	0.064 gr/dscf						Yes	NA
181	NEI6057									
181	NEI6057									
181	NEI6057	26	0.044 gr/dscf						Yes	NA
181	NEI6057	26	0.2 lb/ton BLS						Yes	NA
182	NEI7181	23	0.027 gr/dscf				5 years	5 years	No	NA
182	NEI7181	50	0.064 gr/dscf				5 years		No	NA
182	NEI7181	23	0.2 lb/ton BLS				5 years		No	NA
183	NEI33103	29	0.028 gr/dscf						Yes	NA

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							PM	THC	PM	THC
183	NEI33103	29	0.12 lb/ton BLS						Yes	NA
183	NEI33103	42	0.13 gr/dscf						Yes	NA
184	NEI46817	16	0.044 gr/dscf						Yes	NA
184	NEI46817	15	0.044 gr/dscf						Yes	NA
184	NEI46817	16	0.064 gr/dscf						Yes	NA
184	NEI46817	16	0.064 gr/dscf						Yes	NA
184	NEI46817	16	0.2 lb/ton BLS						Yes	NA
184	NEI46817	15	0.2 lb/ton BLS						Yes	NA
184	NEI46817	15	0.2 lb/ton BLS						Yes	NA
185	NEI46599	9	0.033 gr/dscf						Yes	NA
185	NEI46599	9	0.12 lb/ton BLS						Yes	NA
185	NEI46599	14	0.067 gr/dscf (NG), 0.13 gr/dscf (fuel oil)						Yes	NA
186	NEI18334	24	0.065 gr/dscf				Annually	5 years	No	NA
186	NEI18334	24	0.024 gr/dscf				Annually	5 years	No	NA
186	NEI18334	24	0.2 lb/ton BLS				Annually		No	NA
188	NEI40600	60	0.12 gr/dscf				Semiannually		No	NA
188	NEI40600	57	0.12 gr/dscf				Semiannually		No	NA
188	NEI40600	53	0.12 gr/dscf				Semiannually		No	NA
188	NEI40600	20	0.044 gr/dscf (daily) and 0.033 gr/dscf (1-hour)				Semiannually	5 years	No	NA
188	NEI40600	20	0.23 lb/ton BLS				Semiannually		No	NA
188	NEI40600	20	0.044 gr/dscf (daily) and 0.033 gr/dscf (1-hour)				Semiannually	5 years	No	NA
188	NEI40600	20	0.26 lb/ton BLS				Semiannually		No	NA
188	NEI40600	20							NA	NA
189	NEI54342	35	0.064 gr/dscf						Yes	NA
189	NEI54342	35	0.02 gr/dscf	0.007 lb/ton BLS as methanol					Yes	NA
189	NEI54342	35	0.2 lb/ton BLS						Yes	NA

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							PM	THC	PM	THC
189	NEI54342	35	0.2 lb/ton BLS						Yes	NA
190	NEI26491	53	0.064 gr/dscf						Yes	NA
190	NEI26491	49	0.056 gr/dscf						Yes	NA
190	NEI26491	26	0.03 gr/dscf						Yes	NA
190	NEI26491	25	0.03 gr/dscf						Yes	NA
190	NEI26491	33	0.024 gr/dscf						Yes	NA
190	NEI26491	26	0.12 lb/ton BLS						Yes	NA
190	NEI26491	25	0.2 lb/ton BLS						Yes	NA
190	NEI26491	33	0.53 lb/ton BLS						Yes	NA
195	NEI46835	51	0.064 gr/dscf						Yes	NA
195	NEI46835	28	0.021 gr/dscf						Yes	NA
195	NEI46835	28	0.127 lb/ton BLS						Yes	NA
196	NEI18660	25	0.034 gr/dscf				5 years	5 years	No	NA
196	NEI18660	27	0.044 gr/dscf				5 years	5 years	No	NA
196	NEI18660									
196	NEI18660									
196	NEI18660	27	0.2 lb/ton BLS				5 years	5 years	No	NA
196	NEI18660	37	0.064 gr/dscf				Once		Yes	NA
196	NEI18660	27	0.044 gr/dscf				Once	5 years	Yes	NA
196	NEI18660	27	0.2 lb/ton BLS				Once	5 years	Yes	NA
197	NEI18657	59	0.064 gr/dscf						Yes	NA
197	NEI18657	30							NA	NA
197	NEI18657	30	0.044 gr/dscf	0.24 lb/ton BLS as methanol					Yes	NA
197	NEI18657	30	0.2 lb/ton BLS						Yes	NA
198	NEI41565	27	0.064 gr/dscf				Once		Yes	NA
198	NEI41565	22	0.027 gr/dscf				Once		Yes	NA
198	NEI41565	22	0.12 lb/ton BLS				Once		Yes	NA
199	NEI18390	19	0.044 gr/dscf				Annually	5 years	No	NA
199	NEI18390	19	0.2 lb/ton BLS				Annually		No	NA
199	NEI18390	41	0.064 gr/dscf				Annually		No	NA
200	NEI47077	22	0.03 gr/dscf				2 years		No	NA
200	NEI47077	32	0.2 lb/ton BLS				4 years		No	NA
200	NEI47077	9	0.2 lb/ton BLS				4 years		No	NA
200	NEI47077	32	0.044 gr/dscf				2 years		No	NA
200	NEI47077	9	0.025 gr/dscf				2 years		No	NA
201	NEI7559	15	0.044 gr/dscf				Annually	Once	No	NA
201	NEI7559	47	0.064 gr/dscf				Once	Once	Yes	NA
201	NEI7559	15	0.2 lb/ton BLS				Once	Once	Yes	NA

RTI Code	Final NEISiteID	Effective age for determining impact (2016 - yr)	PM permit limit (subpart MM)	Gaseous organic HAP permit limit (subpart MM)	Operating Status Note	Projection	Testing frequency		Testing costs	
							PM	THC	PM	THC
202	NEI12411	26	0.066 gr/dscf				Annually	Annually	No	NA
202	NEI12411	15	0.044 gr/dscf				2 years	2 years	No	NA
202	NEI12411	15	0.12 lb/ton BLS				Annually	Annually	No	NA
203	NEI42410	16	0.2 lb/ton BLS						Yes	NA
203	NEI42410	6	0.2 lb/ton BLS						Yes	NA
203	NEI42410	37	0.064 gr/dscf						Yes	NA
203	NEI42410	16	0.044 gr/dscf						Yes	NA
203	NEI42410	6	0.027 gr/dscf (1-hour) and 0.021 gr/dscf (rolling annual)						Yes	NA
205	NEI8601	52	0.064 gr/dscf				Annually		No	NA
205	NEI8601	43	0.044 gr/dscf				Annually		No	NA
205	NEI8601	43	0.2 lb/ton BLS				Annually		No	NA
205	NEI8601	43							NA	NA
206	NEI40282	25	0.032 gr/dscf				Annually		No	NA
206	NEI40282	24	0.032 gr/dscf				Annually		No	NA
206	NEI40282	24							NA	NA
206	NEI40282	25	0.2 lb/ton BLS						Yes	NA
206	NEI40282	24	0.2 lb/ton BLS						Yes	NA
206	NEI40282	69	0.1 gr/dscf			replace LK	Annually		No	NA
206	NEI40282	62	0.1 gr/dscf				Annually		No	NA
207	NEI7104	33	0.044 gr/dscf						Yes	NA
207	NEI7104	50	0.066 gr/dscf						Yes	NA
207	NEI7104	33	0.2 lb/ton BLS						Yes	NA
208228535	NEI18373	38	0.025 gr/dscf				Annually	5 years	No	NA
208228535	NEI18373	38	0.2 lb/ton BLS				Annually		No	NA
208228535	NEI18373	38	0.064 gr/dscf				Annually	5 years	No	NA
208228535	NEI18373	25	0.025 gr/dscf				Annually	5 years	No	NA
208228535	NEI18373	25	0.2 lb/ton BLS				Annually		No	NA
208228535	NEI18373	25	0.064 gr/dscf				Annually	5 years	No	NA
226	NEI33023	45	0.064 gr/dscf				Once		Yes	NA
226	NEI33023	44	0.064 gr/dscf				Once		Yes	NA
226	NEI33023	20	0.044 gr/dscf				Annually		No	NA
226	NEI33023	24	0.044 gr/dscf				Annually*	Once	No	NA
226	NEI33023	20	0.2 lb/ton BLS				Once		Yes	NA
226	NEI33023	20	0.2 lb/ton BLS				Once		Yes	NA
226	NEI33023	24	0.2 lb/ton BLS				Once		Yes	NA
240	NEI26526	27	0.064 gr/dscf				Annually		No	NA
240	NEI26526	43	0.044 gr/dscf				Annually		No	NA
240	NEI26526	43	0.2 lb/ton BLS				Annually		No	NA
240	NEI26526	34	0.044 gr/dscf				Annually		No	NA
240	NEI26526	34	0.2 lb/ton BLS				Annually		No	NA
240	NEI26526	34	0.2 lb/ton BLS				Annually		No	NA
242	NEI34066	32	0.044 gr/dscf				2 years		No	NA
242	NEI34066	32	0.2 lb/ton BLS				2 years		No	NA
242	NEI34066	32	0.064 gr/dscf				2 years		No	NA
243	NEI8196	30	0.01 gr/dscf				2 years		No	NA
243	NEI8196	20	0.021 gr/dscf				2 years		No	NA
243	NEI8196	20	0.2 lb/ton BLS				2 years		No	NA
243	NEI8196	26	0.021 gr/dscf				2 years		No	NA

RTI Code	Final NEISiteID	Effective age for determining impact (2016 - yr)	PM permit limit (subpart MM)	Gaseous organic HAP permit limit (subpart MM)	Operating Status Note	Projection	Testing frequency		Testing costs	
							PM	THC	PM	THC
243	NEI8196	26	0.2 lb/ton BLS				2 years		No	NA
340	NEI46852	41	0.044 gr/dscf	0.058 lb/ton BLS as methanol			Once	Once per 5-year permit period	Yes	NA
340	NEI46852	41	0.2 lb/ton BLS				Once per permit		No	NA
340	NEI46852	41	0.064 gr/dscf				Once		Yes	NA
525	NEI8265	40	0.064 gr/dscf						Yes	NA
525	NEI8265	9	0.03 gr/dscf						Yes	NA
525	NEI8265	9	0.12 lb/ton BLS						Yes	NA
525	NEI8265	9	0.12 lb/ton BLS						Yes	NA
531	NEI8186	26	0.064 gr/dscf				Annually		No	NA
531	NEI8186	21	0.15 lb/ton BLS				Annually		No	NA
531	NEI8186	21	0.044 gr/dscf				Annually		No	NA
606	NEI47091	30	0.0451 gr/dscf				Annually		No	NA
606	NEI47091	6	0.03 gr/dscf		NA: Low-odor conversion in 2010		Annually		No	NA
606	NEI47091	2	0.03 gr/dscf		NA: RF conversion commenced in 2010/completed in 2014		Annually		No	NA
606	NEI47091	41	0.044 gr/dscf				Annually		No	NA
606	NEI47091	6	0.2 lb/ton BLS		NA: Low-odor conversion in 2010		Annually		No	NA
606	NEI47091	2	0.2 lb/ton BLS		NA: RF conversion commended in 2014/completed in 2014		Annually		No	NA
606	NEI47091	41	0.2 lb/ton BLS				Annually		No	NA
610	NEI6261	41	0.13 lb/ton BLS				5 years		No	NA
610	NEI6261	29	0.035 gr/dscf				5 years		No	NA
610	NEI6261	41	0.035 gr/dscf				5 years		No	NA
610	NEI6261	51	0.13 gr/dscf				5 years		No	NA
610	NEI6261	41	0.064 gr/dscf				5 years		No	NA
610	NEI6261	29	0.31 lb/ton BLS				5 years		No	NA
613	NEI11172									
613	NEI11172									
613	NEI11172	25	0.044 gr/dscf				2 years		No	NA
613	NEI11172									
613	NEI11172									
613	NEI11172	25	0.044 gr/dscf				2 years		No	NA
613	NEI11172	25	0.2 lb/ton BLS				2 years		No	NA
613	NEI11172	25	0.2 lb/ton BLS				2 years		No	NA
613	NEI11172	25	0.2 lb/ton BLS				2 years		No	NA
613	NEI11172	25	0.2 lb/ton BLS				2 years		No	NA

RTI Code	Final NEISiteID	Effective age for determining impact (2016 - yr)	PM permit limit (subpart MM)	Gaseous organic HAP permit limit (subpart MM)	Operating Status Note	Projection	Testing frequency		Testing costs	
							PM	THC	PM	THC
613	NEI11172	48	0.064 gr/dscf				2 years		No	NA
613	NEI11172	25							NA	NA
613	NEI11172	25							NA	NA
615	NEI40554	50	0.2 gr/dscf (24-hour)						Yes	NA
615	NEI40554	11	0.044 gr/dscf (daily as determined by opacity correlation)						Yes	NA
615	NEI40554	11	0.2 lb/ton BLS						Yes	NA
617	NEI42695	25	0.03 gr/dscf						Yes	NA
617	NEI42695	25	0.13 lb/ton BLS						Yes	NA
617	NEI42695	21	0.05 gr/dscf						Yes	NA
161	NEI7621	39	0.075 gr/dscf						Yes	NA
161	NEI7621	39	0.46875 lb/ton BLS						Yes	NA
161	NEI7621	39	0.021 gr/dscf						Yes	NA
700	NEI42351	59	0.1 gr/dscf (all 3 units)						Yes	NA
700	NEI42351	59	0.1 gr/dscf (all 3 units)						Yes	NA
700	NEI42351	50	0.1 gr/dscf (all 3 units)						Yes	NA
106	NEI41599	14	0.015 gr/dscf	0.025 lb/ton BLS as methanol			As requested by permit authority		Yes	Yes
106	NEI41599	14	0.015 gr/dscf				As requested by		Yes	NA
106	NEI41599	14	0.01 gr/dscf				As requested by		Yes	NA
141	NEI46750	26		2.97 lb/ton BLS as THC					No	Yes
141	NEI46750	26							No	NA
187	NEI42211	7		2.97 lb/ton BLS as THC					No	Yes
187	NEI42211	7							No	NA
193	NEI39968	29	0.05 gr/dscf (all 4 units)						Yes	NA
193	NEI39968	47	0.05 gr/dscf (all 4 units)						Yes	NA
193	NEI39968	47	0.05 gr/dscf (all 4 units)						Yes	NA
193	NEI39968	39	0.05 gr/dscf (all 4 units)						Yes	NA
193	NEI39968								NA	NA

RTI Code	Final NEISiteID	Effective age for determining impact (2016 - yr)	PM permit limit (subpart MM)	Gaseous organic HAP permit limit (subpart MM)	Operating Status Note	Projection	Testing frequency		Testing costs	
							PM	THC	PM	THC
241	NEI26382								NA	NA
241	NEI26382	26	0.04 gr/dscf						Yes	NA
244	NEI43472	45		2.97 lb/ton BLS as THC			2 years	Once	No	Yes
244	NEI43472	45							No	NA
245	NEI18347								NA	NA
245	NEI18347	15		2.97 lb/ton BLS as THC			Annually	5 years	No	No
245	NEI18347	19							No	NA
247	NEI33945	26		2.97 lb/ton BLS as THC			As requested by permit authority	As requested by permit authority	No	Yes
247	NEI33945	26							No	NA
304	NEIVA00022	41		2.97 lb/ton BLS as THC					No	Yes
304	NEIVA00022	41							No	NA

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100	NEI40686	10000	2180	2440	9940	80	10870	88	2000	16
100	NEI40686	10000	2180	2440						
100	NEI40686	10000	2180	2440			10870	88	2000	16
102	NEI42341A				9940	80	10870	88	2000	16
102	NEI42341A						10870	88	2000	16
102	NEI42341A									
103	NEI9201				9940	80	10870	88	2000	16
103	NEI9201									
103	NEI9201	10000	2180	2440						
104	NEI11251	24000	5240	5850	9940	80	10870	88	2000	16
104	NEI11251	10000	2180	2440						
104	NEI11251	10000	2180	2440			10870	88	2000	16
105	NEI45182									
105	NEI45182	0	0	0			0	0	0	0
105	NEI45182									
105	NEI45182									
105	NEI45182	0	0	0						
105	NEI45182	10000	2180	2440	9940	80	10870	88	2000	16
105	NEI45182	10000	2180	2440						
105	NEI45182	10000	2180	2440			10870	88	2000	16
107	NEI47074	10000	2180	2440	9940	80	10870	88	2000	16
107	NEI47074	10000	2180	2440						
107	NEI47074	10000	2180	2440			10870	88	2000	16
108	NEI33025	10000	2180	2440						
108	NEI33025	14000	3060	3410	9940	80	10870	88	2000	16
108	NEI33025	10000	2180	2440						
109	NEI32869A	10000	2180	2440	9940	80	10870	88	2000	16
109	NEI32869A	10000	2180	2440			10870	88	2000	16
109	NEI32869A	10000	2180	2440			10870	88	2000	16
109	NEI32869A	10000	2180	2440						
109	NEI32869A	10000	2180	2440						
111	NEI45206									
111	NEI45206				9940	80	10870	88	2000	16
111	NEI45206						10870	88	2000	16
112	NEI34064	10000	2180	2440	9940	80	10870	88	2000	16
112	NEI34064	10000	2180	2440						
112	NEI34064	10000	2180	2440			10870	88	2000	16
114	NEI26506	10000	2180	2440	9940	80	10870	88	2000	16
114	NEI26506	10000	2180	2440						
114	NEI26506	10000	2180	2440			10870	88	2000	16
115	NEI26476				9940	80	10870	88	2000	16

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115	NEI26476						10870	88	2000	16
115	NEI26476									
116	NEI8619									
116	NEI8619				9940	80	10870	88	2000	16
116	NEI8619									
117	NEI42689				9940	80	10870	88	2000	16
117	NEI42689									
117	NEI42689	10000	2180	2440						
119	NEI46814	10000	2180	2440						
119	NEI46814	10000	2180	2440						
119	NEI46814	10000	2180	2440	9940	80	10870	88	2000	16
119	NEI46814	10000	2180	2440			10870	88	2000	16
119	NEI46814	10000	2180	2440						
119	NEI46814									
119	NEI46814									
120	NEI26495	10000	2180	2440	9940	80	10870	88	2000	16
120	NEI26495	10000	2180	2440						
120	NEI26495	10000	2180	2440						
120	NEI26495	10000	2180	2440						
121	NEI12492	10000	2180	2440	9940	80				
121	NEI12492	10000	2180	2440						
121	NEI12492	10000	2180	2440						
121	NEI12492	10000	2180	2440			10870	88	2000	16
121	NEI12492	10000	2180	2440			10870	88	2000	16
121	NEI12492									
121	NEI12492									
121	NEI12492									
121	NEI12492									
124	NEI8278	10000	2180	2440	9940	80	10870	88	2000	16
124	NEI8278	10000	2180	2440						
124	NEI8278	10000	2180	2440			10870	88	2000	16
124	NEI8278	10000	2180	2440						
124	NEI8278	10000	2180	2440						
124	NEI8278	10000	2180	2440						
124	NEI8278									
126	NEI42317				9940	80	10870	88	2000	16
126	NEI42317						10870	88	2000	16
126	NEI42317									
127	NEI7933	10000	2180	2440	9940	80	10870	88	2000	16
127	NEI7933	10000	2180	2440			10870	88	2000	16

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127	NEI7933	10000	2180	2440			10870	88	2000	16
127	NEI7933	10000	2180	2440						
130	NEI18338	24000	5240	5850	9940	80	10870	88	2000	16
130	NEI18338	10000	2180	2440						
130	NEI18338									
130	NEI18338									
130	NEI18338	10000	2180	2440			10870	88	2000	16
130	NEI18338	10000	2180	2440						
130	NEI18338	10000	2180	2440						
130	NEI18338	10000	2180	2440						
130	NEI18338									
131	NEI42254	10000	2180	2440						
131	NEI42254	10000	2180	2440						
131	NEI42254	10000	2180	2440	9940	80	10870	88	2000	16
131	NEI42254	10000	2180	2440			10870	88	2000	16
131	NEI42254									
131	NEI42254									
131	NEI42254	10000	2180	2440						
131	NEI42254	10000	2180	2440						
132	NEI8261				9940	80	10870	88	2000	16
132	NEI8261						10870	88	2000	16
132	NEI8261									
132	NEI8261						10870	88	2000	16
132	NEI8261									
133	NEI13363	10000	2180	2440	9940	80	10870	88	2000	16
133	NEI13363	10000	2180	2440						
133	NEI13363	10000	2180	2440						
133	NEI13363	10000	2180	2440						
133	NEI13363	10000	2180	2440						
135	NEI33118				9940	80	10870	88	2000	16
135	NEI33118									

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135	NEI33118	10000	2180	2440						
135	NEI33118	10000	2180	2440						
136	NEI12368				9940	80	10870	88	2000	16
136	NEI12368									
136	NEI12368						10870	88	2000	16
137	NEI26581	10000	2180	2440						
137	NEI26581	10000	2180	2440	9940	80	10870	88	2000	16
137	NEI26581	10000	2180	2440						
137	NEI26581	10000	2180	2440			10870	88	2000	16
137	NEI26581	10000	2180	2440			10870	88	2000	16
137	NEI26581	10000	2180	2440			10870	88	2000	16
137	NEI26581	10000	2180	2440			10870	88	2000	16
138	NEI18652									
138	NEI18652				9940	80	10870	88	2000	16
138	NEI18652									
139	NEI42357	10000	2180	2440	9940	80	10870	88	2000	16
139	NEI42357	10000	2180	2440						
139	NEI42357	10000	2180	2440						
140	NEI13340	10000	2180	2440						
140	NEI13340	10000	2180	2440	9940	80	10870	88	2000	16
140	NEI13340	10000	2180	2440						
142	NEI41552	10000	2180	2440	9940	80	10870	88	2000	16
142	NEI41552	10000	2180	2440			10870	88	2000	16
142	NEI41552	10000	2180	2440			10870	88	2000	16
142	NEI41552	10000	2180	2440						
142	NEI41552	10000	2180	2440						
142	NEI41552	10000	2180	2440						
142	NEI41552	10000	2180	2440						
143	NEI26504	10000	2180	2440	9940	80	10870	88	2000	16
143	NEI26504	14000	3060	3410			10870	88	2000	16
143	NEI26504									
145	NEI33135									
145	NEI33135	14000	3060	3410			10870	88	2000	16
145	NEI33135				9940	80	10870	88	2000	16
145	NEI33135	10000	2180	2440						
145	NEI33135	10000	2180	2440						

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145	NEI706	10000	2180	2440						
146	NEI759									
146	NEI759				9940	80	10870	88	2000	16
146	NEI759									
146	NEI759									
146	NEI759						10870	88	2000	16
146	NEI759									
146	NEI759						10870	88	2000	16
147	NEI6450				9940	80	10870	88	2000	16
147	NEI6450	10000	2180	2440						
147	NEI6450	10000	2180	2440						
147	NEI6450	10000	2180	2440						
147	NEI6450									
147	NEI6450						10870	88	2000	16
147	NEI6450						10870	88	2000	16
148	NEI46931				9940	80	10870	88	2000	16
148	NEI46931									
148	NEI46931									
148	NEI46931						10870	88	2000	16
148	NEI46931									
148	NEI46931						10870	88	2000	16
149	NEI40488				9940	80	10870	88	2000	16
149	NEI40488									
149	NEI40488									
150	NEI6273	10000	2180	2440						
150	NEI6273	10000	2180	2440	9940	80	10870	88	2000	16
150	NEI6273									
150	NEI6273									
150	NEI6273	10000	2180	2440						
151	NEI41252	10000	2180	2440						

RTI Code	Final NEISiteID	Additional 5-yr periodic testing costs, capital, \$2016	Additional 5-yr periodic testing costs, annualized (3% interest), \$2016/yr	Additional 5-yr periodic testing costs, annualized (7% interest), \$2016/yr	DAS adjustments incremental R&R costs, initial, \$2016	DAS adjustments incremental R&R labor hours, initial, hr	ESP Opt A incremental R&R costs, annual, \$2016	ESP Opt A incremental R&R labor hours, annual, hr/yr	ESP Opt B incremental recordkeeping costs, annual, \$2016	ESP Opt B incremental recordkeeping labor hours, annual, hr/yr
151	NEI41252	10000	2180	2440	9940	80	10870	88	2000	16
151	NEI41252									
151	NEI41252	10000	2180	2440			10870	88	2000	16
151	NEI41252									
151	NEI41252									
151	NEI41252	10000	2180	2440						
151	NEI41252	10000	2180	2440			10870	88	2000	16
151	NEI41252	10000	2180	2440						
151	NEI41252	10000	2180	2440						
152	NEI11338	10000	2180	2440	9940	80	10870	88	2000	16
152	NEI11338	10000	2180	2440						
152	NEI11338									
152	NEI11338	10000	2180	2440						
153	NEI33043	10000	2180	2440	9940	80				
153	NEI33043	10000	2180	2440						
153	NEI33043	10000	2180	2440						
154	NEI46739	10000	2180	2440	9940	80	10870	88	2000	16
154	NEI46739	10000	2180	2440						
154	NEI46739	10000	2180	2440						
154	NEI46739	10000	2180	2440			10870	88	2000	16
154	NEI46739	10000	2180	2440			10870	88	2000	16
154	NEI46739	10000	2180	2440						
154	NEI46739	10000	2180	2440			10870	88	2000	16
154	NEI46739									
154	NEI46739									
154	NEI46739									
155	NEI33883	10000	2180	2440						
155	NEI33883				9940	80	10870	88	2000	16
155	NEI33883									
156	NEI42338	10000	2180	2440	9940	80				
156	NEI42338	10000	2180	2440						
156	NEI42338									
156	NEI42338	10000	2180	2440			10870	88	2000	16

RTI Code	Final NEISiteID	Additional 5-yr periodic testing costs, capital, \$2016	Additional 5-yr periodic testing costs, annualized (3% interest), \$2016/yr	Additional 5-yr periodic testing costs, annualized (7% interest), \$2016/yr	DAS adjustments incremental R&R costs, initial, \$2016	DAS adjustments incremental R&R labor hours, initial, hr	ESP Opt A incremental R&R costs, annual, \$2016	ESP Opt A incremental R&R labor hours, annual, hr/yr	ESP Opt B incremental recordkeeping costs, annual, \$2016	ESP Opt B incremental recordkeeping labor hours, annual, hr/yr
156	NEI42338	0	0	0			0	0	0	0
156	NEI42338	10000	2180	2440			10870	88	2000	16
156	NEI42338	10000	2180	2440			10870	88	2000	16
156	NEI42338	0	0	0						
156	NEI42338	10000	2180	2440						
156	NEI42338	10000	2180	2440						
159	NEI8177	10000	2180	2440	9940	80				
159	NEI8177	10000	2180	2440						
159	NEI8177	10000	2180	2440						
162	NEI46760									
162	NEI46760				9940	80	10870	88	2000	16
162	NEI46760						10870	88	2000	16
162	NEI46760									
162	NEI46760						10870	88	2000	16
162	NEI46760									
163	NEI8560									
163	NEI8560									
163	NEI8560									
163	NEI8560	10000	2180	2440	9940	80				
163	NEI8560	10000	2180	2440						
163	NEI8560	10000	2180	2440			10870	88	2000	16
163	NEI8560	10000	2180	2440			10870	88	2000	16
163	NEI8560	10000	2180	2440						
163	NEI8560	10000	2180	2440						
163	NEI8560	10000	2180	2440						
163	NEI8560	10000	2180	2440						
164	NEI42710	10000	2180	2440	9940	80	10870	88	2000	16
164	NEI42710	10000	2180	2440			10870	88	2000	16
164	NEI42710	10000	2180	2440						
164	NEI42710	10000	2180	2440						
164	NEI42710	10000	2180	2440						
165	NEI41628	10000	2180	2440						
165	NEI41628	10000	2180	2440	9940	80	10870	88	2000	16
165	NEI41628	10000	2180	2440						
165	NEI41628	10000	2180	2440			10870	88	2000	16
165	NEI41628	10000	2180	2440						
165	NEI41628	10000	2180	2440						
166	NEI41314									
166	NEI41314									
166	NEI41314									
166	NEI41314									
166	NEI41314									

RTI Code	Final NEISiteID	Additional 5-yr periodic testing costs, capital, \$2016	Additional 5-yr periodic testing costs, annualized (3% interest), \$2016/yr	Additional 5-yr periodic testing costs, annualized (7% interest), \$2016/yr	DAS adjustments incremental R&R costs, initial, \$2016	DAS adjustments incremental R&R labor hours, initial, hr	ESP Opt A incremental R&R costs, annual, \$2016	ESP Opt A incremental R&R labor hours, annual, hr/yr	ESP Opt B incremental recordkeeping costs, annual, \$2016	ESP Opt B incremental recordkeeping labor hours, annual, hr/yr
166	NEI41314				9940	80	10870	88	2000	16
166	NEI41314						10870	88	2000	16
166	NEI41314									
166	NEI41314									
167	NEI34070									
167	NEI34070				9940	80	10870	88	2000	16
167	NEI34070									
167	NEI34070									
169	NEI33013	10000	2180	2440						
169	NEI33013				9940	80	10870	88	2000	16
169	NEI33013						10870	88	2000	16
169	NEI33013	10000	2180	2440						
169	NEI33013	10000	2180	2440						
171	NEI18658	10000	2180	2440			10870	88	2000	16
171	NEI18658	10000	2180	2440			10870	88	2000	16
171	NEI18658	10000	2180	2440	9940	80	10870	88	2000	16
171	NEI18658	10000	2180	2440						
171	NEI18658	10000	2180	2440						
171	NEI18658	10000	2180	2440						
171	NEI18658	10000	2180	2440						
171	NEI18658	10000	2180	2440						
171	NEI18658	10000	2180	2440						
172	NEI18335									
172	NEI18335				9940	80	10870	88	2000	16
172	NEI18335						10870	88	2000	16
172	NEI18335									
172	NEI18335									
173	NEI35908									
173	NEI35908				9940	80	10870	88	2000	16
173	NEI35908									
174	NEI40247	10000	2180	2440	9940	80	10870	88	2000	16
174	NEI40247	10000	2180	2440			10870	88	2000	16
174	NEI40247									
174	NEI40247	10000	2180	2440						
174	NEI40247	10000	2180	2440						
174	NEI40247	10000	2180	2440			10870	88	2000	16
174	NEI40247	10000	2180	2440						
175	NEI26514									
175	NEI26514									

RTI Code	Final NEISiteID	Additional 5-yr periodic testing costs, capital, \$2016	Additional 5-yr periodic testing costs, annualized (3% interest), \$2016/yr	Additional 5-yr periodic testing costs, annualized (7% interest), \$2016/yr	DAS adjustments incremental R&R costs, initial, \$2016	DAS adjustments incremental R&R labor hours, initial, hr	ESP Opt A incremental R&R costs, annual, \$2016	ESP Opt A incremental R&R labor hours, annual, hr/yr	ESP Opt B incremental recordkeeping costs, annual, \$2016	ESP Opt B incremental recordkeeping labor hours, annual, hr/yr
175	NEI26514									
175	NEI26514				9940	80	10870	88	2000	16
175	NEI26514						10870	88	2000	16
175	NEI26514									
175	NEI26514									
176	NEI47104	10000	2180	2440						
176	NEI47104	10000	2180	2440						
176	NEI47104	10000	2180	2440	9940	80	10870	88	2000	16
177	NEI33887				9940	80	10870	88	2000	16
177	NEI33887									
177	NEI33887									
178	NEI26309	10000	2180	2440	9940	80	10870	88	2000	16
178	NEI26309	10000	2180	2440			10870	88	2000	16
178	NEI26309	10000	2180	2440						
178	NEI26309	10000	2180	2440						
178	NEI26309	10000	2180	2440			10870	88	2000	16
179	NEI45474	10000	2180	2440	9940	80	10870	88	2000	16
179	NEI45474	10000	2180	2440			10870	88	2000	16
179	NEI45474	10000	2180	2440						
180	NEI26471				9940	80	10870	88	2000	16
180	NEI26471									
180	NEI26471									
180	NEI26471									
181	NEI6057	10000	2180	2440		80				
181	NEI6057									
181	NEI6057									
181	NEI6057	10000	2180	2440	9940	80	10870	88	2000	16
181	NEI6057	10000	2180	2440						
181	NEI6057	10000	2180	2440						
181	NEI6057									
181	NEI6057									
181	NEI6057	10000	2180	2440			10870	88	2000	16
181	NEI6057	10000	2180	2440						
182	NEI7181				9940	80	10870	88	2000	16
182	NEI7181									
182	NEI7181									
183	NEI33103	10000	2180	2440	9940	80	10870	88	2000	16

RTI Code	Final NEISiteID	Additional 5-yr periodic testing costs, capital, \$2016	Additional 5-yr periodic testing costs, annualized (3% interest), \$2016/yr	Additional 5-yr periodic testing costs, annualized (7% interest), \$2016/yr	DAS adjustments incremental R&R costs, initial, \$2016	DAS adjustments incremental R&R labor hours, initial, hr	ESP Opt A incremental R&R costs, annual, \$2016	ESP Opt A incremental R&R labor hours, annual, hr/yr	ESP Opt B incremental recordkeeping costs, annual, \$2016	ESP Opt B incremental recordkeeping labor hours, annual, hr/yr
183	NEI33103	10000	2180	2440						
183	NEI33103	10000	2180	2440						
184	NEI46817	10000	2180	2440			10870	88	2000	16
184	NEI46817	10000	2180	2440	9940	80	10870	88	2000	16
184	NEI46817	10000	2180	2440						
184	NEI46817	10000	2180	2440			10870	88	2000	16
184	NEI46817	10000	2180	2440						
184	NEI46817	10000	2180	2440						
184	NEI46817	10000	2180	2440						
184	NEI46817	10000	2180	2440						
184	NEI46817	10000	2180	2440						
184	NEI46817	10000	2180	2440						
185	NEI46599	10000	2180	2440	9940	80	10870	88	2000	16
185	NEI46599	10000	2180	2440						
185	NEI46599	10000	2180	2440						
186	NEI18334				9940	80	10870	88	2000	16
186	NEI18334						10870	88	2000	16
186	NEI18334									
188	NEI40600									
188	NEI40600									
188	NEI40600									
188	NEI40600				9940	80	10870	88	2000	16
188	NEI40600									
188	NEI40600						10870	88	2000	16
188	NEI40600									
188	NEI40600									
189	NEI54342	10000	2180	2440						
189	NEI54342	10000	2180	2440	9940	80	10870	88	2000	16
189	NEI54342	10000	2180	2440						

RTI Code	Final NEISiteID	Additional 5-yr periodic testing costs, capital, \$2016	Additional 5-yr periodic testing costs, annualized (3% interest), \$2016/yr	Additional 5-yr periodic testing costs, annualized (7% interest), \$2016/yr	DAS adjustments incremental R&R costs, initial, \$2016	DAS adjustments incremental R&R labor hours, initial, hr	ESP Opt A incremental R&R costs, annual, \$2016	ESP Opt A incremental R&R labor hours, annual, hr/yr	ESP Opt B incremental recordkeeping costs, annual, \$2016	ESP Opt B incremental recordkeeping labor hours, annual, hr/yr
189	NEI54342	10000	2180	2440						
190	NEI26491	10000	2180	2440						
190	NEI26491	10000	2180	2440						
190	NEI26491	10000	2180	2440	9940	80	10870	88	2000	16
190	NEI26491	10000	2180	2440			10870	88	2000	16
190	NEI26491	10000	2180	2440			10870	88	2000	16
190	NEI26491	10000	2180	2440						
190	NEI26491	10000	2180	2440						
190	NEI26491	10000	2180	2440						
195	NEI46835	10000	2180	2440						
195	NEI46835	10000	2180	2440	9940	80	10870	88	2000	16
195	NEI46835	10000	2180	2440						
196	NEI18660						10870	88	2000	16
196	NEI18660				9940	80	10870	88	2000	16
196	NEI18660									
196	NEI18660									
196	NEI18660									
196	NEI18660	10000	2180	2440						
196	NEI18660	10000	2180	2440			10870	88	2000	16
196	NEI18660	10000	2180	2440						
197	NEI18657	10000	2180	2440						
197	NEI18657									
197	NEI18657	10000	2180	2440	9940	80	10870	88	2000	16
197	NEI18657	10000	2180	2440						
198	NEI41565	10000	2180	2440						
198	NEI41565	10000	2180	2440	9940	80	10870	88	2000	16
198	NEI41565	10000	2180	2440						
199	NEI18390				9940	80	10870	88	2000	16
199	NEI18390									
199	NEI18390									
200	NEI47077				9940	80	10870	88	2000	16
200	NEI47077									
200	NEI47077									
200	NEI47077						10870	88	2000	16
200	NEI47077						10870	88	2000	16
201	NEI7559				9940	80	10870	88	2000	16
201	NEI7559	10000	2180	2440						
201	NEI7559	10000	2180	2440						

RTI Code	Final NEISiteID	Additional 5-yr periodic testing costs, capital, \$2016	Additional 5-yr periodic testing costs, annualized (3% interest), \$2016/yr	Additional 5-yr periodic testing costs, annualized (7% interest), \$2016/yr	DAS adjustments incremental R&R costs, initial, \$2016	DAS adjustments incremental R&R labor hours, initial, hr	ESP Opt A incremental R&R costs, annual, \$2016	ESP Opt A incremental R&R labor hours, annual, hr/yr	ESP Opt B incremental recordkeeping costs, annual, \$2016	ESP Opt B incremental recordkeeping labor hours, annual, hr/yr
202	NEI12411									
202	NEI12411				9940	80	10870	88	2000	16
202	NEI12411									
203	NEI42410	10000	2180	2440						
203	NEI42410	10000	2180	2440						
203	NEI42410	10000	2180	2440						
203	NEI42410	10000	2180	2440	9940	80	10870	88	2000	16
203	NEI42410	10000	2180	2440			10870	88	2000	16
205	NEI8601									
205	NEI8601				9940	80	10870	88	2000	16
205	NEI8601									
205	NEI8601									
206	NEI40282				9940	80	10870	88	2000	16
206	NEI40282						10870	88	2000	16
206	NEI40282									
206	NEI40282	10000	2180	2440						
206	NEI40282	10000	2180	2440						
206	NEI40282						10870	88	2000	16
206	NEI40282									
207	NEI7104	10000	2180	2440	9940	80	10870	88	2000	16
207	NEI7104	10000	2180	2440						
207	NEI7104	10000	2180	2440						
208228535	NEI18373				9940	80	10870	88	2000	16
208228535	NEI18373									
208228535	NEI18373									
208228535	NEI18373						10870	88	2000	16
208228535	NEI18373									
208228535	NEI18373						10870	88	2000	16
226	NEI33023	10000	2180	2440						
226	NEI33023	10000	2180	2440						
226	NEI33023				9940	80	10870	88	2000	16
226	NEI33023						10870	88	2000	16
226	NEI33023	10000	2180	2440						
226	NEI33023	10000	2180	2440						
226	NEI33023	10000	2180	2440						
240	NEI26526				9940	80	10870	88	2000	16
240	NEI26526						10870	88	2000	16
240	NEI26526									
240	NEI26526						10870	88	2000	16
240	NEI26526									
242	NEI34066				9940	80	10870	88	2000	16
242	NEI34066									
242	NEI34066						10870	88	2000	16
243	NEI8196				9940	80	10870	88	2000	16
243	NEI8196						10870	88	2000	16
243	NEI8196									
243	NEI8196						10870	88	2000	16

RTI Code	Final NEISiteID	Additional 5-yr periodic testing costs, capital, \$2016	Additional 5-yr periodic testing costs, annualized (3% interest), \$2016/yr	Additional 5-yr periodic testing costs, annualized (7% interest), \$2016/yr	DAS adjustments incremental R&R costs, initial, \$2016	DAS adjustments incremental R&R labor hours, initial, hr	ESP Opt A incremental R&R costs, annual, \$2016	ESP Opt A incremental R&R labor hours, annual, hr/yr	ESP Opt B incremental recordkeeping costs, annual, \$2016	ESP Opt B incremental recordkeeping labor hours, annual, hr/yr
243	NEI8196									
340	NEI46852	10000	2180	2440	9940	80	10870	88	2000	16
340	NEI46852									
340	NEI46852	10000	2180	2440						
525	NEI8265	10000	2180	2440						
525	NEI8265	10000	2180	2440	9940	80	10870	88	2000	16
525	NEI8265	10000	2180	2440						
525	NEI8265	10000	2180	2440						
531	NEI8186				9940	80	10870	88	2000	16
531	NEI8186									
531	NEI8186						10870	88	2000	16
606	NEI47091				9940	80	10870	88	2000	16
606	NEI47091						10870	88	2000	16
606	NEI47091						10870	88	2000	16
606	NEI47091						10870	88	2000	16
606	NEI47091						10870	88	2000	16
606	NEI47091						10870	88	2000	16
606	NEI47091									
606	NEI47091									
610	NEI6261									
610	NEI6261						shares ESP with unit 610.5	shares ESP with unit 610.5	shares ESP with unit 610.5	shares ESP with unit 610.5
610	NEI6261				9940	80	10870	88	2000	16
610	NEI6261									
610	NEI6261									
610	NEI6261									
613	NEI11172									
613	NEI11172									
613	NEI11172				9940	80	10870	88	2000	16
613	NEI11172									
613	NEI11172						10870	88	2000	16
613	NEI11172									
613	NEI11172									
613	NEI11172									
613	NEI11172									

RTI Code	Final NEISiteID	Additional 5-yr periodic testing costs, capital, \$2016	Additional 5-yr periodic testing costs, annualized (3% interest), \$2016/yr	Additional 5-yr periodic testing costs, annualized (7% interest), \$2016/yr	DAS adjustments incremental R&R costs, initial, \$2016	DAS adjustments incremental R&R labor hours, initial, hr	ESP Opt A incremental R&R costs, annual, \$2016	ESP Opt A incremental R&R labor hours, annual, hr/yr	ESP Opt B incremental recordkeeping costs, annual, \$2016	ESP Opt B incremental recordkeeping labor hours, annual, hr/yr
613	NEI11172									
613	NEI11172									
613	NEI11172									
615	NEI40554	10000	2180	2440						
615	NEI40554	10000	2180	2440	9940	80	10870	88	2000	16
615	NEI40554	10000	2180	2440						
617	NEI42695	10000	2180	2440			10870	88	2000	16
617	NEI42695	10000	2180	2440						
617	NEI42695	10000	2180	2440	9940	80	10870	88	2000	16
161	NEI7621	10000	2180	2440	9940	80	10870	88	2000	16
161	NEI7621	10000	2180	2440						
161	NEI7621	10000	2180	2440						
700	NEI42351	10000	2180	2440	9940	80				
700	NEI42351	10000	2180	2440						
700	NEI42351	10000	2180	2440						
106	NEI41599	24000	5240	5850	9940	80	10870	88	2000	16
106	NEI41599	10000	2180	2440						
106	NEI41599	10000	2180	2440			10870	88	2000	16
141	NEI46750	14000	3060	3410	9940	80				
141	NEI46750									
187	NEI42211	14000	3060	3410	9940	80				
187	NEI42211									
193	NEI39968	10000	2180	2440	9940	80				
193	NEI39968	10000	2180	2440						
193	NEI39968	10000	2180	2440						
193	NEI39968	10000	2180	2440						
193	NEI39968									

RTI Code	Final NEISiteID	Additional 5-yr periodic testing costs, capital, \$2016	Additional 5-yr periodic testing costs, annualized (3% interest), \$2016/yr	Additional 5-yr periodic testing costs, annualized (7% interest), \$2016/yr	DAS adjustments incremental R&R costs, initial, \$2016	DAS adjustments incremental R&R labor hours, initial, hr	ESP Opt A incremental R&R costs, annual, \$2016	ESP Opt A incremental R&R labor hours, annual, hr/yr	ESP Opt B incremental recordkeeping costs, annual, \$2016	ESP Opt B incremental recordkeeping labor hours, annual, hr/yr
241	NEI26382									
241	NEI26382	10000	2180	2440	9940	80				
244	NEI43472	14000	3060	3410	9940	80				
244	NEI43472									
245	NEI18347									
245	NEI18347									
245	NEI18347									
247	NEI33945	14000	3060	3410	9940	80				
247	NEI33945									
304	NEIVA00022	14000	3060	3410	9940	80				
304	NEIVA00022									
		\$ 2,764,000	\$ 602,640	\$ 674,350	\$ 1,053,640	8,560	\$ 1,989,210	16,104	\$ 366,000	2,928

RTI Code	Final NEISiteID	RF and ESP-controlled LK			LK Opacity Opt A, LK = 20%, 1%, SA					
		ESP Opt A ESP parameter monitoring, capital, \$2016	ESP Opt A ESP parameter monitoring, annualized (3% interest), \$2016	ESP Opt A ESP parameter monitoring, annualized (7% interest), \$2016	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	LK Opacity Opt A labor, hr/yr	LK Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	LK Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM
100	NEI40686	90000	19700	22000						
100	NEI40686									
100	NEI40686	90000	19700	22000						
102	NEI42341A	90000	19700	22000						
102	NEI42341A	90000	19700	22000						
102	NEI42341A									
103	NEI9201	90000	19700	22000						
103	NEI9201									
103	NEI9201									
104	NEI11251	90000	19700	22000						
104	NEI11251									
104	NEI11251	90000	19700	22000						
105	NEI45182									
105	NEI45182	0	0	0						
105	NEI45182									
105	NEI45182									
105	NEI45182									
105	NEI45182	90000	19700	22000						
105	NEI45182									
105	NEI45182	90000	19700	22000						
107	NEI47074	90000	19700	22000						
107	NEI47074									
107	NEI47074	90000	19700	22000						
108	NEI33025									
108	NEI33025	90000	19700	22000						
108	NEI33025									
109	NEI32869A	90000	19700	22000	\$ 2,147,773	\$ 327,335	\$ 385,754	525	No reduction	No reduction
109	NEI32869A	90000	19700	22000						
109	NEI32869A	90000	19700	22000						
109	NEI32869A									
109	NEI32869A									
111	NEI45206									
111	NEI45206	90000	19700	22000						
111	NEI45206	90000	19700	22000						
112	NEI34064	90000	19700	22000						
112	NEI34064									
112	NEI34064	90000	19700	22000						
114	NEI26506	90000	19700	22000						
114	NEI26506									
114	NEI26506	90000	19700	22000						
115	NEI26476	90000	19700	22000						

RTI Code	Final NEISiteID	RF and ESP-controlled LK			LK Opacity Opt A, LK = 20%, 1%, SA					
		ESP Opt A ESP parameter monitoring, capital, \$2016	ESP Opt A ESP parameter monitoring, annualized (3% interest), \$2016	ESP Opt A ESP parameter monitoring, annualized (7% interest), \$2016	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	LK Opacity Opt A labor, hr/yr	LK Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	LK Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM
115	NEI26476	90000	19700	22000						
115	NEI26476									
116	NEI8619									
116	NEI8619	90000	19700	22000						
116	NEI8619									
117	NEI42689	90000	19700	22000						
117	NEI42689									
117	NEI42689									
119	NEI46814									
119	NEI46814									
119	NEI46814	90000	19700	22000						
119	NEI46814	90000	19700	22000						
119	NEI46814									
119	NEI46814									
119	NEI46814									
120	NEI26495	90000	19700	22000						
120	NEI26495									
120	NEI26495									
120	NEI26495									
121	NEI12492									
121	NEI12492									
121	NEI12492									
121	NEI12492	90000	19700	22000						
121	NEI12492	90000	19700	22000						
121	NEI12492									
121	NEI12492									
121	NEI12492									
121	NEI12492									
124	NEI8278	90000	19700	22000						
124	NEI8278									
124	NEI8278	90000	19700	22000						
124	NEI8278									
124	NEI8278									
124	NEI8278									
124	NEI8278									
126	NEI42317	90000	19700	22000						
126	NEI42317	90000	19700	22000						
126	NEI42317									
127	NEI7933	90000	19700	22000						
127	NEI7933	90000	19700	22000						

RTI Code	Final NEISiteID	RF and ESP-controlled LK			LK Opacity Opt A, LK = 20%, 1%, SA					
		ESP Opt A ESP parameter monitoring, capital, \$2016	ESP Opt A ESP parameter monitoring, annualized (3% interest), \$2016	ESP Opt A ESP parameter monitoring, annualized (7% interest), \$2016	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	LK Opacity Opt A labor, hr/yr	LK Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	LK Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM
127	NEI7933	90000	19700	22000						
127	NEI7933									
130	NEI18338	90000	19700	22000						
130	NEI18338									
130	NEI18338									
130	NEI18338									
130	NEI18338									
130	NEI18338	90000	19700	22000						
130	NEI18338									
130	NEI18338									
130	NEI18338									
130	NEI18338									
130	NEI18338									
131	NEI42254									
131	NEI42254									
131	NEI42254	90000	19700	22000						
131	NEI42254	90000	19700	22000						
131	NEI42254									
131	NEI42254									
131	NEI42254									
131	NEI42254									
131	NEI42254									
132	NEI8261	90000	19700	22000						
132	NEI8261	90000	19700	22000						
132	NEI8261									
132	NEI8261	90000	19700	22000						
132	NEI8261									
133	NEI13363	90000	19700	22000						
133	NEI13363									
133	NEI13363									
133	NEI13363									
133	NEI13363									
135	NEI33118	90000	19700	22000						
135	NEI33118									

RTI Code	Final NEISiteID	RF and ESP-controlled LK			LK Opacity Opt A, LK = 20%, 1%, SA					
		ESP Opt A ESP parameter monitoring, capital, \$2016	ESP Opt A ESP parameter monitoring, annualized (3% interest), \$2016	ESP Opt A ESP parameter monitoring, annualized (7% interest), \$2016	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	LK Opacity Opt A labor, hr/yr	LK Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	LK Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM
135	NEI33118									
135	NEI33118									
136	NEI12368	90000	19700	22000						
136	NEI12368									
136	NEI12368	90000	19700	22000						
137	NEI26581									
137	NEI26581	90000	19700	22000						
137	NEI26581									
137	NEI26581	90000	19700	22000						
137	NEI26581	90000	19700	22000						
137	NEI26581	90000	19700	22000						
137	NEI26581	90000	19700	22000						
138	NEI18652									
138	NEI18652	90000	19700	22000						
138	NEI18652									
139	NEI42357	90000	19700	22000						
139	NEI42357									
139	NEI42357									
140	NEI13340									
140	NEI13340	90000	19700	22000						
140	NEI13340									
142	NEI41552	90000	19700	22000						
142	NEI41552	90000	19700	22000						
142	NEI41552	90000	19700	22000						
142	NEI41552									
142	NEI41552									
142	NEI41552									
142	NEI41552									
143	NEI26504	90000	19700	22000						
143	NEI26504	90000	19700	22000						
143	NEI26504									
145	NEI33135									
145	NEI33135	90000	19700	22000						
145	NEI33135	90000	19700	22000						
145	NEI33135									
145	NEI33135									

RTI Code	Final NEISiteID	RF and ESP-controlled LK			LK Opacity Opt A, LK = 20%, 1%, SA					
		ESP Opt A ESP parameter monitoring, capital, \$2016	ESP Opt A ESP parameter monitoring, annualized (3% interest), \$2016	ESP Opt A ESP parameter monitoring, annualized (7% interest), \$2016	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	LK Opacity Opt A labor, hr/yr	LK Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	LK Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM
145	NEI706									
146	NEI759									
146	NEI759	90000	19700	22000						
146	NEI759									
146	NEI759									
146	NEI759	90000	19700	22000						
146	NEI759									
146	NEI759	90000	19700	22000						
147	NEI6450	90000	19700	22000						
147	NEI6450									
147	NEI6450									
147	NEI6450									
147	NEI6450									
147	NEI6450	90000	19700	22000						
147	NEI6450	90000	19700	22000						
148	NEI46931	90000	19700	22000						
148	NEI46931									
148	NEI46931									
148	NEI46931	90000	19700	22000						
148	NEI46931									
148	NEI46931	90000	19700	22000						
149	NEI40488	90000	19700	22000						
149	NEI40488									
149	NEI40488									
150	NEI6273									
150	NEI6273	90000	19700	22000						
150	NEI6273									
150	NEI6273									
150	NEI6273									
151	NEI41252									

RTI Code	Final NEISiteID	RF and ESP-controlled LK			LK Opacity Opt A, LK = 20%, 1%, SA					
		ESP Opt A ESP parameter monitoring, capital, \$2016	ESP Opt A ESP parameter monitoring, annualized (3% interest), \$2016	ESP Opt A ESP parameter monitoring, annualized (7% interest), \$2016	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	LK Opacity Opt A labor, hr/yr	LK Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	LK Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM
151	NEI41252	90000	19700	22000						
151	NEI41252									
151	NEI41252	90000	19700	22000						
151	NEI41252									
151	NEI41252									
151	NEI41252	90000	19700	22000						
151	NEI41252									
151	NEI41252									
152	NEI11338	90000	19700	22000						
152	NEI11338									
152	NEI11338									
152	NEI11338									
153	NEI33043									
153	NEI33043									
153	NEI33043									
154	NEI46739	90000	19700	22000						
154	NEI46739									
154	NEI46739									
154	NEI46739	90000	19700	22000						
154	NEI46739	90000	19700	22000						
154	NEI46739									
154	NEI46739	90000	19700	22000						
154	NEI46739									
154	NEI46739									
154	NEI46739									
154	NEI46739									
154	NEI46739									
155	NEI33883									
155	NEI33883	90000	19700	22000						
155	NEI33883									
156	NEI42338									
156	NEI42338									
156	NEI42338									
156	NEI42338	90000	19700	22000						

RTI Code	Final NEISiteID	RF and ESP-controlled LK			LK Opacity Opt A, LK = 20%, 1%, SA					
		ESP Opt A ESP parameter monitoring, capital, \$2016	ESP Opt A ESP parameter monitoring, annualized (3% interest), \$2016	ESP Opt A ESP parameter monitoring, annualized (7% interest), \$2016	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	LK Opacity Opt A labor, hr/yr	LK Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	LK Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM
156	NEI42338	0	0	0						
156	NEI42338	90000	19700	22000						
156	NEI42338	90000	19700	22000						
156	NEI42338									
156	NEI42338									
156	NEI42338									
159	NEI8177									
159	NEI8177									
159	NEI8177									
162	NEI46760									
162	NEI46760	90000	19700	22000						
162	NEI46760	90000	19700	22000						
162	NEI46760									
162	NEI46760	90000	19700	22000						
162	NEI46760									
163	NEI8560									
163	NEI8560									
163	NEI8560									
163	NEI8560									
163	NEI8560									
163	NEI8560	90000	19700	22000						
163	NEI8560	90000	19700	22000						
163	NEI8560									
163	NEI8560									
163	NEI8560									
164	NEI42710	90000	19700	22000						
164	NEI42710	90000	19700	22000						
164	NEI42710									
164	NEI42710									
164	NEI42710									
165	NEI41628									
165	NEI41628	90000	19700	22000						
165	NEI41628									
165	NEI41628	90000	19700	22000						
165	NEI41628									
165	NEI41628									
166	NEI41314									
166	NEI41314									
166	NEI41314									
166	NEI41314									
166	NEI41314									

RTI Code	Final NEISiteID	RF and ESP-controlled LK			LK Opacity Opt A, LK = 20%, 1%, SA					
		ESP Opt A ESP parameter monitoring, capital, \$2016	ESP Opt A ESP parameter monitoring, annualized (3% interest), \$2016	ESP Opt A ESP parameter monitoring, annualized (7% interest), \$2016	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	LK Opacity Opt A labor, hr/yr	LK Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	LK Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM
166	NEI41314	90000	19700	22000						
166	NEI41314	90000	19700	22000						
166	NEI41314									
166	NEI41314									
167	NEI34070									
167	NEI34070	90000	19700	22000						
167	NEI34070									
167	NEI34070									
169	NEI33013									
169	NEI33013	90000	19700	22000						
169	NEI33013	90000	19700	22000						
169	NEI33013									
169	NEI33013									
171	NEI18658	90000	19700	22000						
171	NEI18658	90000	19700	22000						
171	NEI18658	90000	19700	22000						
171	NEI18658									
171	NEI18658									
171	NEI18658									
171	NEI18658									
171	NEI18658									
172	NEI18335									
172	NEI18335	90000	19700	22000						
172	NEI18335	90000	19700	22000						
172	NEI18335									
172	NEI18335									
173	NEI35908									
173	NEI35908	90000	19700	22000						
173	NEI35908									
174	NEI40247	90000	19700	22000						
174	NEI40247	90000	19700	22000						
174	NEI40247									
174	NEI40247									
174	NEI40247									
174	NEI40247	90000	19700	22000						
174	NEI40247									
175	NEI26514									
175	NEI26514									

RTI Code	Final NEISiteID	RF and ESP-controlled LK			LK Opacity Opt A, LK = 20%, 1%, SA					
		ESP Opt A ESP parameter monitoring, capital, \$2016	ESP Opt A ESP parameter monitoring, annualized (3% interest), \$2016	ESP Opt A ESP parameter monitoring, annualized (7% interest), \$2016	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	LK Opacity Opt A labor, hr/yr	LK Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	LK Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM
175	NEI26514									
175	NEI26514	90000	19700	22000						
175	NEI26514	90000	19700	22000						
175	NEI26514									
175	NEI26514									
176	NEI47104									
176	NEI47104									
176	NEI47104	90000	19700	22000						
177	NEI33887	90000	19700	22000						
177	NEI33887									
177	NEI33887									
178	NEI26309	90000	19700	22000						
178	NEI26309	90000	19700	22000						
178	NEI26309									
178	NEI26309									
178	NEI26309	90000	19700	22000						
179	NEI45474	90000	19700	22000						
179	NEI45474	90000	19700	22000						
179	NEI45474									
180	NEI26471	90000	19700	22000						
180	NEI26471									
180	NEI26471									
180	NEI26471									
181	NEI6057									
181	NEI6057									
181	NEI6057									
181	NEI6057	90000	19700	22000						
181	NEI6057									
181	NEI6057									
181	NEI6057									
181	NEI6057									
181	NEI6057	90000	19700	22000						
181	NEI6057									
182	NEI7181	90000	19700	22000						
182	NEI7181									
182	NEI7181									
183	NEI33103	90000	19700	22000						

RTI Code	Final NEISiteID	RF and ESP-controlled LK			LK Opacity Opt A, LK = 20%, 1%, SA					
		ESP Opt A ESP parameter monitoring, capital, \$2016	ESP Opt A ESP parameter monitoring, annualized (3% interest), \$2016	ESP Opt A ESP parameter monitoring, annualized (7% interest), \$2016	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	LK Opacity Opt A labor, hr/yr	LK Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	LK Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM
183	NEI33103									
183	NEI33103									
184	NEI46817	90000	19700	22000						
184	NEI46817	90000	19700	22000						
184	NEI46817									
184	NEI46817	90000	19700	22000						
184	NEI46817									
184	NEI46817									
184	NEI46817									
184	NEI46817									
184	NEI46817									
184	NEI46817									
184	NEI46817									
185	NEI46599	90000	19700	22000						
185	NEI46599									
185	NEI46599									
186	NEI18334	90000	19700	22000						
186	NEI18334	90000	19700	22000						
186	NEI18334									
188	NEI40600									
188	NEI40600									
188	NEI40600									
188	NEI40600	90000	19700	22000						
188	NEI40600									
188	NEI40600	90000	19700	22000						
188	NEI40600									
188	NEI40600									
189	NEI54342									
189	NEI54342	90000	19700	22000						
189	NEI54342									

RTI Code	Final NEISiteID	RF and ESP-controlled LK			LK Opacity Opt A, LK = 20%, 1%, SA					
		ESP Opt A ESP parameter monitoring, capital, \$2016	ESP Opt A ESP parameter monitoring, annualized (3% interest), \$2016	ESP Opt A ESP parameter monitoring, annualized (7% interest), \$2016	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	LK Opacity Opt A labor, hr/yr	LK Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	LK Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM
189	NEI54342									
190	NEI26491									
190	NEI26491									
190	NEI26491	90000	19700	22000						
190	NEI26491	90000	19700	22000						
190	NEI26491	90000	19700	22000						
190	NEI26491									
190	NEI26491									
190	NEI26491									
195	NEI46835									
195	NEI46835	90000	19700	22000						
195	NEI46835									
196	NEI18660	90000	19700	22000						
196	NEI18660	90000	19700	22000						
196	NEI18660									
196	NEI18660									
196	NEI18660									
196	NEI18660	90000	19700	22000						
196	NEI18660									
197	NEI18657									
197	NEI18657									
197	NEI18657	90000	19700	22000						
197	NEI18657									
198	NEI41565									
198	NEI41565	90000	19700	22000						
198	NEI41565									
199	NEI18390	90000	19700	22000						
199	NEI18390									
199	NEI18390									
200	NEI47077	90000	19700	22000	\$ 2,647,141	\$ 407,311	\$ 479,313	525	No reduction	No reduction
200	NEI47077									
200	NEI47077									
200	NEI47077	90000	19700	22000						
200	NEI47077	90000	19700	22000						
201	NEI7559	90000	19700	22000						
201	NEI7559									
201	NEI7559									

RTI Code	Final NEISiteID	RF and ESP-controlled LK			LK Opacity Opt A, LK = 20%, 1%, SA					
		ESP Opt A ESP parameter monitoring, capital, \$2016	ESP Opt A ESP parameter monitoring, annualized (3% interest), \$2016	ESP Opt A ESP parameter monitoring, annualized (7% interest), \$2016	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	LK Opacity Opt A labor, hr/yr	LK Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	LK Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM
202	NEI12411									
202	NEI12411	90000	19700	22000						
202	NEI12411									
203	NEI42410									
203	NEI42410									
203	NEI42410									
203	NEI42410	90000	19700	22000						
203	NEI42410	90000	19700	22000						
205	NEI8601									
205	NEI8601	90000	19700	22000						
205	NEI8601									
205	NEI8601									
206	NEI40282	90000	19700	22000						
206	NEI40282	90000	19700	22000						
206	NEI40282									
206	NEI40282									
206	NEI40282									
206	NEI40282	90000	19700	22000						
206	NEI40282									
207	NEI7104	90000	19700	22000						
207	NEI7104									
207	NEI7104									
208228535	NEI18373	90000	19700	22000						
208228535	NEI18373									
208228535	NEI18373									
208228535	NEI18373	90000	19700	22000						
208228535	NEI18373									
208228535	NEI18373	90000	19700	22000						
226	NEI33023									
226	NEI33023									
226	NEI33023	90000	19700	22000						
226	NEI33023	90000	19700	22000						
226	NEI33023									
226	NEI33023									
240	NEI26526	90000	19700	22000						
240	NEI26526	90000	19700	22000						
240	NEI26526									
240	NEI26526	90000	19700	22000						
240	NEI26526									
240	NEI26526									
242	NEI34066	90000	19700	22000						
242	NEI34066									
242	NEI34066	90000	19700	22000						
243	NEI8196	90000	19700	22000						
243	NEI8196	90000	19700	22000						
243	NEI8196									
243	NEI8196	90000	19700	22000						

RTI Code	Final NEISiteID	RF and ESP-controlled LK			LK Opacity Opt A, LK = 20%, 1%, SA					
		ESP Opt A ESP parameter monitoring, capital, \$2016	ESP Opt A ESP parameter monitoring, annualized (3% interest), \$2016	ESP Opt A ESP parameter monitoring, annualized (7% interest), \$2016	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	LK Opacity Opt A labor, hr/yr	LK Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	LK Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM
243	NEI8196									
340	NEI46852	90000	19700	22000						
340	NEI46852									
340	NEI46852									
525	NEI8265									
525	NEI8265	90000	19700	22000						
525	NEI8265									
525	NEI8265									
531	NEI8186	90000	19700	22000						
531	NEI8186									
531	NEI8186	90000	19700	22000						
606	NEI47091	90000	19700	22000						
606	NEI47091	90000	19700	22000						
606	NEI47091	90000	19700	22000						
606	NEI47091	90000	19700	22000						
606	NEI47091	90000	19700	22000						
606	NEI47091									
606	NEI47091									
606	NEI47091									
610	NEI6261									
610	NEI6261	shares ESP with unit 610.5	shares ESP with unit 610.5	shares ESP with unit 610.5						
610	NEI6261	90000	19700	22000						
610	NEI6261									
610	NEI6261									
610	NEI6261									
613	NEI11172									
613	NEI11172									
613	NEI11172	90000	19700	22000						
613	NEI11172									
613	NEI11172									
613	NEI11172	90000	19700	22000						
613	NEI11172									
613	NEI11172									
613	NEI11172									
613	NEI11172									
613	NEI11172									

RTI Code	Final NEISiteID	RF and ESP-controlled LK			LK Opacity Opt A, LK = 20%, 1%, SA					
		ESP Opt A ESP parameter monitoring, capital, \$2016	ESP Opt A ESP parameter monitoring, annualized (3% interest), \$2016	ESP Opt A ESP parameter monitoring, annualized (7% interest), \$2016	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	LK Opacity Opt A labor, hr/yr	LK Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	LK Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM
613	NEI11172									
613	NEI11172									
613	NEI11172									
615	NEI40554									
615	NEI40554	90000	19700	22000						
615	NEI40554									
617	NEI42695	90000	19700	22000						
617	NEI42695									
617	NEI42695	90000	19700	22000						
161	NEI7621	90000	19700	22000						
161	NEI7621									
161	NEI7621									
700	NEI42351									
700	NEI42351									
700	NEI42351									
106	NEI41599	90000	19700	22000						
106	NEI41599									
106	NEI41599	90000	19700	22000						
141	NEI46750									
141	NEI46750									
187	NEI42211									
187	NEI42211									
193	NEI39968									
193	NEI39968									
193	NEI39968									
193	NEI39968									
193	NEI39968									
193	NEI39968									

RTI Code	Final NEISiteID	RF and ESP-controlled LK			LK Opacity Opt A, LK = 20%, 1%, SA					
		ESP Opt A ESP parameter monitoring, capital, \$2016	ESP Opt A ESP parameter monitoring, annualized (3% interest), \$2016	ESP Opt A ESP parameter monitoring, annualized (7% interest), \$2016	LK Opacity Opt A ESP upgrade, capital, \$2016	LK Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	LK Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	LK Opacity Opt A labor, hr/yr	LK Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	LK Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM
241	NEI26382									
241	NEI26382									
244	NEI43472									
244	NEI43472									
245	NEI18347									
245	NEI18347									
245	NEI18347									
247	NEI33945									
247	NEI33945									
304	NEIVA00022									
304	NEIVA00022									
		\$ 16,470,000	\$ 3,605,100	\$ 4,026,000	\$ 4,794,914	\$ 734,646	\$ 865,067	1,050		

RTI Code	Final NEISiteID	RF Opacity Opt A, RF=20%, 2%, SA						RF Opacity Opt B, RF=20%, 6%, SA			
		RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM	RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt B labor, hr/yr
100	NEI40686										
100	NEI40686										
100	NEI40686										
102	NEI42341A										
102	NEI42341A										
102	NEI42341A										
103	NEI9201										
103	NEI9201										
103	NEI9201										
104	NEI11251										
104	NEI11251										
104	NEI11251										
105	NEI45182										
105	NEI45182										
105	NEI45182										
105	NEI45182										
105	NEI45182										
105	NEI45182										
105	NEI45182										
107	NEI47074										
107	NEI47074										
107	NEI47074										
108	NEI33025										
108	NEI33025										
108	NEI33025										
109	NEI32869A										
109	NEI32869A	\$ 5,938,794	\$ 850,632	\$ 1,012,167	525	21,208	25,235	\$ 5,938,794	\$ 850,632	\$ 1,012,167	525
109	NEI32869A										
109	NEI32869A										
109	NEI32869A										
111	NEI45206										
111	NEI45206										
111	NEI45206										
112	NEI34064										
112	NEI34064										
112	NEI34064										
114	NEI26506										
114	NEI26506										
114	NEI26506										
115	NEI26476										

RTI Code	Final NEISiteID	RF Opacity Opt A, RF=20%, 2%, SA						RF Opacity Opt B, RF=20%, 6%, SA			
		RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM	RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt B labor, hr/yr
115	NEI26476										
115	NEI26476										
116	NEI8619										
116	NEI8619										
116	NEI8619										
117	NEI42689										
117	NEI42689										
117	NEI42689										
119	NEI46814										
119	NEI46814										
119	NEI46814										
119	NEI46814	\$ 7,716,181	\$ 1,115,592	\$ 1,325,472	525	19,394	23,043				
119	NEI46814										
119	NEI46814										
119	NEI46814										
120	NEI26495	\$ 11,181,005	\$ 1,650,372	\$ 1,954,495	525	No reduction	No reduction				
120	NEI26495										
120	NEI26495										
120	NEI26495										
121	NEI12492										
121	NEI12492										
121	NEI12492										
121	NEI12492										
121	NEI12492										
121	NEI12492										
121	NEI12492										
121	NEI12492										
121	NEI12492										
124	NEI8278										
124	NEI8278										
124	NEI8278										
124	NEI8278										
124	NEI8278										
124	NEI8278										
124	NEI8278										
124	NEI8278										
124	NEI8278										
126	NEI42317										
126	NEI42317										
126	NEI42317										
127	NEI7933										
127	NEI7933										

RTI Code	Final NEISiteID	RF Opacity Opt A, RF=20%, 2%, SA						RF Opacity Opt B, RF=20%, 6%, SA			
		RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM	RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt B labor, hr/yr
127	NEI7933	\$ 9,362,092	\$ 1,366,754	\$ 1,621,402	525	No reduction	No reduction	\$ 9,362,092	\$ 1,366,754	\$ 1,621,402	525
127	NEI7933										
130	NEI18338										
130	NEI18338										
130	NEI18338										
130	NEI18338										
130	NEI18338										
130	NEI18338										
130	NEI18338										
130	NEI18338										
130	NEI18338										
131	NEI42254										
131	NEI42254										
131	NEI42254										
131	NEI42254										
131	NEI42254										
131	NEI42254										
131	NEI42254										
131	NEI42254										
131	NEI42254										
131	NEI42254										
132	NEI8261										
132	NEI8261										
132	NEI8261										
132	NEI8261										
132	NEI8261										
133	NEI13363										
133	NEI13363										
133	NEI13363										
133	NEI13363										
133	NEI13363										
135	NEI33118										
135	NEI33118										

RTI Code	Final NEISiteID	RF Opacity Opt A, RF=20%, 2%, SA						RF Opacity Opt B, RF=20%, 6%, SA			
		RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM	RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt B labor, hr/yr
135	NEI33118										
135	NEI33118										
136	NEI12368										
136	NEI12368										
136	NEI12368										
137	NEI26581										
137	NEI26581										
137	NEI26581										
137	NEI26581										
137	NEI26581										
137	NEI26581										
137	NEI26581										
138	NEI18652										
138	NEI18652										
138	NEI18652										
139	NEI42357	\$ 5,938,794	\$ 850,632	\$ 1,012,167	525	721,524	858,541				
139	NEI42357										
139	NEI42357										
140	NEI13340										
140	NEI13340	\$ 7,556,648	\$ 1,091,537	\$ 1,297,078	525	No reduction	No reduction				
140	NEI13340										
142	NEI41552										
142	NEI41552										
142	NEI41552										
142	NEI41552										
142	NEI41552										
142	NEI41552										
143	NEI26504										
143	NEI26504										
143	NEI26504										
145	NEI33135										
145	NEI33135										
145	NEI33135										
145	NEI33135										

RTI Code	Final NEISiteID	RF Opacity Opt A, RF=20%, 2%, SA						RF Opacity Opt B, RF=20%, 6%, SA			
		RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM	RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt B labor, hr/yr
145	NEI706										
146	NEI759										
146	NEI759										
146	NEI759										
146	NEI759										
146	NEI759										
146	NEI759										
146	NEI759										
146	NEI759										
146	NEI759										
146	NEI759										
147	NEI6450										
147	NEI6450										
147	NEI6450										
147	NEI6450										
147	NEI6450										
147	NEI6450										
147	NEI6450										
147	NEI6450										
148	NEI46931	\$ 7,838,757	\$ 1,134,109	\$ 1,347,324	525	No reduction	No reduction	\$ 7,838,757	\$ 1,134,109	\$ 1,347,324	525
148	NEI46931										
148	NEI46931										
148	NEI46931	\$ 10,650,168	\$ 1,566,964	\$ 1,856,649	525	No reduction	No reduction				
148	NEI46931										
148	NEI46931										
149	NEI40488										
149	NEI40488										
149	NEI40488										
150	NEI6273										
150	NEI6273										
150	NEI6273										
150	NEI6273										
150	NEI6273										
151	NEI41252										

RTI Code	Final NEISiteID	RF Opacity Opt A, RF=20%, 2%, SA						RF Opacity Opt B, RF=20%, 6%, SA			
		RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM	RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt B labor, hr/yr
151	NEI41252										
151	NEI41252										
151	NEI41252										
151	NEI41252										
151	NEI41252										
151	NEI41252										
151	NEI41252										
151	NEI41252										
152	NEI11338										
152	NEI11338										
152	NEI11338										
152	NEI11338										
153	NEI33043										
153	NEI33043										
153	NEI33043										
154	NEI46739										
154	NEI46739										
154	NEI46739										
154	NEI46739										
154	NEI46739										
154	NEI46739										
154	NEI46739										
154	NEI46739										
154	NEI46739										
154	NEI46739										
154	NEI46739										
154	NEI46739										
155	NEI33883										
155	NEI33883										
155	NEI33883										
156	NEI42338										
156	NEI42338										
156	NEI42338										
156	NEI42338										
156	NEI42338										

RTI Code	Final NEISiteID	RF Opacity Opt A, RF=20%, 2%, SA						RF Opacity Opt B, RF=20%, 6%, SA			
		RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM	RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt B labor, hr/yr
156	NEI42338										
156	NEI42338										
156	NEI42338										
156	NEI42338										
156	NEI42338										
156	NEI42338										
159	NEI8177										
159	NEI8177										
159	NEI8177										
162	NEI46760										
162	NEI46760										
162	NEI46760										
162	NEI46760										
162	NEI46760										
162	NEI46760										
162	NEI46760										
162	NEI46760										
163	NEI8560										
163	NEI8560										
163	NEI8560										
163	NEI8560										
163	NEI8560										
163	NEI8560										
163	NEI8560										
163	NEI8560										
163	NEI8560										
163	NEI8560										
164	NEI42710										
164	NEI42710										
164	NEI42710										
164	NEI42710										
164	NEI42710										
165	NEI41628										
165	NEI41628										
165	NEI41628										
165	NEI41628										
165	NEI41628										
165	NEI41628										
165	NEI41628										
166	NEI41314										
166	NEI41314										
166	NEI41314										
166	NEI41314										
166	NEI41314										

RTI Code	Final NEISiteID	RF Opacity Opt A, RF=20%, 2%, SA						RF Opacity Opt B, RF=20%, 6%, SA			
		RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM	RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt B labor, hr/yr
166	NEI41314										
166	NEI41314										
166	NEI41314										
166	NEI41314										
167	NEI34070										
167	NEI34070										
167	NEI34070										
167	NEI34070										
169	NEI33013										
169	NEI33013										
169	NEI33013										
169	NEI33013										
169	NEI33013										
171	NEI18658	\$ 3,185,568	\$ 454,523	\$ 541,170	525	20,729	24,681				
171	NEI18658	\$ 3,073,115	\$ 438,756	\$ 522,345	525	42,283	50,338				
171	NEI18658	\$ 6,304,437	\$ 904,583	\$ 1,076,063	525	67,926	80,803				
171	NEI18658										
171	NEI18658										
171	NEI18658										
171	NEI18658										
171	NEI18658										
171	NEI18658										
172	NEI18335										
172	NEI18335										
172	NEI18335										
172	NEI18335										
172	NEI18335										
173	NEI35908										
173	NEI35908										
173	NEI35908										
174	NEI40247										
174	NEI40247	\$ 13,028,115	\$ 1,944,530	\$ 2,298,894	525	No reduction	No reduction				
174	NEI40247										
174	NEI40247										
174	NEI40247										
174	NEI40247										
174	NEI40247										
175	NEI26514										
175	NEI26514										

RTI Code	Final NEISiteID	RF Opacity Opt A, RF=20%, 2%, SA						RF Opacity Opt B, RF=20%, 6%, SA			
		RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM	RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt B labor, hr/yr
175	NEI26514										
175	NEI26514										
175	NEI26514										
175	NEI26514										
175	NEI26514										
176	NEI47104										
176	NEI47104										
176	NEI47104										
177	NEI33887										
177	NEI33887										
177	NEI33887										
178	NEI26309										
178	NEI26309										
178	NEI26309										
178	NEI26309										
178	NEI26309										
179	NEI45474										
179	NEI45474										
179	NEI45474										
180	NEI26471										
180	NEI26471										
180	NEI26471										
180	NEI26471										
180	NEI26471										
181	NEI6057										
181	NEI6057										
181	NEI6057										
181	NEI6057										
181	NEI6057										
181	NEI6057										
181	NEI6057										
181	NEI6057										
181	NEI6057										
181	NEI6057										
181	NEI6057										
181	NEI6057										
181	NEI6057										
182	NEI7181										
182	NEI7181										
182	NEI7181										
183	NEI33103										

RTI Code	Final NEISiteID	RF Opacity Opt A, RF=20%, 2%, SA						RF Opacity Opt B, RF=20%, 6%, SA			
		RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM	RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt B labor, hr/yr
183	NEI33103										
183	NEI33103										
184	NEI46817										
184	NEI46817										
184	NEI46817										
184	NEI46817										
184	NEI46817										
184	NEI46817										
184	NEI46817										
184	NEI46817										
184	NEI46817										
184	NEI46817										
185	NEI46599										
185	NEI46599										
185	NEI46599										
186	NEI18334										
186	NEI18334										
186	NEI18334										
188	NEI40600										
188	NEI40600										
188	NEI40600										
188	NEI40600										
188	NEI40600										
188	NEI40600										
188	NEI40600										
188	NEI40600										
189	NEI54342										
189	NEI54342										
189	NEI54342										

RTI Code	Final NEISiteID	RF Opacity Opt A, RF=20%, 2%, SA					RF Opacity Opt B, RF=20%, 6%, SA				
		RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM	RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt B labor, hr/yr
189	NEI54342										
190	NEI26491										
190	NEI26491										
190	NEI26491										
190	NEI26491										
190	NEI26491										
190	NEI26491										
190	NEI26491										
190	NEI26491										
195	NEI46835										
195	NEI46835										
195	NEI46835										
196	NEI18660										
196	NEI18660										
196	NEI18660										
196	NEI18660										
196	NEI18660										
196	NEI18660										
196	NEI18660										
196	NEI18660										
197	NEI18657										
197	NEI18657										
197	NEI18657										
197	NEI18657										
198	NEI41565										
198	NEI41565										
198	NEI41565										
199	NEI18390										
199	NEI18390										
199	NEI18390										
200	NEI47077										
200	NEI47077										
200	NEI47077										
200	NEI47077										
200	NEI47077										
201	NEI7559										
201	NEI7559										
201	NEI7559										

RTI Code	Final NEISiteID	RF Opacity Opt A, RF=20%, 2%, SA					RF Opacity Opt B, RF=20%, 6%, SA				
		RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM	RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt B labor, hr/yr
202	NEI12411										
202	NEI12411										
202	NEI12411										
203	NEI42410										
203	NEI42410										
203	NEI42410										
203	NEI42410										
203	NEI42410										
205	NEI8601										
205	NEI8601										
205	NEI8601										
205	NEI8601										
206	NEI40282										
206	NEI40282										
206	NEI40282										
206	NEI40282										
206	NEI40282										
206	NEI40282										
206	NEI40282										
206	NEI40282										
207	NEI7104										
207	NEI7104										
207	NEI7104										
208228535	NEI18373	\$ 11,112,128	\$ 1,639,520	\$ 1,941,770	525	56,177	66,533	\$ 11,112,128	\$ 1,639,520	\$ 1,941,770	525
208228535	NEI18373										
208228535	NEI18373										
208228535	NEI18373	\$ 12,401,829	\$ 1,844,118	\$ 2,181,448	525	No reduction	No reduction				
208228535	NEI18373										
208228535	NEI18373										
226	NEI33023										
226	NEI33023										
226	NEI33023										
226	NEI33023										
226	NEI33023										
226	NEI33023										
240	NEI26526										
240	NEI26526										
240	NEI26526										
240	NEI26526										
240	NEI26526										
240	NEI26526										
242	NEI34066										
242	NEI34066										
242	NEI34066										
243	NEI8196										
243	NEI8196										
243	NEI8196										
243	NEI8196										

RTI Code	Final NEISiteID	RF Opacity Opt A, RF=20%, 2%, SA						RF Opacity Opt B, RF=20%, 6%, SA			
		RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM	RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt B labor, hr/yr
243	NEI8196										
340	NEI46852										
340	NEI46852										
340	NEI46852										
525	NEI8265										
525	NEI8265										
525	NEI8265										
525	NEI8265										
525	NEI8265										
531	NEI8186										
531	NEI8186										
531	NEI8186										
606	NEI47091										
606	NEI47091										
606	NEI47091										
606	NEI47091										
606	NEI47091										
606	NEI47091										
606	NEI47091	\$ 8,698,199	\$ 1,264,800	\$ 1,501,391	525	20,537	24,379	\$ 8,698,199	\$ 1,264,800	\$ 1,501,391	525
606	NEI47091										
606	NEI47091										
606	NEI47091										
606	NEI47091										
610	NEI6261										
610	NEI6261										
610	NEI6261										
610	NEI6261										
610	NEI6261										
610	NEI6261										
610	NEI6261										
613	NEI11172										
613	NEI11172										
613	NEI11172										
613	NEI11172										
613	NEI11172										
613	NEI11172										
613	NEI11172										
613	NEI11172										
613	NEI11172										
613	NEI11172										
613	NEI11172										
613	NEI11172										
613	NEI11172										
613	NEI11172										
613	NEI11172										
613	NEI11172										

RTI Code	Final NEISiteID	RF Opacity Opt A, RF=20%, 2%, SA						RF Opacity Opt B, RF=20%, 6%, SA			
		RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM	RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt B labor, hr/yr
613	NEI11172										
613	NEI11172										
613	NEI11172										
615	NEI40554										
615	NEI40554										
615	NEI40554										
617	NEI42695										
617	NEI42695										
617	NEI42695										
161	NEI7621										
161	NEI7621										
161	NEI7621										
700	NEI42351										
700	NEI42351										
700	NEI42351										
106	NEI41599										
106	NEI41599										
106	NEI41599										
141	NEI46750										
141	NEI46750										
187	NEI42211										
187	NEI42211										
193	NEI39968										
193	NEI39968										
193	NEI39968										
193	NEI39968										
193	NEI39968										

RTI Code	Final NEISiteID	RF Opacity Opt A, RF=20%, 2%, SA						RF Opacity Opt B, RF=20%, 6%, SA			
		RF Opacity Opt A ESP upgrade, capital, \$2016	RF Opacity Opt A ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt A ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt A potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt A potential cost effectiveness (7% interest), \$/ton PM	RF Opacity Opt B ESP upgrade, capital, \$2016	RF Opacity Opt B ESP upgrade, annualized (3% interest), \$2016/yr	RF Opacity Opt B ESP upgrade, annualized (7% interest), \$2016/yr	RF Opacity Opt B labor, hr/yr
241	NEI26382										
241	NEI26382										
244	NEI43472										
244	NEI43472										
245	NEI18347										
245	NEI18347										
245	NEI18347										
247	NEI33945										
247	NEI33945										
304	NEIVA00022										
304	NEIVA00022										
		\$ 123,985,830	\$ 18,117,421	\$ 21,489,836	7,875	\$ 77,029	\$ 91,367	\$ 42,949,971	\$ 6,255,815	\$ 7,424,054	2,625

RTI Code	Final NEISiteID	Potential Emission Reduction from RF and LK Opacity Options										
		RF Opacity Opt B potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt B potential cost effectiveness (7% interest), \$/ton PM	PM permit limit, gr/dscf (numeric)	Potential PM allowed by permit, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy
100	NEI40686											
100	NEI40686											
100	NEI40686											
102	NEI42341A											
102	NEI42341A											
102	NEI42341A											
103	NEI9201											
103	NEI9201											
103	NEI9201											
104	NEI11251											
104	NEI11251											
104	NEI11251											
105	NEI45182											
105	NEI45182											
105	NEI45182											
105	NEI45182											
105	NEI45182											
105	NEI45182											
105	NEI45182											
107	NEI47074											
107	NEI47074											
107	NEI47074											
108	NEI33025											
108	NEI33025											
108	NEI33025											
109	NEI32869A			0.064	5.3	0	0	7,628	0.037	0.014	0.122	0.6
109	NEI32869A	21,208	25,235	0.025	114	40	18	10,534	0.052	0.019	0.169	0.8
109	NEI32869A											
109	NEI32869A											
109	NEI32869A											
111	NEI45206											
111	NEI45206											
111	NEI45206											
112	NEI34064											
112	NEI34064											
112	NEI34064											
114	NEI26506											
114	NEI26506											
114	NEI26506											
115	NEI26476											

RTI Code	Final NEISiteID	Potential Emission Reduction from RF and LK Opacity Options										
		RF Opacity Opt B potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt B potential cost effectiveness (7% interest), \$/ton PM	PM permit limit, gr/dscf (numeric)	Potential PM allowed by permit, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy
115	NEI26476											
115	NEI26476											
116	NEI8619											
116	NEI8619											
116	NEI8619											
117	NEI42689											
117	NEI42689											
117	NEI42689											
119	NEI46814											
119	NEI46814											
119	NEI46814											
119	NEI46814			0.029	152	58	26	16,296	0.080	0.029	0.261	1.2
119	NEI46814											
119	NEI46814											
120	NEI26495			0.021	99	0	0	30,238	0.148	0.054	0.484	2.2
120	NEI26495											
120	NEI26495											
120	NEI26495											
121	NEI12492											
121	NEI12492											
121	NEI12492											
121	NEI12492											
121	NEI12492											
121	NEI12492											
121	NEI12492											
121	NEI12492											
124	NEI8278											
124	NEI8278											
124	NEI8278											
124	NEI8278											
124	NEI8278											
124	NEI8278											
124	NEI8278											
124	NEI8278											
124	NEI8278											
126	NEI42317											
126	NEI42317											
126	NEI42317											
127	NEI7933											
127	NEI7933											

RTI Code	Final NEISiteID	Potential Emission Reduction from RF and LK Opacity Options										
		RF Opacity Opt B potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt B potential cost effectiveness (7% interest), \$/ton PM	PM permit limit, gr/dscf (numeric)	Potential PM allowed by permit, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy
127	NEI7933	No reduction	No reduction	0.044	53	0	0	22,492	0.110	0.040	0.360	1.6
127	NEI7933											
130	NEI18338											
130	NEI18338											
130	NEI18338											
130	NEI18338											
130	NEI18338											
130	NEI18338											
130	NEI18338											
130	NEI18338											
130	NEI18338											
131	NEI42254											
131	NEI42254											
131	NEI42254											
131	NEI42254											
131	NEI42254											
131	NEI42254											
131	NEI42254											
131	NEI42254											
131	NEI42254											
131	NEI42254											
132	NEI8261											
132	NEI8261											
132	NEI8261											
132	NEI8261											
132	NEI8261											
133	NEI13363											
133	NEI13363											
133	NEI13363											
133	NEI13363											
133	NEI13363											
135	NEI33118											
135	NEI33118											

RTI Code	Final NEISiteID	Potential Emission Reduction from RF and LK Opacity Options										
		RF Opacity Opt B potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt B potential cost effectiveness (7% interest), \$/ton PM	PM permit limit, gr/dscf (numeric)	Potential PM allowed by permit, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy
135	NEI33118											
135	NEI33118											
136	NEI12368											
136	NEI12368											
136	NEI12368											
137	NEI26581											
137	NEI26581											
137	NEI26581											
137	NEI26581											
137	NEI26581											
137	NEI26581											
137	NEI26581											
138	NEI18652											
138	NEI18652											
138	NEI18652											
139	NEI42357			0.044	99	1.2	0.5	10,534	0.052	0.019	0.169	0.8
139	NEI42357											
139	NEI42357											
140	NEI13340											
140	NEI13340			0.044	53	0	0	15,738	0.077	0.028	0.252	1.1
140	NEI13340											
142	NEI41552											
142	NEI41552											
142	NEI41552											
142	NEI41552											
142	NEI41552											
142	NEI41552											
143	NEI26504											
143	NEI26504											
143	NEI26504											
145	NEI33135											
145	NEI33135											
145	NEI33135											
145	NEI33135											
145	NEI33135											

RTI Code	Final NEISiteID	Potential Emission Reduction from RF and LK Opacity Options										
		RF Opacity Opt B potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt B potential cost effectiveness (7% interest), \$/ton PM	PM permit limit, gr/dscf (numeric)	Potential PM allowed by permit, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy
145	NEI706											
146	NEI759											
146	NEI759											
146	NEI759											
146	NEI759											
146	NEI759											
146	NEI759											
146	NEI759											
146	NEI759											
147	NEI6450											
147	NEI6450											
147	NEI6450											
147	NEI6450											
147	NEI6450											
147	NEI6450											
147	NEI6450											
147	NEI6450											
148	NEI46931	No reduction	No reduction	0.036	67	0	0	16,730	0.082	0.030	0.268	1.2
148	NEI46931											
148	NEI46931											
148	NEI46931			0.028	91	0	0	27,883	0.137	0.050	0.446	2.0
148	NEI46931											
148	NEI46931											
149	NEI40488											
149	NEI40488											
149	NEI40488											
150	NEI6273											
150	NEI6273											
150	NEI6273											
150	NEI6273											
150	NEI6273											
151	NEI41252											

RTI Code	Final NEISiteID	Potential Emission Reduction from RF and LK Opacity Options										
		RF Opacity Opt B potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt B potential cost effectiveness (7% interest), \$/ton PM	PM permit limit, gr/dscf (numeric)	Potential PM allowed by permit, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy
151	NEI41252											
151	NEI41252											
151	NEI41252											
151	NEI41252											
151	NEI41252											
151	NEI41252											
151	NEI41252											
151	NEI41252											
152	NEI11338											
152	NEI11338											
152	NEI11338											
152	NEI11338											
153	NEI33043											
153	NEI33043											
153	NEI33043											
154	NEI46739											
154	NEI46739											
154	NEI46739											
154	NEI46739											
154	NEI46739											
154	NEI46739											
154	NEI46739											
154	NEI46739											
154	NEI46739											
154	NEI46739											
154	NEI46739											
154	NEI46739											
155	NEI33883											
155	NEI33883											
155	NEI33883											
156	NEI42338											
156	NEI42338											
156	NEI42338											
156	NEI42338											

RTI Code	Final NEISiteID	Potential Emission Reduction from RF and LK Opacity Options										
		RF Opacity Opt B potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt B potential cost effectiveness (7% interest), \$/ton PM	PM permit limit, gr/dscf (numeric)	Potential PM allowed by permit, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy
156	NEI42338											
156	NEI42338											
156	NEI42338											
156	NEI42338											
156	NEI42338											
156	NEI42338											
159	NEI8177											
159	NEI8177											
159	NEI8177											
162	NEI46760											
162	NEI46760											
162	NEI46760											
162	NEI46760											
162	NEI46760											
162	NEI46760											
162	NEI46760											
163	NEI8560											
163	NEI8560											
163	NEI8560											
163	NEI8560											
163	NEI8560											
163	NEI8560											
163	NEI8560											
163	NEI8560											
163	NEI8560											
163	NEI8560											
164	NEI42710											
164	NEI42710											
164	NEI42710											
164	NEI42710											
164	NEI42710											
165	NEI41628											
165	NEI41628											
165	NEI41628											
165	NEI41628											
165	NEI41628											
165	NEI41628											
166	NEI41314											
166	NEI41314											
166	NEI41314											
166	NEI41314											
166	NEI41314											

RTI Code	Final NEISiteID	Potential Emission Reduction from RF and LK Opacity Options										
		RF Opacity Opt B potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt B potential cost effectiveness (7% interest), \$/ton PM	PM permit limit, gr/dscf (numeric)	Potential PM allowed by permit, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy
166	NEI41314											
166	NEI41314											
166	NEI41314											
166	NEI41314											
167	NEI34070											
167	NEI34070											
167	NEI34070											
167	NEI34070											
169	NEI33013											
169	NEI33013											
169	NEI33013											
169	NEI33013											
169	NEI33013											
171	NEI18658			0.044	91	22	13	3,730	0.018	0.007	0.060	0.3
171	NEI18658			0.044	75	10	6.1	3,513	0.017	0.006	0.056	0.3
171	NEI18658			0.044	136	13	7.9	11,636	0.057	0.021	0.186	0.8
171	NEI18658											
171	NEI18658											
171	NEI18658											
171	NEI18658											
171	NEI18658											
171	NEI18658											
172	NEI18335											
172	NEI18335											
172	NEI18335											
172	NEI18335											
172	NEI18335											
173	NEI35908											
173	NEI35908											
173	NEI35908											
174	NEI40247											
174	NEI40247			0.043	67	0	0	39,013	0.191	0.070	0.624	2.8
174	NEI40247											
174	NEI40247											
174	NEI40247											
174	NEI40247											
174	NEI40247											
175	NEI26514											
175	NEI26514											

RTI Code	Final NEISiteID	Potential Emission Reduction from RF and LK Opacity Options										
		RF Opacity Opt B potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt B potential cost effectiveness (7% interest), \$/ton PM	PM permit limit, gr/dscf (numeric)	Potential PM allowed by permit, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy
175	NEI26514											
175	NEI26514											
175	NEI26514											
175	NEI26514											
175	NEI26514											
176	NEI47104											
176	NEI47104											
176	NEI47104											
177	NEI33887											
177	NEI33887											
177	NEI33887											
178	NEI26309											
178	NEI26309											
178	NEI26309											
178	NEI26309											
178	NEI26309											
179	NEI45474											
179	NEI45474											
179	NEI45474											
180	NEI26471											
180	NEI26471											
180	NEI26471											
180	NEI26471											
180	NEI26471											
181	NEI6057											
181	NEI6057											
181	NEI6057											
181	NEI6057											
181	NEI6057											
181	NEI6057											
181	NEI6057											
181	NEI6057											
181	NEI6057											
181	NEI6057											
181	NEI6057											
181	NEI6057											
182	NEI7181											
182	NEI7181											
182	NEI7181											
183	NEI33103											

RTI Code	Final NEISiteID	Potential Emission Reduction from RF and LK Opacity Options										
		RF Opacity Opt B potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt B potential cost effectiveness (7% interest), \$/ton PM	PM permit limit, gr/dscf (numeric)	Potential PM allowed by permit, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy
183	NEI33103											
183	NEI33103											
184	NEI46817											
184	NEI46817											
184	NEI46817											
184	NEI46817											
184	NEI46817											
184	NEI46817											
184	NEI46817											
184	NEI46817											
184	NEI46817											
184	NEI46817											
185	NEI46599											
185	NEI46599											
185	NEI46599											
186	NEI18334											
186	NEI18334											
186	NEI18334											
188	NEI40600											
188	NEI40600											
188	NEI40600											
188	NEI40600											
188	NEI40600											
188	NEI40600											
188	NEI40600											
188	NEI40600											
189	NEI54342											
189	NEI54342											
189	NEI54342											

RTI Code	Final NEISiteID	Potential Emission Reduction from RF and LK Opacity Options										
		RF Opacity Opt B potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt B potential cost effectiveness (7% interest), \$/ton PM	PM permit limit, gr/dscf (numeric)	Potential PM allowed by permit, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy
189	NEI54342											
190	NEI26491											
190	NEI26491											
190	NEI26491											
190	NEI26491											
190	NEI26491											
190	NEI26491											
190	NEI26491											
190	NEI26491											
195	NEI46835											
195	NEI46835											
195	NEI46835											
196	NEI18660											
196	NEI18660											
196	NEI18660											
196	NEI18660											
196	NEI18660											
196	NEI18660											
196	NEI18660											
196	NEI18660											
197	NEI18657											
197	NEI18657											
197	NEI18657											
197	NEI18657											
198	NEI41565											
198	NEI41565											
198	NEI41565											
199	NEI18390											
199	NEI18390											
199	NEI18390											
200	NEI47077			0.03	6.1	0	0	10,807	0.053	0.019	0.173	0.8
200	NEI47077											
200	NEI47077											
200	NEI47077											
200	NEI47077											
201	NEI7559											
201	NEI7559											
201	NEI7559											

RTI Code	Final NEISiteID	Potential Emission Reduction from RF and LK Opacity Options										
		RF Opacity Opt B potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt B potential cost effectiveness (7% interest), \$/ton PM	PM permit limit, gr/dscf (numeric)	Potential PM allowed by permit, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy
202	NEI12411											
202	NEI12411											
202	NEI12411											
203	NEI42410											
203	NEI42410											
203	NEI42410											
203	NEI42410											
203	NEI42410											
205	NEI8601											
205	NEI8601											
205	NEI8601											
205	NEI8601											
206	NEI40282											
206	NEI40282											
206	NEI40282											
206	NEI40282											
206	NEI40282											
206	NEI40282											
206	NEI40282											
206	NEI40282											
207	NEI7104											
207	NEI7104											
207	NEI7104											
208228535	NEI18373	56,177	66,533	0.025	241	29	13	29,928	0.147	0.054	0.479	2.2
208228535	NEI18373											
208228535	NEI18373											
208228535	NEI18373			0.035	174	0	0	35,938	0.176	0.065	0.575	2.6
208228535	NEI18373											
208228535	NEI18373											
226	NEI33023											
226	NEI33023											
226	NEI33023											
226	NEI33023											
226	NEI33023											
226	NEI33023											
226	NEI33023											
240	NEI26526											
240	NEI26526											
240	NEI26526											
240	NEI26526											
240	NEI26526											
240	NEI26526											
242	NEI34066											
242	NEI34066											
242	NEI34066											
243	NEI8196											
243	NEI8196											
243	NEI8196											
243	NEI8196											

RTI Code	Final NEISiteID	Potential Emission Reduction from RF and LK Opacity Options										
		RF Opacity Opt B potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt B potential cost effectiveness (7% interest), \$/ton PM	PM permit limit, gr/dscf (numeric)	Potential PM allowed by permit, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy
243	NEI8196											
340	NEI46852											
340	NEI46852											
340	NEI46852											
525	NEI8265											
525	NEI8265											
525	NEI8265											
525	NEI8265											
525	NEI8265											
531	NEI8186											
531	NEI8186											
531	NEI8186											
606	NEI47091											
606	NEI47091											
606	NEI47091											
606	NEI47091	20,537	24,379	0.044	153	62	28	19,897	0.097	0.036	0.318	1.5
606	NEI47091											
606	NEI47091											
606	NEI47091											
610	NEI6261											
610	NEI6261											
610	NEI6261											
610	NEI6261											
610	NEI6261											
610	NEI6261											
613	NEI11172											
613	NEI11172											
613	NEI11172											
613	NEI11172											
613	NEI11172											
613	NEI11172											
613	NEI11172											
613	NEI11172											
613	NEI11172											
613	NEI11172											
613	NEI11172											
613	NEI11172											
613	NEI11172											
613	NEI11172											
613	NEI11172											
613	NEI11172											
613	NEI11172											

RTI Code	Final NEISiteID	Potential Emission Reduction from RF and LK Opacity Options										
		RF Opacity Opt B potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt B potential cost effectiveness (7% interest), \$/ton PM	PM permit limit, gr/dscf (numeric)	Potential PM allowed by permit, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy
613	NEI11172											
613	NEI11172											
613	NEI11172											
615	NEI40554											
615	NEI40554											
615	NEI40554											
617	NEI42695											
617	NEI42695											
617	NEI42695											
161	NEI7621											
161	NEI7621											
161	NEI7621											
700	NEI42351											
700	NEI42351											
700	NEI42351											
106	NEI41599											
106	NEI41599											
106	NEI41599											
141	NEI46750											
141	NEI46750											
187	NEI42211											
187	NEI42211											
193	NEI39968											
193	NEI39968											
193	NEI39968											
193	NEI39968											
193	NEI39968											

RTI Code	Final NEISiteID	Potential Emission Reduction from RF and LK Opacity Options										
		RF Opacity Opt B potential cost effectiveness (3% interest), \$/ton PM	RF Opacity Opt B potential cost effectiveness (7% interest), \$/ton PM	PM permit limit, gr/dscf (numeric)	Potential PM allowed by permit, tpy	Potential PM reduction, tpy	Potential PM _{2.5} reduction, tpy	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy
241	NEI26382											
241	NEI26382											
244	NEI43472											
244	NEI43472											
245	NEI18347											
245	NEI18347											
245	NEI18347											
247	NEI33945											
247	NEI33945											
304	NEIVA00022											
304	NEIVA00022											
		\$ 47,798	\$ 56,724	Total	1,677	235	112	312,536	1.5	0.6	5.0	23

LK Option A	11	-	-	18,435	0.09	0.03	0.3	1.3
HAP metals	0.05	-	-	Total crit. poll.	5.0			
RF Option A	1,665	235	112	294,101	1.4	0.5	4.7	21
HAP metals	0.5	0.07		Total crit. poll.	81			
RF Option B	628	131	59	99,581	0.5	0.2	1.6	7.3
HAP metals	0.2	0.04		Total crit. poll.	27			

RTI Code	Final NEISiteID			
		Secondary SO ₂ , tpy	Secondary CO ₂ e, tpy	Secondary Hg, tpy
100	NEI40686			
100	NEI40686			
100	NEI40686			
102	NEI42341A			
102	NEI42341A			
102	NEI42341A			
103	NEI9201			
103	NEI9201			
103	NEI9201			
104	NEI11251			
104	NEI11251			
104	NEI11251			
105	NEI45182			
105	NEI45182			
105	NEI45182			
105	NEI45182			
105	NEI45182			
105	NEI45182			
105	NEI45182			
107	NEI47074			
107	NEI47074			
107	NEI47074			
108	NEI33025			
108	NEI33025			
108	NEI33025			
109	NEI32869A	1.4	389	0.0047
109	NEI32869A	1.9	537	0.0065
109	NEI32869A			
109	NEI32869A			
109	NEI32869A			
111	NEI45206			
111	NEI45206			
111	NEI45206			
112	NEI34064			
112	NEI34064			
112	NEI34064			
114	NEI26506			
114	NEI26506			
114	NEI26506			
115	NEI26476			

RTI Code	Final NEISiteID			
		Secondary SO ₂ , tpy	Secondary CO ₂ e, tpy	Secondary Hg, tpy
115	NEI26476			
115	NEI26476			
116	NEI8619			
116	NEI8619			
116	NEI8619			
117	NEI42689			
117	NEI42689			
117	NEI42689			
119	NEI46814			
119	NEI46814			
119	NEI46814			
119	NEI46814	2.9	831	0.0100
119	NEI46814			
119	NEI46814			
119	NEI46814			
120	NEI26495	5.4	1542	0.0186
120	NEI26495			
120	NEI26495			
120	NEI26495			
121	NEI12492			
121	NEI12492			
121	NEI12492			
121	NEI12492			
121	NEI12492			
121	NEI12492			
121	NEI12492			
121	NEI12492			
121	NEI12492			
124	NEI8278			
124	NEI8278			
124	NEI8278			
124	NEI8278			
124	NEI8278			
124	NEI8278			
124	NEI8278			
124	NEI8278			
124	NEI8278			
126	NEI42317			
126	NEI42317			
126	NEI42317			
127	NEI7933			
127	NEI7933			

RTI Code	Final NEISiteID			
		Secondary SO ₂ , tpy	Secondary CO ₂ e, tpy	Secondary Hg, tpy
127	NEI7933	4.0	1147	0.0138
127	NEI7933			
130	NEI18338			
130	NEI18338			
130	NEI18338			
130	NEI18338			
130	NEI18338			
130	NEI18338			
130	NEI18338			
130	NEI18338			
130	NEI18338			
131	NEI42254			
131	NEI42254			
131	NEI42254			
131	NEI42254			
131	NEI42254			
131	NEI42254			
131	NEI42254			
131	NEI42254			
131	NEI42254			
131	NEI42254			
131	NEI42254			
131	NEI42254			
132	NEI8261			
132	NEI8261			
132	NEI8261			
132	NEI8261			
132	NEI8261			
133	NEI13363			
133	NEI13363			
133	NEI13363			
133	NEI13363			
133	NEI13363			
135	NEI33118			
135	NEI33118			

RTI Code	Final NEISiteID			
		Secondary SO ₂ , tpy	Secondary CO ₂ e, tpy	Secondary Hg, tpy
135	NEI33118			
135	NEI33118			
136	NEI12368			
136	NEI12368			
136	NEI12368			
137	NEI26581			
137	NEI26581			
137	NEI26581			
137	NEI26581			
137	NEI26581			
137	NEI26581			
137	NEI26581			
138	NEI18652			
138	NEI18652			
138	NEI18652			
139	NEI42357	1.9	537	0.0065
139	NEI42357			
139	NEI42357			
140	NEI13340			
140	NEI13340	2.8	803	0.0097
140	NEI13340			
142	NEI41552			
142	NEI41552			
142	NEI41552			
142	NEI41552			
142	NEI41552			
142	NEI41552			
142	NEI41552			
143	NEI26504			
143	NEI26504			
143	NEI26504			
145	NEI33135			
145	NEI33135			
145	NEI33135			
145	NEI33135			
145	NEI33135			

RTI Code	Final NEISiteID			
		Secondary SO ₂ , tpy	Secondary CO ₂ e, tpy	Secondary Hg, tpy
145	NEI706			
146	NEI759			
146	NEI759			
146	NEI759			
146	NEI759			
146	NEI759			
146	NEI759			
146	NEI759			
146	NEI759			
147	NEI6450			
147	NEI6450			
147	NEI6450			
147	NEI6450			
147	NEI6450			
147	NEI6450			
147	NEI6450			
147	NEI6450			
148	NEI46931	3.0	853	0.0103
148	NEI46931			
148	NEI46931			
148	NEI46931	5.0	1422	0.0171
148	NEI46931			
148	NEI46931			
149	NEI40488			
149	NEI40488			
149	NEI40488			
150	NEI6273			
150	NEI6273			
150	NEI6273			
150	NEI6273			
150	NEI6273			
151	NEI41252			

RTI Code	Final NEISiteID			
		Secondary SO ₂ , tpy	Secondary CO ₂ e, tpy	Secondary Hg, tpy
151	NEI41252			
151	NEI41252			
151	NEI41252			
151	NEI41252			
151	NEI41252			
151	NEI41252			
151	NEI41252			
151	NEI41252			
152	NEI11338			
152	NEI11338			
152	NEI11338			
152	NEI11338			
153	NEI33043			
153	NEI33043			
153	NEI33043			
154	NEI46739			
154	NEI46739			
154	NEI46739			
154	NEI46739			
154	NEI46739			
154	NEI46739			
154	NEI46739			
154	NEI46739			
154	NEI46739			
154	NEI46739			
154	NEI46739			
154	NEI46739			
155	NEI33883			
155	NEI33883			
155	NEI33883			
156	NEI42338			
156	NEI42338			
156	NEI42338			
156	NEI42338			

RTI Code	Final NEISiteID			
		Secondary SO ₂ , tpy	Secondary CO ₂ e, tpy	Secondary Hg, tpy
156	NEI42338			
156	NEI42338			
156	NEI42338			
156	NEI42338			
156	NEI42338			
156	NEI42338			
159	NEI8177			
159	NEI8177			
159	NEI8177			
162	NEI46760			
162	NEI46760			
162	NEI46760			
162	NEI46760			
162	NEI46760			
162	NEI46760			
162	NEI46760			
162	NEI46760			
163	NEI8560			
163	NEI8560			
163	NEI8560			
163	NEI8560			
163	NEI8560			
163	NEI8560			
163	NEI8560			
163	NEI8560			
163	NEI8560			
163	NEI8560			
163	NEI8560			
163	NEI8560			
163	NEI8560			
164	NEI42710			
164	NEI42710			
164	NEI42710			
164	NEI42710			
164	NEI42710			
165	NEI41628			
165	NEI41628			
165	NEI41628			
165	NEI41628			
165	NEI41628			
165	NEI41628			
165	NEI41628			
166	NEI41314			
166	NEI41314			
166	NEI41314			
166	NEI41314			
166	NEI41314			

RTI Code	Final NEISiteID			
		Secondary SO ₂ , tpy	Secondary CO ₂ e, tpy	Secondary Hg, tpy
166	NEI41314			
166	NEI41314			
166	NEI41314			
166	NEI41314			
167	NEI34070			
167	NEI34070			
167	NEI34070			
167	NEI34070			
169	NEI33013			
169	NEI33013			
169	NEI33013			
169	NEI33013			
169	NEI33013			
171	NEI18658	0.7	190	0.0023
171	NEI18658	0.6	179	0.0022
171	NEI18658	2.1	593	0.0071
171	NEI18658			
171	NEI18658			
171	NEI18658			
171	NEI18658			
171	NEI18658			
171	NEI18658			
172	NEI18335			
172	NEI18335			
172	NEI18335			
172	NEI18335			
173	NEI35908			
173	NEI35908			
173	NEI35908			
174	NEI40247			
174	NEI40247	7.0	1990	0.0240
174	NEI40247			
174	NEI40247			
174	NEI40247			
174	NEI40247			
174	NEI40247			
175	NEI26514			
175	NEI26514			

RTI Code	Final NEISiteID			
		Secondary SO ₂ , tpy	Secondary CO ₂ e, tpy	Secondary Hg, tpy
175	NEI26514			
175	NEI26514			
175	NEI26514			
175	NEI26514			
175	NEI26514			
176	NEI47104			
176	NEI47104			
176	NEI47104			
177	NEI33887			
177	NEI33887			
177	NEI33887			
178	NEI26309			
178	NEI26309			
178	NEI26309			
178	NEI26309			
178	NEI26309			
179	NEI45474			
179	NEI45474			
179	NEI45474			
180	NEI26471			
180	NEI26471			
180	NEI26471			
180	NEI26471			
181	NEI6057			
181	NEI6057			
181	NEI6057			
181	NEI6057			
181	NEI6057			
181	NEI6057			
181	NEI6057			
181	NEI6057			
181	NEI6057			
181	NEI6057			
181	NEI6057			
182	NEI7181			
182	NEI7181			
182	NEI7181			
183	NEI33103			

RTI Code	Final NEISiteID			
		Secondary SO ₂ , tpy	Secondary CO ₂ e, tpy	Secondary Hg, tpy
183	NEI33103			
183	NEI33103			
184	NEI46817			
184	NEI46817			
184	NEI46817			
184	NEI46817			
184	NEI46817			
184	NEI46817			
184	NEI46817			
184	NEI46817			
185	NEI46599			
185	NEI46599			
185	NEI46599			
186	NEI18334			
186	NEI18334			
186	NEI18334			
188	NEI40600			
188	NEI40600			
188	NEI40600			
188	NEI40600			
188	NEI40600			
188	NEI40600			
188	NEI40600			
188	NEI40600			
189	NEI54342			
189	NEI54342			
189	NEI54342			

RTI Code	Final NEISiteID			
		Secondary SO ₂ , tpy	Secondary CO ₂ e, tpy	Secondary Hg, tpy
189	NEI54342			
190	NEI26491			
190	NEI26491			
190	NEI26491			
190	NEI26491			
190	NEI26491			
190	NEI26491			
190	NEI26491			
190	NEI26491			
195	NEI46835			
195	NEI46835			
195	NEI46835			
196	NEI18660			
196	NEI18660			
196	NEI18660			
196	NEI18660			
196	NEI18660			
196	NEI18660			
196	NEI18660			
196	NEI18660			
196	NEI18660			
197	NEI18657			
197	NEI18657			
197	NEI18657			
197	NEI18657			
197	NEI18657			
198	NEI41565			
198	NEI41565			
198	NEI41565			
199	NEI18390			
199	NEI18390			
199	NEI18390			
200	NEI47077	1.9	551	0.0066
200	NEI47077			
200	NEI47077			
200	NEI47077			
200	NEI47077			
201	NEI7559			
201	NEI7559			
201	NEI7559			

RTI Code	Final NEISiteID			
		Secondary SO ₂ , tpy	Secondary CO ₂ e, tpy	Secondary Hg, tpy
202	NEI12411			
202	NEI12411			
202	NEI12411			
203	NEI42410			
203	NEI42410			
203	NEI42410			
203	NEI42410			
203	NEI42410			
205	NEI8601			
205	NEI8601			
205	NEI8601			
205	NEI8601			
206	NEI40282			
206	NEI40282			
206	NEI40282			
206	NEI40282			
206	NEI40282			
206	NEI40282			
206	NEI40282			
206	NEI40282			
207	NEI7104			
207	NEI7104			
207	NEI7104			
208228535	NEI18373	5.4	1526	0.0184
208228535	NEI18373			
208228535	NEI18373			
208228535	NEI18373	6.5	1833	0.0221
208228535	NEI18373			
208228535	NEI18373			
226	NEI33023			
226	NEI33023			
226	NEI33023			
226	NEI33023			
226	NEI33023			
226	NEI33023			
226	NEI33023			
240	NEI26526			
240	NEI26526			
240	NEI26526			
240	NEI26526			
240	NEI26526			
240	NEI26526			
242	NEI34066			
242	NEI34066			
242	NEI34066			
243	NEI8196			
243	NEI8196			
243	NEI8196			
243	NEI8196			

RTI Code	Final NEISiteID			
		Secondary SO ₂ , tpy	Secondary CO ₂ e, tpy	Secondary Hg, tpy
243	NEI8196			
340	NEI46852			
340	NEI46852			
340	NEI46852			
525	NEI8265			
525	NEI8265			
525	NEI8265			
525	NEI8265			
531	NEI8186			
531	NEI8186			
531	NEI8186			
606	NEI47091			
606	NEI47091			
606	NEI47091			
606	NEI47091			
606	NEI47091			
606	NEI47091	3.6	1015	0.0122
606	NEI47091			
606	NEI47091			
606	NEI47091			
610	NEI6261			
610	NEI6261			
610	NEI6261			
610	NEI6261			
610	NEI6261			
610	NEI6261			
610	NEI6261			
613	NEI11172			
613	NEI11172			
613	NEI11172			
613	NEI11172			
613	NEI11172			
613	NEI11172			
613	NEI11172			
613	NEI11172			
613	NEI11172			
613	NEI11172			
613	NEI11172			
613	NEI11172			
613	NEI11172			
613	NEI11172			
613	NEI11172			
613	NEI11172			

RTI Code	Final NEISiteID			
		Secondary SO ₂ , tpy	Secondary CO ₂ e, tpy	Secondary Hg, tpy
613	NEI11172			
613	NEI11172			
613	NEI11172			
615	NEI40554			
615	NEI40554			
615	NEI40554			
617	NEI42695			
617	NEI42695			
617	NEI42695			
161	NEI7621			
161	NEI7621			
161	NEI7621			
700	NEI42351			
700	NEI42351			
700	NEI42351			
106	NEI41599			
106	NEI41599			
106	NEI41599			
141	NEI46750			
141	NEI46750			
187	NEI42211			
187	NEI42211			
193	NEI39968			
193	NEI39968			
193	NEI39968			
193	NEI39968			
193	NEI39968			

RTI Code	Final NEISiteID			
		Secondary SO ₂ , tpy	Secondary CO ₂ e, tpy	Secondary Hg, tpy
241	NEI26382			
241	NEI26382			
244	NEI43472			
244	NEI43472			
245	NEI18347			
245	NEI18347			
245	NEI18347			
247	NEI33945			
247	NEI33945			
304	NEIVA00022			
304	NEIVA00022			
		56	15,939	0.2
		3.3	940	0.01
		53	14,999	0.2
		18	5,079	0.06

Appendix B

Documentation of Costs and Impacts for Opacity Options

Table B-1. Recovery Furnace ESP Upgrade Costs (Adding Two Parallel Fields)

Table B-2. Lime Kiln ESP Upgrade Cost (Adding a Single Field)

Table B-3. Estimated Cost of Emission Test – One Unit

Table B-4. Basic Rates for Labor, Per Diem, and Equipment Rental

Table B-5. Analytical Costs

Table B-6. Non-Mercury HAP Metal Percentage of Total PM for Subpart MM Emission Units

Table B-1. Recovery Furnace ESP Upgrade Costs (Adding Two Parallel Fields)

Parameters	Updated cost, 2016\$	Equation	Source
Design Parameters			
Furnace Size, MM lb BLS/d	3.7		
Total Capital Cost, \$	\$9,470,000	$\$9,470,000 \times (\text{furnace size}/[3.7\text{MM lb BLS/d}])^{0.6}$	Costs from commenters (EPA 2017b), extrapolated to 3.7MM lb BLS/d model RF using 6/10 cost rule, and averaged together
Annual Cost, \$/yr			
Maintenance & Materials	\$189,400	2% of capital cost	BE&K 2001 (p. 49)
Energy	\$154,668	$411 \text{ kW power} \times 70\% \text{ power usage factor} \times \text{furnace size}/[3.7\text{MM lb BLS/d}] \times 350 \text{ d/yr} \times 24 \text{ hr/d} \times \$0.0640/\text{kWh}$	BE&K 2001 (pp. 49, 85), with updated electricity unit cost from EIA 2017
Labor	\$14,154	$1.5 \text{ hr/d} \times 350 \text{ d/yr} \times \$26.96/\text{hr}$	BE&K 2001, with updated labor rate from BLS 2017
Testing	\$10,000	\$10,000/yr per recovery furnace	BE&K 2001, with updated testing cost from algorithm
Admin., Taxes, and Insurance	\$378,800	4% of capital cost	EPA 2002
Capital Recovery			
3% interest	\$636,384	$0.0672 \times \text{capital cost, based on 20-yr remaining service life and 3\% interest}$	EPA 2002
7% interest	\$893,968	$0.0944 \times \text{capital cost, based on 20-yr remaining service life and 7\% interest}$	EPA 2002
Total Annual Cost, \$/yr			
3% interest	\$1,383,400		
7% interest	\$1,641,000		
Energy Impacts, MMBtu/yr	22,926	$\text{Annual energy cost } (\$/\text{yr})/(\$0.0640/\text{kWh}) \times 3415.179 \text{ Btu/kWh} \times \text{MMBtu}/1\text{E6 Btu} / 36\% \text{ power plant efficiency}$	

Table B-2. Lime Kiln ESP Upgrade Cost (Adding a Single Field)

Parameters	Original cost, 2001\$	Updated cost, 2016\$	Equation	Source
Design Parameters				
Kiln Size, tons CaO/day	240.0	240.0		
Cost Indices				
CEPCI, 2001		394.3		CE 2017
CEPCI, Dec. 2016		550.8		CE 2017
Total Capital Cost, \$	\$1,274,280	\$1,780,000	$\$1,274,280 \times (\text{kiln size}/[240 \text{ tons CaO/day}])^{0.6} \times 550.8/394.3$	BE&K 2001, ESP upgrade - adding 1 parallel field to get to "best" option of 0.01 gr/dscf @ 10% O ₂
Annual Cost, \$/yr				
Maintenance & Materials	\$12,743	\$17,800	1% of capital cost	Calculated as 2% of BE&K 2001 capital cost
Energy	\$29,400	\$37,632	100 kW power x 70% power usage factor x kiln size/[240 tons CaO/d] x 350 d/yr x 24 hr/d x \$0.0640/kWh	BE&K 2001 (pp. 52, 85), with updated electricity unit cost from EIA 2017
Labor	\$19,999	\$14,154	1.5 hr/d x 350 d/yr x \$27.22/hr	BE&K 2001, with updated labor rate from BLS 2017
Testing	\$5,000	\$10,000	\$10,000/yr per recovery furnace	BE&K 2001, with updated testing cost from algorithm
Admin., Taxes, and Insurance	\$50,971	\$71,200	4% of capital cost	EPA 2002
Capital Recovery				
3% interest	\$85,632	\$119,616	0.0672 x capital cost, based on 20-yr remaining service life and 3% interest	EPA 2002
7% interest	\$120,292	\$168,032	0.0944 x capital cost, based on 20-yr remaining service life and 7% interest	EPA 2002
Total Annual Cost, \$/yr				
3% interest	\$203,700	\$270,400		
7% interest	\$238,400	\$318,800		
Energy Impacts, MMBtu/yr	7,140	5,578	Annual energy cost (\$/yr)/(\$0.0640/kWh) x 3415.179 Btu/kWh x MMBtu/1E6 Btu / 36% power plant efficiency	

Table B-3. Estimated Cost of Emission Test – One Unit

Parameter	No.			Assumptions
	PM	Methanol	THC	
Hours of Testing	3	3	3	Assumes 1 hour each
No. Of Tests				
Method 5 - PM	1			1 stack
Method 308 - Methanol		1		1 stack
Method 25A - THC			1	1 stack
Total No. of Tests	1	1	1	
Days	1	1	1	3 hours of test runs per day, plus 0.5 day for setup and teardown
Nights	0	0	0	
Travel Time to Site (Hours)	4	4	4	

Item/Activity	Cost, \$			Assumptions
	PM	Methanol	THC	
Equipment Rental				
Volumetric Flow Sampler	\$50	\$50	\$50	
CO ₂ /O ₂ Analyzer	\$200	\$200	\$200	
Sample Lines	\$75	\$75	\$75	
Trailer to Haul Equipment	\$200	\$200	\$200	
Rental Truck	\$100	\$100	\$100	
Miscellaneous Equipment	\$300	\$300	\$300	
Total Equipment Rental Cost	\$925	\$925	\$925	
Travel				
Labor	\$1,160	\$1,160	\$1,160	
Lodging	\$0	\$0	\$0	
Per Diem	\$120	\$120	\$120	
Vehicle Rental	\$60	\$60	\$60	One car
Total Travel Cost	\$1,340	\$1,340	\$1,340	
Testing Cost				
Mobilization	\$460	\$460	\$460	4 hours for site manager and Technician II
Setup Equipment	\$580	\$580	\$580	Assume 4 hours for 3-man crew
Perform Test	\$579	\$579	\$579	Includes downtime, assumed to be 33% of testing time
Take Down Equipment	\$290	\$290	\$290	Assume 2 hours for 3-man crew
Onsite Contingency	\$95	\$95	\$95	Approximately 5% of testing cost for short-term delays
Total Testing Cost	\$2,004	\$2,004	\$2,004	
Standby/Overtime Fees				Not applicable

Item/Activity	Cost, \$			Assumptions
	PM	Methanol	THC	
Laboratory Analysis				
Method 5 - PM	\$135	\$0	\$0	
Method 308 - Methanol	\$0	\$3,600	\$0	
Method 25A - THC	\$0	\$0	\$3,600	
Total	\$135	\$3,600	\$3,600	
Test Report				
Data Reduction and Review	\$160	\$160	\$160	2 hr + 2 hr/test
Report Preparation	\$290	\$290	\$290	2 hr + 1 hr/test for technical reviewer; 8 hr + 0.5 hr/test for clerical
Report Review	\$180	\$180	\$180	1 hr + 0.5 hr/test for project manager
Supplies (Paper, Copies, etc.)	\$100	\$100	\$100	Assume \$100
Total Test Report Cost	\$730	\$730	\$730	
Other				
Audits	\$1,000	\$1,000	\$1,000	\$500 + \$500/test
ERT	\$2,000	\$2,000	\$2,000	\$1,000 + \$1,000/test
CEDRI	\$2,000	\$2,000	\$2,000	\$1,000 + \$1,000/test
Total Other Cost	\$5,000	\$5,000	\$5,000	

Summary	Cost, \$			Assumptions
	PM	Methanol	THC	
Total Equipment Rental Cost	\$925	\$925	\$925	
Total Travel Cost	\$1,340	\$1,340	\$1,340	
Total Testing Cost	\$2,004	\$2,004	\$2,004	
Standby/Overtime Fees	\$0	\$0	\$0	
Laboratory Analysis Cost	\$135	\$3,600	\$3,600	
Total Test Report Cost	\$730	\$730	\$730	
Total Other Cost	\$5,000	\$5,000	\$5,000	
Total	\$10,000	\$14,000	\$14,000	

Table B-4. Basic Rates for Labor, Per Diem, and Equipment Rental

Daily Expenses	\$/day
Lodging	\$75
Per Diem	\$40
Vehicle Rental	\$60
Volumetric Flow Sampler	\$50
CO ₂ /O ₂ Analyzer	\$200
CO Analyzer	\$200
NO _x Analyzer	\$200
SO ₂ Analyzer	\$200
FID/GC	\$400
Sample Lines	\$75
Trailer to Haul Equipment	\$200
Rental Truck	\$100
Miscellaneous Equipment	\$300

Labor Rates (Loaded)	\$/hr
Onsite Testing Staff	
Site Manager	\$75
Technician II	\$40
Technician I	\$30
Office Staff	
Project Manager	\$120
Technical Reviewer	\$40
Clerical	\$20
Financial	\$50

Table B-5. Analytical Costs

Method	Analytes	Cost, \$	Notes
5	PM	\$135	\$45 per test run, 3 runs
308	Methanol	\$3,600	\$1,200 per test run, 3 runs
25A	THC	\$3,600	\$1,200 per test run, 3 runs

Note: The cost for Method 25A test assumed to be the same as Method 308 test.

Table B-6. Non-Mercury HAP Metal Percentage of Total PM for Subpart MM Emission Units

Process unit type	Emission factors			Percent of total PM
	Total non-Hg HAP metals ¹	Total PM ²	Emission factor units	
Recovery furnace	2.30E-04	0.698	lb/ton BLS	0.03%
SDT	1.57E-04	0.16	lb/ton BLS	0.10%
Lime kiln	6.40E-03	1.33	lb/ton CaO	0.48%
Sulfite combustion unit	1.75E-03	1.73	lb/ton RLS	0.10%

1. Total non-mercury HAP metals emission factors derived from data in NCASI 2010.

2. Total PM emission factors in NCASI 2004.

Appendix C

Mill-specific Impacts for the Mills Impacted by Subpart MM RTR Regulatory Options

Table C-1. Labor Impacts by Facility

Table C-2. Energy and Secondary Impacts of the Opacity Options by Facility

Table C-1. Labor Impacts by Facility

RTI Code	Final NEISiteID	DAS adjustments incremental R&R labor hours, initial, hr	ESP options		Opacity options		
			ESP Opt A incremental R&R labor hours, annual, hr/yr	ESP Opt B incremental recordkeeping labor hours, annual, hr/yr	LK Opacity Opt A labor, hr/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt B labor, hr/yr
100	NEI40686	80	176	32			
102	NEI42341A	80	176	32			
103	NEI9201	80	88	16			
104	NEI11251	80	176	32			
105	NEI45182	80	176	32			
107	NEI47074	80	176	32			
108	NEI33025	80	88	16			
109	NEI32869A	80	264	48	525	525	525
111	NEI45206	80	176	32			
112	NEI34064	80	176	32			
114	NEI26506	80	176	32			
115	NEI26476	80	176	32			
116	NEI8619	80	88	16			
117	NEI42689	80	88	16			
119	NEI46814	80	176	32		525	
120	NEI26495	80	88	16		525	
121	NEI12492	80	176	32			
124	NEI8278	80	176	32			
126	NEI42317	80	176	32			
127	NEI7933	80	264	48		525	525
130	NEI18338	80	176	32			
131	NEI42254	80	176	32			
132	NEI8261	80	264	48			
133	NEI13363	80	88	16			
135	NEI33118	80	88	16			
136	NEI12368	80	176	32			
137	NEI26581	80	352	64			

RTI Code	Final NEISiteID	DAS adjustments incremental R&R labor hours, initial, hr	ESP options		Opacity options		
			ESP Opt A incremental R&R labor hours, annual, hr/yr	ESP Opt B incremental recordkeeping labor hours, annual, hr/yr	LK Opacity Opt A labor, hr/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt B labor, hr/yr
138	NEI18652	80	88	16			
139	NEI42357	80	88	16		525	
140	NEI13340	80	88	16		525	
142	NEI41552	80	264	48			
143	NEI26504	80	176	32			
145	NEI33135	80	176	32			
146	NEI759	80	264	48			
147	NEI6450	80	264	48			
148	NEI46931	80	264	48		1,050	525
149	NEI40488	80	88	16			
150	NEI6273	80	88	16			
151	NEI41252	80	264	48			
152	NEI11338	80	88	16			
153	NEI33043	80					
154	NEI46739	80	352	64			
155	NEI33883	80	88	16			
156	NEI42338	80	264	48			
159	NEI8177	80					
162	NEI46760	80	264	48			
163	NEI8560	80	176	32			
164	NEI42710	80	176	32			
165	NEI41628	80	176	32			
166	NEI41314	80	176	32			
167	NEI34070	80	88	16			
169	NEI33013	80	176	32			
171	NEI18658	80	264	48		1,575	
172	NEI18335	80	176	32			
173	NEI35908	80	88	16			

RTI Code	Final NEISiteID	DAS adjustments incremental R&R labor hours, initial, hr	ESP options		Opacity options		
			ESP Opt A incremental R&R labor hours, annual, hr/yr	ESP Opt B incremental recordkeeping labor hours, annual, hr/yr	LK Opacity Opt A labor, hr/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt B labor, hr/yr
174	NEI40247	80	264	48		525	
175	NEI26514	80	176	32			
176	NEI47104	80	88	16			
177	NEI33887	80	88	16			
178	NEI26309	80	264	48			
179	NEI45474	80	176	32			
180	NEI26471	80	88	16			
181	NEI6057	160	176	32			
182	NEI7181	80	88	16			
183	NEI33103	80	88	16			
184	NEI46817	80	264	48			
185	NEI46599	80	88	16			
186	NEI18334	80	176	32			
188	NEI40600	80	176	32			
189	NEI54342	80	88	16			
190	NEI26491	80	264	48			
195	NEI46835	80	88	16			
196	NEI18660	80	264	48			
197	NEI18657	80	88	16			
198	NEI41565	80	88	16			
199	NEI18390	80	88	16			
200	NEI47077	80	264	48	525		
201	NEI7559	80	88	16			
202	NEI12411	80	88	16			
203	NEI42410	80	176	32			
205	NEI8601	80	88	16			
206	NEI40282	80	264	48			
207	NEI7104	80	88	16			

RTI Code	Final NEISiteID	DAS adjustments incremental R&R labor hours, initial, hr	ESP options		Opacity options		
			ESP Opt A incremental R&R labor hours, annual, hr/yr	ESP Opt B incremental recordkeeping labor hours, annual, hr/yr	LK Opacity Opt A labor, hr/yr	RF Opacity Opt A labor, hr/yr	RF Opacity Opt B labor, hr/yr
208228535	NEI18373	80	264	48		1,050	525
226	NEI33023	80	176	32			
240	NEI26526	80	264	48			
242	NEI34066	80	176	32			
243	NEI8196	80	264	48			
340	NEI46852	80	88	16			
525	NEI8265	80	88	16			
531	NEI8186	80	176	32			
606	NEI47091	80	352	64		525	525
610	NEI6261	80	88	16			
613	NEI11172	80	176	32			
615	NEI40554	80	88	16			
617	NEI42695	80	176	32			
161	NEI7621	80	88	16			
700	NEI42351	80					
106	NEI41599	80	176	32			
141	NEI46750	80					
187	NEI42211	80					
193	NEI39968	80					
241	NEI26382	80					
244	NEI43472	80					
245	NEI18347						
247	NEI33945	80					
304	NEIVA00022	80					
		8,560	16,104	2,928	1,050	7,875	2,625

Table C-2. Energy and Secondary Impacts of the Opacity Options by Facility

LK Opacity Option A/RF Opacity Options A & B									
RTI Code	Final NEISiteID	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy	Secondary SO ₂ , tpy	Secondary CO ₂ e, tpy	Secondary Hg, tpy
100	NEI40686								
102	NEI42341A								
103	NEI9201								
104	NEI11251								
105	NEI45182								
107	NEI47074								
108	NEI33025								
109	NEI32869A	18,161	0.089	0.033	0.29	1.3	3.3	926	0.01
111	NEI45206								
112	NEI34064								
114	NEI26506								
115	NEI26476								
116	NEI8619								
117	NEI42689								
119	NEI46814	16,296	0.080	0.029	0.26	1.2	2.9	831	0.01
120	NEI26495	30,238	0.148	0.054	0.48	2.2	5.4	1,542	0.02
121	NEI12492								
124	NEI8278								
126	NEI42317								
127	NEI7933	22,492	0.110	0.040	0.36	1.6	4.0	1,147	0.01
130	NEI18338								
131	NEI42254								
132	NEI8261								
133	NEI13363								
135	NEI33118								
136	NEI12368								
137	NEI26581								
138	NEI18652								
139	NEI42357	10,534	0.052	0.019	0.17	0.8	1.9	537	0.006

LK Opacity Option A/RF Opacity Options A & B									
RTI Code	Final NEISiteID	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy	Secondary SO ₂ , tpy	Secondary CO ₂ e, tpy	Secondary Hg, tpy
140	NEI13340	15,738	0.077	0.028	0.25	1.1	2.8	803	0.01
142	NEI41552								
143	NEI26504								
145	NEI33135								
146	NEI759								
147	NEI6450								
148	NEI46931	44,613	0.219	0.080	0.71	3.3	8.0	2,275	0.03
149	NEI40488								
150	NEI6273								
151	NEI41252								
152	NEI11338								
153	NEI33043								
154	NEI46739								
155	NEI33883								
156	NEI42338								
159	NEI8177								
162	NEI46760								
163	NEI8560								
164	NEI42710								
165	NEI41628								
166	NEI41314								
167	NEI34070								
169	NEI33013								
171	NEI18658	18,880	0.093	0.034	0.30	1.4	3.4	963	0.01
172	NEI18335								
173	NEI35908								
174	NEI40247	39,013	0.191	0.070	0.62	2.8	7.0	1,990	0.02
175	NEI26514								
176	NEI47104								
177	NEI33887								

LK Opacity Option A/RF Opacity Options A & B									
RTI Code	Final NEISiteID	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy	Secondary SO ₂ , tpy	Secondary CO _{2e} , tpy	Secondary Hg, tpy
178	NEI26309								
179	NEI45474								
180	NEI26471								
181	NEI6057								
182	NEI7181								
183	NEI33103								
184	NEI46817								
185	NEI46599								
186	NEI18334								
188	NEI40600								
189	NEI54342								
190	NEI26491								
195	NEI46835								
196	NEI18660								
197	NEI18657								
198	NEI41565								
199	NEI18390								
200	NEI47077	10,807	0.053	0.019	0.17	0.8	1.9	551	0.007
201	NEI7559								
202	NEI12411								
203	NEI42410								
205	NEI8601								
206	NEI40282								
207	NEI7104								
208228535	NEI18373	65,866	0.323	0.119	1.05	4.8	11.9	3,359	0.04
226	NEI33023								
240	NEI26526								
242	NEI34066								
243	NEI8196								
340	NEI46852								

LK Opacity Option A/RF Opacity Options A & B									
RTI Code	Final NEISiteID	Energy impacts, MMBtu/yr	Secondary PM, tpy	Secondary PM _{2.5} , tpy	Secondary CO, tpy	Secondary NOx, tpy	Secondary SO ₂ , tpy	Secondary CO _{2e} , tpy	Secondary Hg, tpy
525	NEI8265								
531	NEI8186								
606	NEI47091	19,897	0.097	0.036	0.32	1.5	3.6	1,015	0.01
610	NEI6261								
613	NEI11172								
615	NEI40554								
617	NEI42695								
161	NEI7621								
700	NEI42351								
106	NEI41599								
141	NEI46750								
187	NEI42211								
193	NEI39968								
241	NEI26382								
244	NEI43472								
245	NEI18347								
247	NEI33945								
304	NEIVA00022								
		312,536	1.5	0.6	5.0	23	56	15,939	0.2

Appendix D

Emission Factors and Other Factors Used in Secondary Impacts Calculations

Table D-1. Emission Factors for Calculating Secondary Air Impacts

Table D-2. Nationwide Power Plant Efficiency for Calculating Energy Impacts

Table D-3. Fuel Mix for Calculating Secondary Air Impacts

Table D-4. Conversion Factors for Calculating Secondary Air Impacts

Table D-5. Multipliers x Energy Impact (MMBtu/yr) for Secondary Impacts

Table D-1. Emission Factors for Calculating Secondary Air Impacts^{1,2}

Pollutant	Value	Units
PM	1.9	lb/MM ft ³ natural gas
	0.001862745	lb/MMBtu natural gas
	0.03	lb/MMBtu solid, liquid, gaseous fuel
PM _{2.5}	1.9	lb/MM ft ³ natural gas
	0.001862745	lb/MMBtu natural gas
	0.00957	lb/MMBtu solid, liquid, gaseous fuel
CO	84	lb/MM ft ³ natural gas
	0.0824	lb/MMBtu natural gas
	0.02	lb/MMBtu solid fuel
NO _x	100	lb/MM ft ³ natural gas
	0.0980	lb/MMBtu natural gas
	0.37	lb/MMBtu solid fuel
SO ₂	0.6	lb/MM ft ³ natural gas
	0.00059	lb/MMBtu natural gas
	1.2	lb/MMBtu solid fuel
CO ₂	53.06	kg/MMBtu natural gas
	116.98	lb/MMBtu natural gas
	93.28	kg/MMBtu solid fuel
	205.65	lb/MMBtu solid fuel
CH ₄	1.00E-03	kg/MMBtu natural gas
	2.20E-03	lb/MMBtu natural gas
	1.10E-02	kg/MMBtu solid fuel
	2.43E-02	lb/MMBtu solid fuel
N ₂ O	1.00E-04	kg/MMBtu natural gas
	2.20E-04	lb/MMBtu natural gas
	1.60E-03	kg/MMBtu solid fuel
	3.53E-03	lb/MMBtu solid fuel
Hg	2.60E-04	lb/MM ft ³ natural gas
	2.55E-07	lb/MMBtu natural gas
	4.0	lb/Tbtu coal
	0.004	lb/MMBtu coal

1. For natural gas combustion, used AP-42 emission factors for PM, CO, NO_x, SO₂, and Hg and GHG Reporting Rule emission factors for CO₂, CH₄, and N₂O (40 CFR part 98, subpart C, general stationary combustion sources). Assumed 1,020 Btu/ft³ of natural gas in estimating secondary emissions. Also assumed that 100% of PM is PM_{2.5}, based on statement in AP-42 that PM from natural gas combustion is estimated to be less than 1 micron in size.

2. For solid fuel combustion, used NSPS emission factors for PM and SO₂ (40 CFR part 60, subpart Da, coal-fired utility plants), AP-42 emission factors for NO_x and CO (bituminous/subbituminous coal combustion), GHG Reporting Rule emission factors for CO₂, CH₄, and N₂O (40 CFR part 98, subpart C, general stationary combustion sources), and utility NESHAP emission factors for Hg (40 CFR part 63, subpart UUUUU). The NO_x emission factor was based on average of NO_x emission factors for PC dry-bottom wall-fired NSPS boilers burning bituminous (12 lb/ton) and subbituminous (7.4 lb/ton) coal. Assumed 13,000 Btu/lb of coal in estimating NO_x and CO secondary emissions. According to AP-42, the percentage of PM that is PM_{2.5} for dry-bottom coal-fired boilers is 29% with ESP, 53% with FF, and 6% if uncontrolled. Assumed 84% of utility boilers controlled with ESP and 14% with FF, leaving 2% uncontrolled, based on information from EPA document on control of emissions from coal-fired utility boilers.

Table D-2. Nationwide Power Plant Efficiency for Calculating Energy Impacts

Fuel	Heat rate, Btu/kWh	Plant efficiency
Coal	10,415	33%
Oil/natural gas	8,185	42%
Nuclear	10,452	33%
Hydroelectric	9,756	35%
Renewable		
Weighted average ¹		36%

1. Weighted average determined by multiplying power plant efficiencies for each fuel by the fuel mix in Table D-3 below.

Table D-3. Fuel Mix for Calculating Secondary Air Impacts

Fuel	Projected generation for 2020, TWh	Percent of generation	Notes
Coal	1,262	31%	
Oil/natural gas	1,304	32%	
Nuclear	746	18%	No secondary air emissions estimated
Hydroelectric	277	7%	No secondary air emissions estimated
Renewable	481	12%	No secondary air emissions estimated
Other	41	1%	Assumed equivalent to natural gas
Total	4,111		

Notes:

1. Assume electricity generated using the above mix (from IPM Version 5.15 for the year 2020 for reference case), from June 2016 MJB&A Summary of IPM Modeling Results.
2. IPM = EPA Integrated Planning Model, which is a multi-regional, dynamic, deterministic linear programming model of the U.S. electric power sector that "provides forecasts of least- cost capacity expansion, electricity dispatch, and" emission control strategies for meeting energy demand and environmental, "transmission, dispatch, and reliability constraints."

Table D-4. Conversion Factors for Calculating Secondary Air Impacts

Conversion factors	Units
3,415.179	Btu/kWh
2.204623	lb/kg
1,020	Btu/ft ³ natural gas
13,000	Btu/lb coal

**Table D-5. Multipliers x Energy Impact (MMBtu/yr)
for Secondary Impacts**

Pollutant	Ton/MMBtu
PM ¹	4.91E-06
PM _{2.5}	1.77E-06
CO	1.64E-05
NO _x	7.33E-05
SO ₂	1.84E-04
CO ₂	5.07E-02
CH ₄	4.08E-06
N ₂ O	5.77E-07
CO ₂ e ²	5.10E-02
Hg	6.14E-07

1. Example derivation for PM: PM ton/MMBtu =
(lb/MMBtu solid fuel x coal % of generation) +
(lb/MMBtu natural gas x (Oil/natural gas + Other %
of generation))/(2000 lb/ton)

2. Global warming potentials used in calculating CO₂e:
CH₄ = 25, N₂O = 298