April 24, 2020

Department for Environmental Protection
Division for Air Quality
200 Fair Oaks Lane, 1st Floor
Frankfort, Kentucky 40601

Re: Kentucky Smelting Technology, Inc.
Permit # F-15-025 R1
Conditional Major Permit Renewal

Dear Sir or Madam:

Cornerstone Environmental, Health and Safety, Inc. (Cornerstone) is contracted to assist Kentucky Smelting Technology, Inc. (KST) with the submittal of a renewal application for their Conditional Major Permit (#F-15-025 R1). KST was issued a permit renewal on October 26, 2015. The permit expires 5 years after the date of issuance, which is October 26, 2020, unless a timely renewal application is submitted. An application is considered timely if received 6 months prior to expiration date, which would be April 26, 2020.

Summary of Emitting Processes

KST is a secondary aluminum processing plant which processes return aluminum scrap and primary aluminum with alloy materials. Scrap aluminum comes in the form of machining chips, third party scrap, recycled secondary ingot (RSI) and scrap wheels from a neighboring plant. KST provides the molten aluminum back to the neighboring facility (CMWA) for use in their die casting operations. The primary four digit Source Industrial Classification (SIC) code is 3341 and a North American Industry Classification System (NAICS) code of 331314.

To process the secondary and primary aluminum, KST operates 3 natural gas fired melting furnaces. Two furnaces are reverbatory furnaces equipped with a side well for charging aluminum scrap via conveyor. Primary aluminum T-bars and RSI are preheated and directly charged into the main hearth. Nitrogen and Chlorine gas are used as fluxing agents, which are added in the side well through the molten aluminum pump. Exhaust emissions from melting and fluxing in the side well is controlled by a lime-injected baghouse, while natural gas combustion emissions from the hearth are vented to the atmosphere. Particulate emissions from skimming of the main hearth and side well are controlled by the lime-injected baghouse.

The third furnace is a rotary melting furnace for recycling scrap aluminum and dross. The furnace was added in 2013 as a minor modification to the existing permit. Exhaust from the rotary furnace is controlled by a lime-injected baghouse. Kentucky DAQ issued a permit revision on March 3, 2014. All compliance terms and conditions for the new furnace were met with compliance stack tests conducted April 8 - 10, 2014 and August 19 – 20, 2014.

880 Lennox Court, Zionsville, IN 46077
(317) 733-2637 FAX (317) 733-2481
www.corner-enviro.com

Changes Since Issuance of Permit

KST has made no major changes to the facility since Revision 1 to the Conditional Major permit (F-15-025 R1) was issued in November 11, 2018. The only insignificant activity that KST added is the replacement of the existing 713 HP diesel emergency generator with a new 804.3 HP diesel emergency generator. The new generator is subject to the requirements of 40 CFR 63, Subpart ZZZZ *NESHAP for Stationary RICE* and 40 CFR 60 Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*. The new generator was added to permit F-15-025 R1 as Emission #03.

Should you have any question or require additional information please do not hesitate to contact me at (513) 808-4097 or email at jnuckels@corner-enviro.com .

Sincerely,

John Nuckels
Senior Environmental Engineer

Enclosure

cc: Mr. Randy Shafer, KST
2583-13964-01

Section AI.4: Type of Application

Current Status: ☐ Title V ☑ Conditional Major ☐ State-Origin ☐ General Permit ☐ Registration ☐ None

Requested Action: *(check all that apply)*

☐ Name Change	☐ Initial Registration	☐ Significant Revision	☐ Administrative Permit Amendment
☑ Renewal Permit	☐ Revised Registration	☐ Minor Revision	☐ Initial Source-wide OperatingPermit
☐ 502(b)(10)Change	☐ Extension Request	☐ Addition of New Facility	☐ Portable Plant Relocation Notice
☐ Revision	☐ Off Permit Change	☐ Landfill Alternate Compliance Submittal	☐ Modification of Existing Facilities
☐ Ownership Change	☐ Closure		

Requested Status: ☐ Title V ☑ Conditional Major ☐ State-Origin ☐ PSD ☐ NSR ☐ Other: _____

Is the source requesting a limitation of potential emissions? ☑ Yes ☐ No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
☑ Particulate Matter	PM/PM10 less than 90 tpy	☑ Single HAP	HCl less than 9.0 tpy
☐ Volatile Organic Compounds (VOC)		☑ Combined HAPs	Total Combined less than 22.5 tpy
☐ Carbon Monoxide		☐ Air Toxics (40 CFR 68, Subpart F)	
☐ Nitrogen Oxides		☐ Carbon Dioxide	
☐ Sulfur Dioxide		☐ Greenhouse Gases (GHG)	
☐ Lead		☑ Other	D/F less than 15 ug/Mg

For New Construction:

Proposed Start Date of Construction: *(MM/YYYY)* _____ **Proposed Operation Start-Up Date:** *(MM/YYYY)* _____

For Modifications:

Proposed Start Date of Modification: *(MM/YYYY)* _____ **Proposed Operation Start-Up Date:** *(MM/YYYY)* _____

Applicant is seeking coverage under a permit shield. ☐ **Yes** ☐ **No**

Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.

Section AI.5 Other Required Information

Indicate the documents attached as part of this application:

- ☐ DEP7007A Indirect Heat Exchangers and Turbines
- ☑ DEP7007B Manufacturing or Processing Operations
- ☐ DEP7007C Incinerators and Waste Burners
- ☐ DEP7007F Episode Standby Plan
- ☐ DEP7007J Volatile Liquid Storage
- ☐ DEP7007K Surface Coating or Printing Operations
- ☐ DEP7007L Mineral Processes
- ☐ DEP7007M Metal Cleaning Degreasers
- ☑ DEP7007N Source Emissions Profile
- ☐ DEP7007P Perchloroethylene Dry Cleaning Systems
- ☐ DEP7007R Emission Offset Credit
- ☐ DEP7007S Service Stations
- ☐ DEP7007T Metal Plating and Surface Treatment Operations
- ☑ DEP7007V Applicable Requirements and Compliance Activities
- ☐ DEP7007Y Good Engineering Practice and Stack Height Determination
- ☐ DEP7007AA Compliance Schedule for Non-complying Emission Units
- ☐ DEP7007BB Certified Progress Report
- ☐ DEP7007CC Compliance Certification
- ☑ DEP7007DD Insignificant Activities
- ☐ DEP7007EE Internal Combustion Engines
- ☑ DEP7007FF Secondary Aluminum Processing
- ☐ DEP7007GG Control Equipment
- ☐ DEP7007HH Haul Roads
- ☐ Confidentiality Claim
- ☐ Ownership Change Form
- ☐ Secretary of State Certificate
- ☐ Flowcharts or diagrams depicting process
- ☐ Digital Line Graphs (DLG) files of buldings, roads, etc.
- ☐ Site Map
- ☐ Map or drawing depicting location of facility
- ☐ Safety Data Sheet (SDS)
- ☐ Emergency Response Plan
- ☐ Other: _____

Section AI.6: Signature Block

I, the undersigned, hereby certify under penalty of law, that I am a responsible official*, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.

R. B. Shafer	4/23/2020
Authorized Signature	**Date**
Randy Shafer	Plant Manager
Type or Printed Name of Signatory	**Title of Signatory**

*Responsible official as defined by 401 KAR 52:001.

Division for Air Quality
300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007DD

Insignificant Activities

___ Section DD.1: Table of Insignificant Activities
___ Section DD.2: Signature Block
___ Section DD.3: Notes, Comments, and Explanations

Source Name: **Kentucky Smelting Technology, Inc.**

KY EIS (AFS) #: **21- 017-025**

Permit #: **F-15-025**

Agency Interest (AI) ID: **51005**

Date:

Section DD.1: Table of Insignificant Activities

*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3… etc.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
	Paved Roads/Scrap Storage		401 KAR 63:010	
	Aluminum Degassers (Argon gas only)		401 KAR 59:010	
	Dross Storage/Handling		401 KAR 63:010	
	Crucible Operations		401 KAR 63:010	

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
	2 Crucible Preheaters - 1 MMBTU/hr each		None	
	Ladle Preheater - 0.75 MMBTU/hr		None	

Section DD.2: Signature Block

I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions

R. B. Shafer

Authorized Signature

4/23/2020

Date

By:

Randall B. Shafer

Type/Print Name of Siguatory

Plant Manager

Title of Siguatory

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007AI

Administrative Information

___ Section AI.1: Source Information

___ Section AI.2: Applicant Information

___ Section AI.3: Owner Information

___ Section AI.4: Type of Application

___ Section AI.5: Other Required Information

___ Section AI.6: Signature Block

___ Section AI.7: Notes, Comments, and Explanations

Additional Documentation

___ Additional Documentation attached

Source Name: **Kentucky Smelting Technology, Inc.**

KY EIS (AFS) #: **21- 017-00034**

Permit #: **F-15-025**

Agency Interest (AI) ID: **51005**

Date:

Section AI.1: Source Information

Physical Location Address:	**Street:**	140 Bellatato Drive				
	City:	Paris	**County:**	Bourbon	**Zip Code:**	40361
Mailing Address:	**Street or P.O. Box:**	Same				
	City:		**State:**		**Zip Code:**	

Standard Coordinates for Source Physical Location

Longitude: 84.27081 (decimal degrees) **Latitude:** 38.220894 (decimal degrees)

Primary (NAICS) Category: Secondary Aluminum Smelting **Primary NAICS #:** 331314

Classification (SIC) Category: Secondary Production of Aluminum **Primary SIC #:** 3341

Briefly discuss the type of business conducted at this site: Processes aluminum scrap into molten and solid aluminum for customers.

Description of Area Surrounding Source: ☑ Rural Area ☐ Industrial Park ☐ Residential Area ☐ Urban Area ☐ Industrial Area ☐ Commercial Area

Is any part of the source located on federal land? ☐ Yes ☑ No

Number of Employees: 54

Approximate distance to nearest residence or commercial property: *1,300 feet* **Property Area:** **11.0 acres** **Is this source portable?** ☐ Yes ☑ No

What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?

NPDES/KPDES:	☑ Currently Hold	☐ Need	☐ N/A
Solid Waste:	☐ Currently Hold	☐ Need	☐ N/A
RCRA:	☐ Currently Hold	☐ Need	☐ N/A
UST:	☐ Currently Hold	☐ Need	☐ N/A

Type of Regulated Waste Activity: ☐ Mixed Waste Generator ☐ Generator ☐ Recycler ☐ Other: _____ ☐ U.S. Importer of Hazardous Waste ☐ Transporter ☐ Treatment/Storage/Disposal Facility ☐ N/A

Section AI.2: Applicant Information

Applicant Name: Kentucky Smelting Technology, Inc.

Title: (if individual)

Mailing Address:
Street or P.O. Box: 140 Bellafato Drive
City: Paris **State:** Kentucky **Zip Code:** 40361

Email: (if individual)

Phone:

Technical Contact

Name: Randy Shafer

Title: Plant Manager

Mailing Address:
Street or P.O. Box: 140 Bellafato Drive
City: Paris **State:** Kentucky **Zip Code:** 40361

Email: Rshafer@KSTParis.com

Phone: (859) 987-6998 x225

Air Permit Contact for Source

Name: Same as Technical Contact

Title:

Mailing Address:
Street or P.O. Box:
City: **State:** **Zip Code:**

Email:

Phone:

Section AI.3: Owner Information

☐ **Owner same as applicant**

Name: Toyota Tsusho America, Inc

Title:

Mailing Address:
Street or P.O. Box: 702 Triport Road
City: Georgetown **State:** Kentucky **Zip Code:** 40324

Email:

Phone: (502) 867-5060

List names of owners and officers of the company who have an interest in the company of 5% or more.

Name	Position

Section AI.4: Type of Application

Current Status: ☐ Title V ☑ Conditional Major ☐ State-Origin ☐ General Permit ☐ Registration ☐ None

Requested Action: *(check all that apply)*

☐ Name Change	☐ Initial Registration	☐ Significant Revision	☐ Administrative Permit Amendment
☑ Renewal Permit	☐ Revised Registration	☐ Minor Revision	☐ Initial Source-wide OperatingPermit
☐ 502(b)(10)Change	☐ Extension Request	☐ Addition of New Facility	☐ Portable Plant Relocation Notice
☐ Revision	☐ Off Permit Change	☐ Landfill Alternate Compliance Submittal	☐ Modification of Existing Facilities
☐ Ownership Change	☐ Closure		

Requested Status: ☐ Title V ☑ Conditional Major ☐ State-Origin ☐ PSD ☐ NSR ☐ Other: _____

Is the source requesting a limitation of potential emissions? ☑ Yes ☐ No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
☑ Particulate Matter	PM/PM10 less than 90 tpy	☑ Single HAP	HCl less than 9.0 tpy
☐ Volatile Organic Compounds (VOC)		☑ Combined HAPs	Total Combined less than 22.5 tpy
☐ Carbon Monoxide		☐ Air Toxics (40 CFR 68, Subpart F)	
☐ Nitrogen Oxides		☐ Carbon Dioxide	
☐ Sulfur Dioxide		☐ Greenhouse Gases (GHG)	
☐ Lead		☑ Other	D/F less than 15 ug/Mg

For New Construction:

Proposed Start Date of Construction: *(MM/YYYY)* _____ **Proposed Operation Start-Up Date:** *(MM/YYYY)* _____

For Modifications:

Proposed Start Date of Modification: *(MM/YYYY)* _____ **Proposed Operation Start-Up Date:** *(MM/YYYY)* _____

Applicant is seeking coverage under a permit shield. ☐ **Yes** ☐ **No** **Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.**

Section AI.5 Other Required Information

Indicate the documents attached as part of this application:

- ☐ DEP7007A Indirect Heat Exchangers and Turbines
- ☑ DEP7007B Manufacturing or Processing Operations
- ☐ DEP7007C Incinerators and Waste Burners
- ☐ DEP7007F Episode Standby Plan
- ☐ DEP7007J Volatile Liquid Storage
- ☐ DEP7007K Surface Coating or Printing Operations
- ☐ DEP7007L Mineral Processes
- ☐ DEP7007M Metal Cleaning Degreasers
- ☑ DEP7007N Source Emissions Profile
- ☐ DEP7007P Perchloroethylene Dry Cleaning Systems
- ☐ DEP7007R Emission Offset Credit
- ☐ DEP7007S Service Stations
- ☐ DEP7007T Metal Plating and Surface Treatment Operations
- ☑ DEP7007V Applicable Requirements and Compliance Activities
- ☐ DEP7007Y Good Engineering Practice and Stack Height Determination
- ☐ DEP7007AA Compliance Schedule for Non-complying Emission Units
- ☐ DEP7007BB Certified Progress Report
- ☐ DEP7007CC Compliance Certification
- ☑ DEP7007DD Insignificant Activities
- ☐ DEP7007EE Internal Combustion Engines
- ☑ DEP7007FF Secondary Aluminum Processing
- ☐ DEP7007GG Control Equipment
- ☐ DEP7007HH Haul Roads
- ☐ Confidentiality Claim
- ☐ Ownership Change Form
- ☐ Secretary of State Certificate
- ☐ Flowcharts or diagrams depicting process
- ☐ Digital Line Graphs (DLG) files of buldings, roads, etc.
- ☐ Site Map
- ☐ Map or drawing depicting location of facility
- ☐ Safety Data Sheet (SDS)
- ☐ Emergency Response Plan
- ☐ Other: _____

Section AI.6: Signature Block

I, the undersigned, hereby certify under penalty of law, that I am a responsible official*, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.

Authorized Signature	**Date**
Randy Shafer	Plant Manager
Type or Printed Name of Signatory	**Title of Signatory**

*Responsible official as defined by 401 KAR 52:001.

Section AI.7: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007B

Manufacturing or Processing Operations

___ Section B.1: Process Information
___ Section B.2: Materials and Fuel Information
___ Section B.3: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.
___ Attach a flow diagram
___ Attach SDS

Source Name: **Kentucky Smelting Technology, Inc.**
KY EIS (AFS) #: **21- 017-00034**
Permit #: **F-15-025**
Agency Interest (AI) ID: **51005**
Date:

Section B.1: Process Information

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	Is the Process Continuous or Batch?	Number of Batches per 24 Hours *(if applicable)*	Hours per Batch *(if applicable)*
EU 01	Furnace 1	Reverb Furnace		Group 1 Sidewell Furnace	JT Thorpe	77MT	01/2005	Batch	6	4
EU 01	Furnace 2	Reverb Furnace		Group 1 Sidewell Furnace	JT Thorpe	77MT	01/2005	Batch	6	4
EU 01	Rotary	Rotary Furnace		Group 1 Rotary Furnace	Melting Solutions	TR12	11/2013	Batch	6	3

Section B.2: Materials and Fuel Information

**Maximum yearly fuel usage rate only applies if applicant request operating restrictions through federally enforceable limitations.*

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit (tons/hr)	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content (%)	Ash Content (%)
				(Specify Units/hr)				(Specify Units/hr)			(Specify Units)		(Specify Units)		
EU 01	Furnace 1	Aluminum Machining Chips			18.26	Refined Molten Aluminum	17.8	ton/hr	Natural Gas	30	MMBTU/hr	481	MMscf/yr	0	0
		Wheels				Dross	0.46	ton/hr							
		A356 Prime Aluminum													
EU 01	Furnace 2	Aluminum Machining Chips			18.26	Refined Moldten Aluminum	17.8	ton/hr	Natural Gas	30	MMBTU/hr	481	MMscf/yr	0	0
		Wheels				Dross	0.46	ton/hr							
		A356 Prime Aluminum													
EU 01	Rotary	Scrap Aluminum			5.1	Refined Moldten Aluminum	4.1	ton/hr	Natural Gas	14	MMBTU/hr	122.6	MMscf/yr	0	0
		Dross				Salt Cake	1	ton/hr							
		Flux													

Section B.3: Notes, Comments, and Explanations

Division for Air Quality
300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007DD

Insignificant Activities

___ Section DD.1: Table of Insignificant Activities
___ Section DD.2: Signature Block
___ Section DD.3: Notes, Comments, and Explanations

Source Name: **Kentucky Smelting Technology, Inc.**

KY EIS (AFS) #: **21- 017-025**

Permit #: **F-15-025**

Agency Interest (AI) ID: **51005**

Date:

Section DD.1: Table of Insignificant Activities

*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3… etc.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
	Paved Roads/Scrap Storage		401 KAR 63:010	
	Aluminum Degassers (Argon gas only)		401 KAR 59:010	
	Dross Storage/Handling		401 KAR 63:010	
	Crucible Operations		401 KAR 63:010	

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
	2 Crucible Preheaters - 1 MMBTU/hr each		None	
	Ladle Preheater - 0.75 MMBTU/hr		None	

Section DD.2: Signature Block

I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions

By:

Authorized Signature	**Date**
Type/Print Name of Siguatory	**Title of Siguatory**

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007GG

Control Equipment

Additional Documentation

___ Complete Sections GG.1 through GG.12, as applicable

___ Attach manufacturer's specifications for each control device

___ Complete DEP7007AI

Source Name: Kentucky Smelting Technology, Inc.

KY EIS (AFS) #: 21- 017-00034

Permit #: F-15-025

Agency Interest (AI) ID: 51005

Date:

Section GG.1: General Information - Control Equipment

Control Device ID #	Control Device Name	Cost	Manufacturer	Model Name/ Serial #	Date Installed	Inlet Gas Stream Data For All Control Devices					Inlet Gas Stream Data For Condensers, Adsorbers, Afterburners, Incinerators, Oxidizers Only			Equipment Operational Data For All Control Devices		
						Temperature (°F)	Flowrate (scfm @ 68°F)	Average Particle Diameter (μm)	Particle Density (lb/ft³) or Specific Gravity	Gas Density (lb/ft³)	Gas Moisture Content (%)	Gas Composition	Fan Type	Pressure Drop Range (in. H_2O)	Pollutants Collected/ Controlled	Pollutant Removal (%)
BH-1	Lime Injected Baghouse 1		Wheelabrator		1/1/2005	104	46,726								PM, HCl	PM: 99%, HCl: 95%
BH-2	Lime Injected Baghouse 2		ETA Engineering	3715X120	########	140	31,077								PM, HCl	PM: 99%, HCl: 95%

Section GG.2: Flare Source Information

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Flare	Type of Flare (e.g. steam-assisted, air-assisted, nonassisted)	Process Gas Flowrate *(acfm)*	Net Heating Value of Stream(s) (Btu/scf)	Removal Efficiency *(%)*	Flare Rated Capacity *(MMBtu/hr)*

Section GG.3: Cyclone

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Cyclone	Identify Number of Cyclones: Single or Multiple	Identify Type: High-Efficiency, Conventional, or High-Throughput	Inlet Height *(ft)*	Inlet Width *(ft)*	Bottom Cone Height *(ft)*	Body Height *(ft)*	Body Diameter *(ft)*	Dust Outlet Tube Diameter *(ft)*	Gas Outlet Tube Diameter *(ft)*	Vortex Finder Height *(ft)*

Section GG.4: Electrostatic Precipitator (ESP)

Control Device ID #	Identify all Emission Units and Control Devices that Feed to ESP	Identify Type: Dry negative corona, Wet negative corona or Wet positive corona	Number of Stages	Number of Plates per Stage	Plate Spacing *(in)*	ESP Total Width *(ft)*	ESP Total Height *(ft)*	Collection Plate Height *(ft)*	Length of Collection Plate *(ft)*	Particle Migration (Drift) Velocity *(specify units)*	Particle Resistivity *(specify units)*	Primary and Secondary Voltage Across Plates *(volts)*	Primary and Secondary Current *(amperes)*

Section GG.5: Scrubber

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Scrubber	Identify Type of Scrubber: Venturi, Packed Bed, Spray Tower, or Other (specify)	For Venturi Scrubbers:	For Packed Bed Scrubbers:		For Spray Towers:		Identify Type of Flow: Concurrent, Countercurrent, or Crossflow	Length in Direction of Gas Flow *(ft)*	Cross-Sectional Area *(ft^2)*	Venturi Throat Velocity *(ft/s)*	Mist Eliminator			Scrubbing Liquid			
			Identify Throat Type: Fixed or Adjustable	Identify Packing Type	Packing Height *(in)*	Number of Nozzles	Nozzle Pressure *(psig)*					Identify Type: Mesh or Vane	Cross-Sectional Area *(ft^2)*	Pressure Drop *(in. H_2O)*	Chemical Composition	Flowrate *(gal/min)*	Fresh Liquid Makeup Rate *(gal/min)*	Describe Disposal Method of Scrubber Effluent

Section GG.6: Filter

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Filter	Identify Type of Filter Unit: Baghouse, Cartridge Collector, or Other (specify)	Identify Type of Filtering Material: Fabric, Paper, Synthetic, or Other (specify)	Total Filter Area *(ft²)*	Effective Air-to-Filter Ratio *(acfm/ft²)*	Continuous Monitoring Instrumentation (e.g. COMS, BLDS, none)	Additional Materials Introduced into the Control System (e.g. lime, carbon)		Identify Cleaning Method: Shaker, Pulse Air, Reverse Air, Pulse Jet, or Other (specify)	Identify Gas Cooling Method: Ductwork, Heat Exchanger, Bleed-in Air, Water Spray, or Other (specify)	For Ductwork:		For Bleed-in Air:	For Water Spray:
							Material	Injection Rate *(lb/hr)*			Length *(ft)*	Diameter *(ft)*	Flowrate *(scfm @ 68°F)*	Flowrate *(gal/min)*
BH-1	Reverb Furnace 1, Reverb Furnace 2	Lime-injected Baghouse	Nomex			BLDS	Sodium Bicarbonate	10	Shaker	Bleed Air			5,000	
BH-24	Rotary Furnace	Lime-injected Baghouse	Nomex	8,714		BLDS	Sodium Bicarbonate	10	Pulse Jet	Bleed Air			10,000	

Section GG.7: Afterburner/Incinerator/Oxidizer

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Afterburner/Incinerator/ Oxidizer	Identify Type: Afterburner, Incinerator, Oxidizer, or Other (specify)	Number of Burners	Burner Rating *(BTU/hr)*	Dimensions of Combustion Chamber *(specify units)*	Residence Time *(sec)*	Combustion Chamber Temperature *(°F)*	Type of Catalyst (if applicable)	Type of Heat Exchanger (if applicable)	Auxiliary Fuel							Composition and Quantities of Combusted Waste
										Identify Fuel Type	Higher Heating Value *(MMBtu/scf)*	Hourly Fuel Usage *(scf/hr)*	% Sulfur (Maximum)	% Sulfur (Average)	% Ash (Maximum)	% Ash (Average)	

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Afterburner/Incinerator/ Oxidizer	Identify Type: Afterburner, Incinerator, Oxidizer, or Other (specify)	Number of Burners	Burner Rating *(BTU//hr)*	Dimensions of Combustion Chamber *(specify units)*	Residence Time *(sec)*	Combustion Chamber Temperature *(°F)*	Type of Catalyst (if applicable)	Type of Heat Exchanger (if applicable)	Auxiliary Fuel							Composition and Quantities of Combusted Waste
										Identify Fuel Type	Higher Heating Value *(MMBtu/scf)*	Hourly Fuel Usage *(scf/hr)*	% Sulfur (Maximum)	% Sulfur (Average)	% Ash (Maximum)	% Ash (Average)	

Section GG.8: Adsorber

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Adsorber	Identify Adsorbate	Identify Adsorbent: Activated carbon, Activated alumina, Silica Gel, Synthetic Polymers, Zeolite, or Other (specify)	Dimensions of Each Bed				Type of Regeneration: Replacement, Steam, or Other (specify)	Regeneration Time *(minutes)*	Method of Regeneration: Alternate Use of Beds, Source Shutdown, or Other (specify)	Time On-line Before Regeneration *(minutes)*
				Thickness in Direction of Gas Flow *(in)*	Cross-Sectional Area *(in^2)*	Weight of Adsorbent per Bed *(lb)*	Number of Beds				

Section GG.9: Condenser

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Condenser	Identify Type of Condenser: Spray Tower, Jet Ejector, Barometric, Single-Pass Shell-and-Tube, or Multi-Pass Shell-and-Tube (if multi-pass, indicate number of passes)	Identify Type of Coolant: Water, Brine, Liquid Nitrogen, CFC/HFC, or Other (specify)	Coolant Temperature		Coolant Liquid Flowrate *(gpm)*	Coolant Gas Flowrate *(scfm @ 68 °F)*	Condensing Surface Area *(specify units)*	Outlet Gas Temperature *(°F)*	Outlet Gas Composition
				Inlet *(°F)*	Outlet *(°F)*					

Section GG.10: Selective Catalytic Reduction (SCR) / Selective Non-catalytic Reduction (SNCR)

Control Device ID #	Identify all Emission Units and Control Devices that Feed to SCR/SNCR	Type (SCR/SNCR)	Gas Composition	Injection Grid Design (e.g. honeycomb)	Design Temperature Range		Reagent			Maximum Design Ammonia Slip *(ppm)*	SCR Only			
											Catalyst			
					Min *(°F)*	Max *(°F)*	Type	Injection Rate			Composition	Volume *(ft^3)*	Weight *(lb)*	Replacement Schedule
								Min *(lb/hr)*	Max *(lb/hr)*					

Section GG.11: Other Control Equipment

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Control Equipment	**Type of Control Equipment** (provide description and a diagram with dimensions)

Section GG.12: Notes, Comments, and Explanations

Instructions for filling out DEP7007N

SECTION I. Emissions Unit and Emission Point Information

Emission Unit and Emission Point Descriptions

KyEIS ID # for Emission Unit	Enter the KyEIS ID number for the emission unit if known. Otherwise enter a unique 3-character code to identify the emission unit within the plant.
Emission Unit Name	Enter the name or a description of the emission unit. Include the heat input capacity (in MMBtu/hr) for boilers.
Date Constructed	Enter the date the emission unit was constructed, re-constructed, altered, or modified.
HAPs present? (Y/N)	Enter Y if any Hazardous Air Pollutants are emitted at any emission point in this emission unit.
KyEIS ID # for Emission Point	Enter the KyEIS ID number for the emission point if known. Otherwise number the emission points in consecutive order within the emission unit.
Emission Point Name	Enter the name or a description of the emission point process. Include the descriptor "fugitive" for processes that are fugitive emissions.
Source ID	Enter the source emission point or process ID number and/or equipment number.
SCC Code	Enter the Source Classification Code. The division has lists of these codes if you need them.
SCC Units	Enter the process operating rate units for the equation. Each SCC code has an assigned unit, but you may choose to use another unit that is more appropriate to your process. Please underline the units if you are choosing an alternate unit.
Stack #	Enter the number of the stack as listed in Section II of this form through which the emissions generated at this emission point enter the atmosphere.
Fuel Ash Content *(Enter only for combustion sources)*	Enter the ash content of the fuel combusted in the process as a weight percentage only if the emission factor is dependent on the ash content of the fuel.
Fuel Sulfur Content *(Enter only for combustion sources)*	Enter the sulfur content of the fuel combusted in the process as a weight percentage only if the emission factor is dependent on the sulfur content of the fuel.
Fuel Heat Content Ratio *(Enter only for combustion sources)*	Enter the ratio of the actual fuel heat content to the fuel heat content used in AP-42 for calculating emissions. Enter 1 if the fuel heat content is the same as that used in AP-42.
Applicable Regulations	Enter the any state or federal regulations that apply to the emission unit and/or to the emission point.

Maximum Operating Parameters

Hourly Operating Rate (SCC Units/hr)	Enter the maximum hourly operating rate of the emission point in SCC Units per hour based on raw material usage and production rated capacities of the equipment.
Annual Operating Hours (hrs/yr)	Enter the maximum number of hours per year the emission point process can operate.

Permitted Operating Parameters

Hourly Operating Rate (SCC Units/hr)	Enter any federally-enforceable permit limit on the hourly operating rate of the emission point in SCC Units per hour.
Annual Operating Rate (SCC Units/yr)	Enter any federally-enforceable permit limit on the annual operating rate of the emission point.
Annual Operating Hours (hrs/yr)	Enter any federally-enforceable permit limit on the number of hours per year the process can operate.

Emission Factors

Pollutant	Enter the name of the pollutant. Include CAS numbers for Hazardous Air Pollutants.
Emission Factor (lb/SCC Units)	Enter the emission factor for the pollutant in terms of lb of pollutant emitted per SCC Unit.
Emission Factor Basis	Enter the basis for the emission factor. Examples are: Source Stack Test, Material Balance, AP-42 (include chapter or table) or other publication of standard emission factors, Engineering Estimate.

Control Equipment

Collection Efficiency (%)	Enter the effective collection efficiency with which the pollutants are collected at the emission source before being sent to the control device.
Pollutant Overall Efficiency (%)	Enter the overall control efficiency for the pollutant considering collection and control efficiencies for all control devices associated with this emission point. This may be different than the efficiency entered in Section III if there is more than one control device or the collection efficiency is other than 100%.

Hourly and Annual Emissions

Hourly Uncontrolled Unlimited Potential Emissions	Electronic versions of this form should contain a formula in this field to calculate the potential emissions of the process unit with no control devices and no permit limits on operating rate. The emissions can be manually calculated and entered in this form using the following formula: *=Maximum Operating Rate (SCC Units/hr) x Emission Factor (lb/SCC Units)*
Hourly Controlled Limited Potential Emissions	Electronic versions of this form should contain a formula in this field to calculate the potential emissions of the process unit considering control devices and limits on operating rate that are included in permits. The emissions can be manually calculated and entered in this form using the following formula: *=Permitted (or Maximum if no permit limit) Operating Rate (SCC Units/hr) x Emission Factor (lb/SCC Units) x (1-Pollutant Overall Control Efficiency)*
Hourly Allowable	Enter any permit limit on the hourly emission rate of the pollutant from the emission point. If the permit limit is not in lb/hr, convert the allowable to lb/hr and enter.
Annual Uncontrolled Unlimited Potential Emissions	Electronic versions of this form should contain a formula in this field to calculate the potential emissions of the process unit with no control devices and no permit limits on operating rate. The emissions can be manually calculated and entered in this form using the following formula: *=Maximum Operating Rate (SCC Units/hr) x Emission Factor (lb/SCC Units) x Maximum Operating Hours (hr/yr) x 1 ton/2000 lb*

Annual Controlled Limited Potential Emissions Electronic versions of this form should contain a formula in this field to calculate the potential emissions of the process unit with control devices and limits on operating rate that are included in permits. The emissions can be manually calculated and entered in this form using one of the following formulas:
=Permitted (or Maximum if no permit limit) Operating Rate (SCC Units/hr) x Emission Factor (lb/SCC Units) x (1-Pollutant Control Efficiency) x Permitted (or Maximum if no permit limit) Operating Hours (hr/yr) x 1 ton/2000 lb
or
=Permitted Annual Operating Rate (SCC Units/yr) x Emission Factor (lb/SCC Units) x (1-Pollutant Overall Control Efficiency) x 1 ton/2000 lb

Annual Allowable Enter any permit limit on the annual emission rate of the pollutant from the emission point. If the permit limit is not in tons/yr, convert the allowable to tons/yr and enter.

SECTION II. Stack Information

Stack Physical Information

KyEIS ID Enter the Stack ID as listed in the KyEIS if known. If not known, enter a unique number (up to 4 digits) to identify the stack within the plant.

Stack Description Enter a description of the stack including associated emission point ID numbers (up to 25 characters)

Stack Height Enter the vertical distance between the point of discharge and the ground, when it can be identified. If no definable stack height exists, enter a value of zero and supply a value for vent height.

Stack Diameter Enter the inside diameter of a round gas exit point of emission, measured in feet. If the exit is not round, calculate D = 1.128 square root of A; where A = cross-sectional area in square feet and D = equivalent diameter. If the stack is rectangular, specify the dimensions. If no definable stack height exists, enter N/A (Not Applicable).

Vent Height Enter an estimate of the height at which pollutants are released when no definable stack height exists.

Vertical Coordinate Enter the vertical (northing) UTM or longitude coordinate for the point of discharge. The UTM coordinate must be within range for the UTM zone entered for the plant. The longitude coordinate must fall within range for the state.

Horizontal Coordinate Enter the horizontal (easting) UTM or latitude coordinate for the point of discharge. The UTM coordinate must be within range for the UTM zone entered for the plant. The latitude coordinate must fall within range for the state.

Coordinate Collection Method Code Enter the code for the method used for collection UTM or lat/long cooordinates. Use a method and code from the following list:

ADD	Street Segment Geocoding
DOQ	Digital Ortho Image Verified
DRG	Digital Raster Graphic Verified
GP1	Digital GPS +/- 1 meter
G10	Digital GPS +/- 10 meters
G40	GPS Point Average +/- 40 meters
G90	GPS +/- 90 meters
INI	Map Interpolation
SUR	Survey
ZIP	Zip Centroid Geocoding
ZC2	Zip+2 Centroid Geocoding
ZC4	Zip+4 Centroid Geocoding

Stack Gas Stream Data

Flowrate Enter the total volume of exhaust gas released at the operating temperature and normal atmosphere pressure.

Temperature Enter the temperature of the exhaust stream at the stack exit, under normal operating conditions.

Exit Velocity Enter the exhaust gas velocity for the stack. If the actual measurement is not available, use the design or maximum value.

SECTION III. Control Equipment Information

KyEIS ID Enter the KyEIS Control Equipment ID if known. If not known, enter a unique number to identify the equipment within the plant.

Control Equipment Description A brief description (up to 40 characters) of the control equipment.

Manufacturer The manufacturer of the control equipment.

Model Name and Number The manufacturer's model name and/or number of the control equipment.

Date Installed The installation date of the control equipment.

Cost The installation costs of the control equipment.

Inlet Gas Stream Data Enter the requested information about the gas stream entering the control device.

Equipment Physical Data Enter the requested information about the control equipment. Submit this form for each control device even if the control equipment manufacturer's equipment specifications and recommended operating procedures are submitted in place of filling out this part of the form.

Equipment Operational Data Enter the requested information about the operation of the control device, including listing each pollutant that can be controlled by the device and the control efficiency for removing that pollutant from the emission stream as a weight percentage.

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection

DIVISION FOR AIR QUALITY

DEP7007N

Emissions, Stacks, and Controls Information

Applicant Name: Kentucky Smelting Technologies, Inc. Log # _____

SECTION I. Emissions Unit and Emission Point Information

KyEIS ID #	Emissions Unit and Emission Point Descriptions	Maximum Operating Parameters		Permitted Operating Parameters		
		Hourly Operating Rate (SCC Units/hr)	Annual Operating Hours (hrs/yr)	Hourly Operating Rate (ton/hr)	Annual Operating Rate (SCC Units/yr)	Annual Operating Hours (hrs/yr)
	Emission Unit Name: Date Constructed: HAPs present? ☐ Yes ☐ No		8,760			8760
	Emission Point Name: **Two Melting Furnaces** Source ID: EP01 SCC Code: 3-04-004-02 SCC Units: Tons of aluminum charge KyEIS Stack #: Fuel Ash Content: Natural gas Fuel Sulfur Content: Natural gas Fuel Heat Content Ratio: Natural gas Applicable Regulations:	18.26	8,760	18.26		8,760
	Emission Point Name: Source ID: SCC Code: SCC Units: KyEIS Stack #: Fuel Ash Content: Fuel Sulfur Content: Fuel Heat Content Ratio: Applicable Regulations:					

DEP7007N
(continued)

SECTION I. Emission Units and Emission Point Information (continued)

KyEIS ID #	Emission Factors			Control Equipment		Hourly (lb/hr) Emissions			Annual (tons/yr) Emissions		
	Pollutant	Emission Factor (lb/ton)	Emission Factor Basis	Control Equipment Association	Pollutant Overall Efficiency (%)	Uncontrolled Unlimited Potential	Controlled Limited Potential	Allowable	Uncontrolled Unlimited Potential	Controlled Limited Potential	Allowable
	PM	4.3	AP-42	1st control device	99.000%	78.518	3.9259	21.7	343.91	17.20	
	HCl	0.0206	Stack Test	KyEIS Control ID #:	95.000%	0.376156	0.04		1.65	0.16	9
	D/F	2.650E-09	Stack Test	Collection efficiency:	0.000%	2.65E-09	2.65E-09		1.16E-08	1.16E-08	
				2nd control device							
				KyEIS Control ID #:							
				Collection efficiency:							
				1st control device							
				KyEIS Control ID #:							
				Collection efficiency:							
				2nd control device							
				KyEIS Control ID #:							
				Collection efficiency:							

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection

DIVISION FOR AIR QUALITY

DEP7007N

Emissions, Stacks, and Controls Information

Applicant Name: Kentucky Smelting Technologies, Inc. Log # _____

SECTION I. Emissions Unit and Emission Point Information

KyEIS ID #	Emissions Unit and Emission Point Descriptions	Maximum Operating Parameters		Permitted Operating Parameters		
		Hourly Operating Rate (SCC Units/hr)	Annual Operating Hours (hrs/yr)	Hourly Operating Rate (ton/hr)	Annual Operating Rate (SCC Units/yr)	Annual Operating Hours (hrs/yr)
	Plant Wide	Tons/year				
	PM	*30.080*				
	PM10	*19.530*				
	PM2.5	*16.050*				
	SO2	*0.197*				
	NOX	*35.090*				
	CO	*27.530*				
	VOC	*1.770*				
	HCl	*2.050*				
	D/F	*6.88E-10*				
	CO2e	*39482.970*				
	Taken from KST Summary F-15-025 R1					

SECTION I. Emission Units and Emission Point Information (continued)

KyEIS ID #	Emission Factors			Control Equipment		Hourly (lb/hr) Emissions			Annual (tons/yr) Emissions		
	Pollutant	Emission Factor (lb/ton)	Emission Factor Basis	Control Equipment Association	Pollutant Overall Efficiency (%)	Uncontrolled Unlimited Potential	Controlled Limited Potential	Allowable	Uncontrolled Unlimited Potential	Controlled Limited Potential	Allowable
Plant Wide											

SECTION II. Stack Information

KyEIS Stack ID #	Stack Description	Stack Physical Data			Stack Geographic Data			Stack Gas Stream Data		
		Height (ft)	Diameter (ft)	Vent Height (ft)	Vertical Coordinate	Horizontal Coordinate	Coordinate Collection Method Code	Flowrate (acfm)	Temperature (^oF)	Exit Velocity (ft/sec)
	Furnace 1 combustion exhaust	65	5.5	65	4233841.4	738947.7	G10	50,000	250.00	35.00
	Furnace 2 combustion exhaust	65	5.5	65	4233854.7	738948.1	G10	50,000	250.00	35.00
	Wheelabrator Lime-injected Baghouse	45	4	45	4233846.4	738916.44	G10	50,000	104.00	75.00

SECTION III. Control Equipment Information for Cyclone

KyEIS Control ID #	Control Equipment Description	Manufacturer	Model Name and Number	Date Installed	Cost

Inlet Gas Stream Data

Temperature:	Flowrate (scfm at 68°F):	Gas density (lb/ft^3):	Particle density (lb/ft^3) or Specific Gravity:	Average particle diameter (µm): *(or attach a particle size distribution table)*
_____ ° F _____ ° C				

Equipment Physical Data

The control equipment manufacturer's equipment specifications and recommended operating procedures may be submitted in place of this information.

Type of cyclone:
Pick one:
- ☐ Single
- ☐ Multiple

Number of multiclone _____

Pick one:
- ☐ High-efficiency
- ☐ Conventional
- ☐ High-throughput

Dimensions of cyclone (specify units):

Inlet height	_____	Inlet width	_____
Body height	_____	Body diameter	_____
Bottom cone height	_____	Dust outlet tube diameter	_____
Gas outlet tube diameter	_____	Vortex finder height	_____

Equipment Operational Data

Pressure drop across unit (inches water gauge):	Pollutants collected/controlled:	Pollutant removal/destruction efficiency (%):

SECTION III. Control Equipment Information for Electrostatic Precipitator

KyEIS Control ID #	Control Equipment Description	Manufacturer	Model Name and Number	Date Installed	Cost

Inlet Gas Stream Data

Temperature:	Flowrate (scfm at 68°F):	Gas density (lb/ft^3):	Particle density (lb/ft^3) or Specific Gravity:	Average particle diameter (µm): *(or attach a particle size distribution table)*
_____ ° F _____ ° C				

Equipment Physical Data

The control equipment manufacturer's equipment specifications and recommended operating procedures may be submitted in place of this information.

Type of ESP: *Pick one:*	Dimensions of ESP (specify units):	Number of stages:	Number of plates per stage:
☐ Dry, negative corona ☐ Wet, negative corona ☐ Wet, positive corona	Collection plate height _____ Length of collection plate in direction of gas flow _____ ESP total width _____ ESP total height _____		

Particle migration (drift) velocity:	Particle resistivity:	Voltage across plates:

Equipment Operational Data

Pressure drop across unit (inches water gauge):	Pollutants collected/controlled:	Pollutant removal/destruction efficiency (%):

SECTION III. Control Equipment Information for Scrubber

KyEIS Control ID #	Control Equipment Description	Manufacturer	Model Name and Number	Date Installed	Cost

Inlet Gas Stream Data

Temperature:	Flowrate (scfm at 68°F):	Gas density (lb/ft^3):	Particle density (lb/ft^3) or Specific Gravity:	Average particle diameter (µm): *(or attach a particle size distribution table)*
_____ ° F _____ ° C				

Equipment Physical Data

The control equipment manufacturer's equipment specifications and recommended operating procedures may be submitted in place of this information.

Type of scrubber:
- ☐ Venturi — Throat type _____
- ☐ Packed bed — Packing type _____ Packing height (inches) _____
- ☐ Spray tower — Number of nozzles _____ Nozzle pressure (psig) _____
- ☐ Other (specify) _____

Type of Flow:
- ☐ Concurrent
- ☐ Countercurrent
- ☐ Crossflow

Dimensions of scrubber:
_____
Cross-sectional area _____ sq.ft
Venturi throat velocity _____ ft/s

Type of mist eliminator:	Dimensions of mist eliminator: Cross-sectional area _____ sq.ft	Pressure drop across mist eliminator (in. H_2O):
Chemical composition of scrubbing liquid:	Scrubbing liquid flowrate: _____ gal/min Fresh liquid makeup rate: _____ gal/min	Disposal method of scrubber effluent:

Equipment Operational Data

Pressure drop across unit (inches water gauge):	Pollutants collected/controlled:	Pollutant removal/destruction efficiency (%):

SECTION III. Control Equipment Information for Filter

KyEIS Control ID #	Control Equipment Description	Manufacturer	Model Name and Number	Date Installed	Cost
-017-000	*Lime Injected Baghouse*	*Wheelabrator*		*2005.000*	

Inlet Gas Stream Data

Temperature:	Flowrate (scfm at 68°F):	Gas density (lb/ft^3):	Particle density (lb/ft^3) or Specific Gravity:	Average particle diameter (µm): *(or attach a particle size distribution table)*
104 ° F _____ ° C	48,000	NA	NA	NA

Equipment Physical Data

The control equipment manufacturer's equipment specifications and recommended operating procedures may be submitted in place of this information.

Type of filter unit:	Dimensions of filter unit (specify units):	Filtering material:
Baghouse	Filtering area: _____ Unit total width: _____ Unit total height: _____	Nomex

Cleaning method:
- [x] Shaker
- [ ] Pulse Air
- [ ] Reverse Air
- [ ] Pulse Jet
- [ ] Other (specify) _____

Gas cooling method:
- [x] Ductwork: Length 45 ft. Diameter 47 inches
- [ ] Heat Exchanger
- [ ] Bleed-in Air _____ scfm (@ 68° F)
- [ ] Water Spray _____ gpm
- [ ] Other (specify) _____

Equipment Operational Data

Pressure drop across unit (inches water gauge):	Pollutants collected/controlled:	Pollutant removal/destruction efficiency (%):
3-8 inches of water	PM, PM10, D/F, HCl, Lime injection, N0x	99.9% - PM, PM10, 95% HCl, D/F is oxidized with Cl2 in gas stream ahead of the baghouse, lime inject to control HCl.

SECTION III. Control Equipment Information for Afterburner (Incinerator for Air Pollution Control)

KyEIS Control ID #	Control Equipment Description	Manufacturer	Model Name and Number	Date Installed	Cost

Inlet Gas Stream Data

Temperature:	Flowrate (scfm at 68°F):	Gas density (lb/ft^3):	Gas moisture content:	Gas composition:
_____ ° F _____ ° C				

Equipment Physical Data

The control equipment manufacturer's equipment specifications and recommended operating procedures may be submitted in place of this information.

Type of afterburner:	Dimensions of combustion chamber:	Number of burners:	Burner rating (Btu/hr):	Residence time (sec):

Heat exchanger used:	Catalyst used:	Combustion chamber temperature:
☐ Yes Type _____ ☐ No	☐ Yes Type _____ ☐ No	_____ ° F _____ ° C

Type of auxiliary fuel:	Maximum auxiliary fuel usage (specify units):	Composition and quantities of combusted waste:
Higher Heating Value _____ % Sulfur Maximum _____ Average _____ % Ash Maximum _____ Average _____	Hourly _____ Annually	

Equipment Operational Data

Pressure drop across unit (inches water gauge):	Pollutants collected/controlled:	Pollutant removal/destruction efficiency (%):

SECTION III. Control Equipment Information for Adsorber

KyEIS Control ID #	Control Equipment Description	Manufacturer	Model Name and Number	Date Installed	Cost

Inlet Gas Stream Data

Temperature:	Flowrate (scfm at 68°F):	Gas density (lb/ft^3):	Gas moisture content:	Gas composition:
_____ ° F _____ ° C				

Equipment Physical Data

The control equipment manufacturer's equipment specifications and recommended operating procedures may be submitted in place of this information.

Adsorbent:
☐ Activated Charcoal (specify type) _____
☐ Other (specify) _____

Adsorbate(s):

Dimensions of each bed:
Thickness in direction of gas flow _____ inches
Cross-sectional area _____ sq. inches

Number of beds:

Weight of adsorbent per bed (lb):

Type of regeneration:
☐ Replacement ☐ Steam
☐ Other (specify) _____

Method of regeneration:
☐ Alternate use of beds ☐ Source shutdown
☐ Other (specify) _____

Time on-line before regeneration (minutes):

Equipment Operational Data

Pressure drop across unit (inches water gauge):	Pollutants collected/controlled:	Pollutant removal/destruction efficiency (%):

SECTION III. Control Equipment Information for Condenser

KyEIS Control ID #	Control Equipment Description	Manufacturer	Model Name and Number	Date Installed	Cost

Inlet Gas Stream Data

Temperature:	Flowrate (scfm at 68°F):	Gas density (lb/ft^3):	Gas moisture content:	Gas composition:
_____ ° F _____ ° C				

Equipment Physical Data

The control equipment manufacturer's equipment specifications and recommended operating procedures may be submitted in place of this information.

Type of condenser:	Condensing surface area (specify units):	Outlet gas temperature:	Outlet gas composition:
Pick one: ☐ Spray Tower ☐ Jet ejector ☐ Barometric ☐ Single-pass shell-and-tube ☐ Multi-pass shell-and-tube Number of passes: _____		_____ ° F _____ ° C	
Coolant type:	Coolant inlet temperature: _____ ° F _____ ° C	Coolant outlet temperature: _____ ° F _____ ° C	Coolant flowrate: Liquid: _____ gal/min Gas: _____ scfm at 68° F

Equipment Operational Data

Pressure drop across unit (inches water gauge):	Pollutants collected/controlled:	Pollutant removal/destruction efficiency (%):

SECTION III. Control Equipment Information for Other Type of Control Equipment

KyEIS Control ID #	Control Equipment Description	Manufacturer	Model Name and Number	Date Installed	Cost

Inlet Gas Stream Data

Temperature:	Flowrate (scfm at 68°F):	Gas density (lb/ft^3):	Particle density (lb/ft^3) or Specific Gravity:	Average particle diameter (µm): *(or attach a particle size distribution table)*
_____ ° F _____ ° C				

Equipment Physical Data

The control equipment manufacturer's equipment specifications and recommended operating procedures may be submitted in place of this information.

Type of control equipment (give descriptions and a sketch with dimensions):

Equipment Operational Data

Pressure drop across unit (inches water gauge):	Pollutants collected/controlled:	Pollutant removal/destruction efficiency (%):

Instructions for filling out DEP7007N

SECTION I. Emissions Unit and Emission Point Information

Emission Unit and Emission Point Descriptions

KyEIS ID # for Emission Unit	Enter the KyEIS ID number for the emission unit if known. Otherwise enter a unique 3-character code to identify the emission unit within the plant.
Emission Unit Name	Enter the name or a description of the emission unit. Include the heat input capacity (in MMBtu/hr) for boilers.
Date Constructed	Enter the date the emission unit was constructed, re-constructed, altered, or modified.
HAPs present? (Y/N)	Enter Y if any Hazardous Air Pollutants are emitted at any emission point in this emission unit.
KyEIS ID # for Emission Point	Enter the KyEIS ID number for the emission point if known. Otherwise number the emission points in consecutive order within the emission unit.
Emission Point Name	Enter the name or a description of the emission point process. Include the descriptor "fugitive" for processes that are fugitive emissions.
Source ID	Enter the source emission point or process ID number and/or equipment number.
SCC Code	Enter the Source Classification Code. The division has lists of these codes if you need them.
SCC Units	Enter the process operating rate units for the equation. Each SCC code has an assigned unit, but you may choose to use another unit that is more appropriate to your process. Please underline the units if you are choosing an alternate unit.
Stack #	Enter the number of the stack as listed in Section II of this form through which the emissions generated at this emission point enter the atmosphere.
Fuel Ash Content *(Enter only for combustion sources)*	Enter the ash content of the fuel combusted in the process as a weight percentage only if the emission factor is dependent on the ash content of the fuel.
Fuel Sulfur Content *(Enter only for combustion sources)*	Enter the sulfur content of the fuel combusted in the process as a weight percentage only if the emission factor is dependent on the sulfur content of the fuel.
Fuel Heat Content Ratio *(Enter only for combustion sources)*	Enter the ratio of the actual fuel heat content to the fuel heat content used in AP-42 for calculating emissions. Enter 1 if the fuel heat content is the same as that used in AP-42.
Applicable Regulations	Enter the any state or federal regulations that apply to the emission unit and/or to the emission point.

Maximum Operating Parameters

Hourly Operating Rate (SCC Units/hr)	Enter the maximum hourly operating rate of the emission point in SCC Units per hour based on raw material usage and production rated capacities of the equipment.
Annual Operating Hours (hrs/yr)	Enter the maximum number of hours per year the emission point process can operate.

Permitted Operating Parameters

Hourly Operating Rate (SCC Units/hr)	Enter any federally-enforceable permit limit on the hourly operating rate of the emission point in SCC Units per hour.
Annual Operating Rate (SCC Units/yr)	Enter any federally-enforceable permit limit on the annual operating rate of the emission point.
Annual Operating Hours (hrs/yr)	Enter any federally-enforceable permit limit on the number of hours per year the process can operate.

Emission Factors

Pollutant	Enter the name of the pollutant. Include CAS numbers for Hazardous Air Pollutants.
Emission Factor (lb/SCC Units)	Enter the emission factor for the pollutant in terms of lb of pollutant emitted per SCC Unit.
Emission Factor Basis	Enter the basis for the emission factor. Examples are: Source Stack Test, Material Balance, AP-42 (include chapter or table) or other publication of standard emission factors, Engineering Estimate.

Control Equipment

Collection Efficiency (%)	Enter the effective collection efficiency with which the pollutants are collected at the emission source before being sent to the control device.
Pollutant Overall Efficiency (%)	Enter the overall control efficiency for the pollutant considering collection and control efficiencies for all control devices associated with this emission point. This may be different than the efficiency entered in Section III if there is more than one control device or the collection efficiency is other than 100%.

Hourly and Annual Emissions

Hourly Uncontrolled Unlimited Potential Emissions	Electronic versions of this form should contain a formula in this field to calculate the potential emissions of the process unit with no control devices and no permit limits on operating rate. The emissions can be manually calculated and entered in this form using the following formula: *=Maximum Operating Rate (SCC Units/hr) x Emission Factor (lb/SCC Units)*
Hourly Controlled Limited Potential Emissions	Electronic versions of this form should contain a formula in this field to calculate the potential emissions of the process unit considering control devices and limits on operating rate that are included in permits. The emissions can be manually calculated and entered in this form using the following formula: *=Permitted (or Maximum if no permit limit) Operating Rate (SCC Units/hr) x Emission Factor (lb/SCC Units) x (1-Pollutant Overall Control Efficiency)*
Hourly Allowable	Enter any permit limit on the hourly emission rate of the pollutant from the emission point. If the permit limit is not in lb/hr, convert the allowable to lb/hr and enter.
Annual Uncontrolled Unlimited Potential Emissions	Electronic versions of this form should contain a formula in this field to calculate the potential emissions of the process unit with no control devices and no permit limits on operating rate. The emissions can be manually calculated and entered in this form using the following formula: *=Maximum Operating Rate (SCC Units/hr) x Emission Factor (lb/SCC Units) x Maximum Operating Hours (hr/yr) x 1 ton/2000 lb*

Annual Controlled Limited Potential Emissions Electronic versions of this form should contain a formula in this field to calculate the potential emissions of the process unit with control devices and limits on operating rate that are included in permits. The emissions can be manually calculated and entered in this form using one of the following formulas:
=Permitted (or Maximum if no permit limit) Operating Rate (SCC Units/hr) x Emission Factor (lb/SCC Units) x (1-Pollutant Control Efficiency) x Permitted (or Maximum if no permit limit) Operating Hours (hr/yr) x 1 ton/2000 lb
or
=Permitted Annual Operating Rate (SCC Units/yr) x Emission Factor (lb/SCC Units) x (1-Pollutant Overall Control Efficiency) x 1 ton/2000 lb

Annual Allowable Enter any permit limit on the annual emission rate of the pollutant from the emission point. If the permit limit is not in tons/yr, convert the allowable to tons/yr and enter.

SECTION II. Stack Information

Stack Physical Information

KyEIS ID Enter the Stack ID as listed in the KyEIS if known. If not known, enter a unique number (up to 4 digits) to identify the stack within the plant.

Stack Description Enter a description of the stack including associated emission point ID numbers (up to 25 characters)

Stack Height Enter the vertical distance between the point of discharge and the ground, when it can be identified. If no definable stack height exists, enter a value of zero and supply a value for vent height.

Stack Diameter Enter the inside diameter of a round gas exit point of emission, measured in feet. If the exit is not round, calculate D = 1.128 square root of A; where A = cross-sectional area in square feet and D = equivalent diameter. If the stack is rectangular, specify the dimensions. If no definable stack height exists, enter N/A (Not Applicable).

Vent Height Enter an estimate of the height at which pollutants are released when no definable stack height exists.

Vertical Coordinate Enter the vertical (northing) UTM or longitude coordinate for the point of discharge. The UTM coordinate must be within range for the UTM zone entered for the plant. The longitude coordinate must fall within range for the state.

Horizontal Coordinate Enter the horizontal (easting) UTM or latitude coordinate for the point of discharge. The UTM coordinate must be within range for the UTM zone entered for the plant. The latitude coordinate must fall within range for the state.

Coordinate Collection Method Code Enter the code for the method used for collection UTM or lat/long cooordinates. Use a method and code from the following list:

ADD	Street Segment Geocoding
DOQ	Digital Ortho Image Verified
DRG	Digital Raster Graphic Verified
GP1	Digital GPS +/- 1 meter
G10	Digital GPS +/- 10 meters
G40	GPS Point Average +/- 40 meters
G90	GPS +/- 90 meters
INI	Map Interpolation
SUR	Survey
ZIP	Zip Centroid Geocoding
ZC2	Zip+2 Centroid Geocoding
ZC4	Zip+4 Centroid Geocoding

Stack Gas Stream Data

Flowrate Enter the total volume of exhaust gas released at the operating temperature and normal atmosphere pressure.

Temperature Enter the temperature of the exhaust stream at the stack exit, under normal operating conditions.

Exit Velocity Enter the exhaust gas velocity for the stack. If the actual measurement is not available, use the design or maximum value.

SECTION III. Control Equipment Information

KyEIS ID Enter the KyEIS Control Equipment ID if known. If not known, enter a unique number to identify the equipment within the plant.

Control Equipment Description A brief description (up to 40 characters) of the control equipment.

Manufacturer The manufacturer of the control equipment.

Model Name and Number The manufacturer's model name and/or number of the control equipment.

Date Installed The installation date of the control equipment.

Cost The installation costs of the control equipment.

Inlet Gas Stream Data Enter the requested information about the gas stream entering the control device.

Equipment Physical Data Enter the requested information about the control equipment. Submit this form for each control device even if the control equipment manufacturer's equipment specifications and recommended operating procedures are submitted in place of filling out this part of the form.

Equipment Operational Data Enter the requested information about the operation of the control device, including listing each pollutant that can be controlled by the device and the control efficiency for removing that pollutant from the emission stream as a weight percentage.

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection

DIVISION FOR AIR QUALITY

DEP7007N

Emissions, Stacks, and Controls Information

Applicant Name: Kentucky Smelting Technologies, Inc. Log # _____

SECTION I. Emissions Unit and Emission Point Information

KyEIS ID #	Emissions Unit and Emission Point Descriptions	Maximum Operating Parameters		Permitted Operating Parameters		
		Hourly Operating Rate (ton/hr)	Annual Operating Hours (hrs/yr)	Hourly Operating Rate (ton/hr)	Annual Operating Rate (SCC Units/yr)	Annual Operating Hours (hrs/yr)
	Emission Unit Name: Date Constructed: HAPs present? ☐ Yes ☐ No		8,760			8760
	Emission Point Name: **One Rotary Furnace** Source ID: EP01 SCC Code: 3-04-004-02 SCC Units: Tons of aluminum charge KyEIS Stack #: Fuel Ash Content: Natural gas Fuel Sulfur Content: Natural gas Fuel Heat Content Ratio: Natural gas Applicable Regulations:	5.10	8,760	5.10		8,760
	Emission Point Name: Source ID: SCC Code: SCC Units: KyEIS Stack #: Fuel Ash Content: Fuel Sulfur Content: Fuel Heat Content Ratio: Applicable Regulations:					

SECTION I. Emission Units and Emission Point Information (continued)

KyEIS ID #	Emission Factors			Control Equipment		Hourly (lb/hr) Emissions			Annual (tons/yr) Emissions		
	Pollutant	Emission Factor (lb/ton)	Emission Factor Basis	Control Equipment Association	Pollutant Overall Efficiency (%)	Uncontrolled Unlimited Potential	Controlled Limited Potential	Allowable	Uncontrolled Unlimited Potential	Controlled Limited Potential	Allowable
	PM	4.30	AP-42	1st control device	99.90%	21.93	0.022	21.7	96.05	0.10	
	PM10	2.60	AP-42	KyEIS Control ID #:	99.90%	13.26	0.013		58.08	0.06	
	PM2.5	2.16	AP-42	Collection efficiency:	99.90%	11.02	0.011		48.25	0.05	
	VOC	0.20	AP-42		0.00%	1.02	1.020		4.47	4.47	
	HCl	0.11	Stack Test	2nd control device	95.00%	11.22	0.56		49.14	2.46	*9*
	D/F	1.02E-09	Stack Test	KyEIS Control ID #:	0.00%	5.20E-09	5.20E-09		2.28E-08	2.28E-08	
				Collection efficiency:							
				1st control device							
				KyEIS Control ID #:							
				Collection efficiency:							
				2nd control device							
				KyEIS Control ID #:							
				Collection efficiency:							

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection

DIVISION FOR AIR QUALITY

DEP7007N

Emissions, Stacks, and Controls Information

Applicant Name: Kentucky Smelting Technologies, Inc. Log # _____

SECTION I. Emissions Unit and Emission Point Information

KyEIS ID #	Emissions Unit and Emission Point Descriptions	Maximum Operating Parameters		Permitted Operating Parameters		
		Hourly Operating Rate (ton/hr)	Annual Operating Hours (hrs/yr)	Hourly Operating Rate (ton/hr)	Annual Operating Rate (SCC Units/yr)	Annual Operating Hours (hrs/yr)
	Plant Wide	Tons/year				
	PM	*30.080*				
	PM10	*19.530*				
	PM2.5	*16.050*				
	SO2	*0.197*				
	NOX	*35.090*				
	CO	*27.530*				
	VOC	*1.770*				
	HCl	*2.050*				
	D/F	*6.88E-10*				
	CO2e	*39482.970*				
	Taken from KST Summary F-15-025 R1					

SECTION I. Emission Units and Emission Point Information (continued)

KyEIS ID #	Emission Factors			Control Equipment		Hourly (lb/hr) Emissions			Annual (tons/yr) Emissions		
	Pollutant	Emission Factor (lb/ton)	Emission Factor Basis	Control Equipment Association	Pollutant Overall Efficiency (%)	Uncontrolled Unlimited Potential	Controlled Limited Potential	Allowable	Uncontrolled Unlimited Potential	Controlled Limited Potential	Allowable
Plant Wide											

SECTION II. Stack Information

KyEIS Stack ID #	Stack Description	Stack Physical Data			Stack Geographic Data			Stack Gas Stream Data		
		Height (ft)	Diameter (ft)	Vent Height (ft)	Vertical Coordinate	Horizontal Coordinate	Coordinate Collection Method Code	Flowrate (acfm)	Temperature (^{o}F)	Exit Velocity (ft/sec)
	ETA Engineering	50	4		4233873.8	738926.85	G10	35,515	140.00	47.09

SECTION III. Control Equipment Information for Cyclone

KyEIS Control ID #	Control Equipment Description	Manufacturer	Model Name and Number	Date Installed	Cost

Inlet Gas Stream Data

Temperature:	Flowrate (scfm at 68°F):	Gas density (lb/ft^3):	Particle density (lb/ft^3) or Specific Gravity:	Average particle diameter (µm): *(or attach a particle size distribution table)*
_____ ° F _____ ° C				

Equipment Physical Data

The control equipment manufacturer's equipment specifications and recommended operating procedures may be submitted in place of this information.

Type of cyclone:
Pick one:
- ☐ Single
- ☐ Multiple

Number of multiclone _____

Pick one:
- ☐ High-efficiency
- ☐ Conventional
- ☐ High-throughput

Dimensions of cyclone (specify units):

Inlet height	_____	Inlet width	_____
Body height	_____	Body diameter	_____
Bottom cone height	_____	Dust outlet tube diameter	_____
Gas outlet tube diameter	_____	Vortex finder height	_____

Equipment Operational Data

Pressure drop across unit (inches water gauge):	Pollutants collected/controlled:	Pollutant removal/destruction efficiency (%):

SECTION III. Control Equipment Information for Electrostatic Precipitator

KyEIS Control ID #	Control Equipment Description	Manufacturer	Model Name and Number	Date Installed	Cost

Inlet Gas Stream Data

Temperature:	Flowrate (scfm at 68°F):	Gas density (lb/ft^3):	Particle density (lb/ft^3) or Specific Gravity:	Average particle diameter (µm): *(or attach a particle size distribution table)*
_____ ° F _____ ° C				

Equipment Physical Data

The control equipment manufacturer's equipment specifications and recommended operating procedures may be submitted in place of this information.

Type of ESP: *Pick one:*	Dimensions of ESP (specify units):	Number of stages:	Number of plates per stage:
☐ Dry, negative corona ☐ Wet, negative corona ☐ Wet, positive corona	Collection plate height _____ Length of collection plate in direction of gas flow _____ ESP total width _____ ESP total height _____		

Particle migration (drift) velocity:	Particle resistivity:	Voltage across plates:

Equipment Operational Data

Pressure drop across unit (inches water gauge):	Pollutants collected/controlled:	Pollutant removal/destruction efficiency (%):

SECTION III. Control Equipment Information for Scrubber

KyEIS Control ID #	Control Equipment Description	Manufacturer	Model Name and Number	Date Installed	Cost

Inlet Gas Stream Data

Temperature:	Flowrate (scfm at 68°F):	Gas density (lb/ft^3):	Particle density (lb/ft^3) or Specific Gravity:	Average particle diameter (µm): *(or attach a particle size distribution table)*
_____ ° F _____ ° C				

Equipment Physical Data

The control equipment manufacturer's equipment specifications and recommended operating procedures may be submitted in place of this information.

Type of scrubber:
- ☐ Venturi — Throat type _____
- ☐ Packed bed — Packing type _____ Packing height (inches) _____
- ☐ Spray tower — Number of nozzles _____ Nozzle pressure (psig) _____
- ☐ Other (specify) _____

Type of Flow:
- ☐ Concurrent
- ☐ Countercurrent
- ☐ Crossflow

Dimensions of scrubber:
[illegible] _____ ft
Cross-sectional area _____ sq.ft
Venturi throat velocity _____ ft/s

Type of mist eliminator:	Dimensions of mist eliminator: Cross-sectional area _____ sq.ft	Pressure drop across mist eliminator (in. H_2O):
Chemical composition of scrubbing liquid:	Scrubbing liquid flowrate: _____ gal/min Fresh liquid makeup rate: _____ gal/min	Disposal method of scrubber effluent:

Equipment Operational Data

Pressure drop across unit (inches water gauge):	Pollutants collected/controlled:	Pollutant removal/destruction efficiency (%):

SECTION III. Control Equipment Information for Filter

KyEIS Control ID #	Control Equipment Description	Manufacturer	Model Name and Number	Date Installed	Cost
-017-000	*Pulse Jet Baghouse*	*ETA Engineering*	*3715X120*	*January, 2014*	

Inlet Gas Stream Data

Temperature:	Flowrate (scfm at 68°F):	Gas density (lb/ft^3):	Particle density (lb/ft^3) or Specific Gravity:	Average particle diameter (µm): *(or attach a particle size distribution table)*
250 ° F _____ ° C	35,315	0.0005-0.001 gr/dscf		

Equipment Physical Data

The control equipment manufacturer's equipment specifications and recommended operating procedures may be submitted in place of this information.

Type of filter unit:	Dimensions of filter unit (specify units):	Filtering material:
Nomex	Filtering area: 8714 ft2 Unit total width: _____ Unit total height: _____	Nomex

Cleaning method:
- ☐ Shaker
- ☐ Pulse Air
- ☐ Reverse Air
- ☑ Pulse Jet
- ☐ Other (specify) _____

Gas cooling method:
- ☐ Ductwork: Length _____ ft. Diameter _____ inches
- ☐ Heat Exchanger
- ☑ Bleed-in Air _____ scfm (@ 68° F)
- ☐ Water Spray _____ gpm
- ☐ Other (specify) 10,000 acfm bleed-in air

Equipment Operational Data

Pressure drop across unit (inches water gauge):	Pollutants collected/controlled:	Pollutant removal/destruction efficiency (%):
3.32:1	PM, PM10, D/F, HCl, Lime injection, N0x	99.9% - PM, PM10, 95% HCl, D/F is oxidized with Cl2 in gas stream ahead of the baghouse, lime inject to control HCl. N0x 15 lb/hr max

SECTION III. Control Equipment Information for Afterburner (Incinerator for Air Pollution Control)

KyEIS Control ID #	Control Equipment Description	Manufacturer	Model Name and Number	Date Installed	Cost

Inlet Gas Stream Data

Temperature:	Flowrate (scfm at 68°F):	Gas density (lb/ft^3):	Gas moisture content:	Gas composition:
_____ ° F _____ ° C				

Equipment Physical Data

The control equipment manufacturer's equipment specifications and recommended operating procedures may be submitted in place of this information.

Type of afterburner:	Dimensions of combustion chamber:	Number of burners:	Burner rating (Btu/hr):	Residence time (sec):

Heat exchanger used:	Catalyst used:	Combustion chamber temperature:
☐ Yes Type _____ ☐ No	☐ Yes Type _____ ☐ No	_____ ° F _____ ° C

Type of auxiliary fuel:	Maximum auxiliary fuel usage (specify units):	Composition and quantities of combusted waste:
Higher Heating Value _____ % Sulfur Maximum _____ Average _____ % Ash Maximum _____ Average _____	Hourly _____ Annually	

Equipment Operational Data

Pressure drop across unit (inches water gauge):	Pollutants collected/controlled:	Pollutant removal/destruction efficiency (%):

SECTION III. Control Equipment Information for Adsorber

KyEIS Control ID #	Control Equipment Description	Manufacturer	Model Name and Number	Date Installed	Cost

Inlet Gas Stream Data

Temperature:	Flowrate (scfm at 68°F):	Gas density (lb/ft^3):	Gas moisture content:	Gas composition:
_____ ° F _____ ° C				

Equipment Physical Data

The control equipment manufacturer's equipment specifications and recommended operating procedures may be submitted in place of this information.

Adsorbent:
☐ Activated Charcoal (specify type) _____
☐ Other (specify) _____

Adsorbate(s):

Dimensions of each bed:
Thickness in direction of gas flow _____ inches
Cross-sectional area _____ sq. inches

Number of beds:

Weight of adsorbent per bed (lb):

Type of regeneration:
☐ Replacement ☐ Steam
☐ Other (specify) _____

Method of regeneration:
☐ Alternate use of beds ☐ Source shutdown
☐ Other (specify) _____

Time on-line before regeneration (minutes):

Equipment Operational Data

Pressure drop across unit (inches water gauge):	Pollutants collected/controlled:	Pollutant removal/destruction efficiency (%):

SECTION III. Control Equipment Information for Condenser

KyEIS Control ID #	Control Equipment Description	Manufacturer	Model Name and Number	Date Installed	Cost

Inlet Gas Stream Data

Temperature:	Flowrate (scfm at 68°F):	Gas density (lb/ft^3):	Gas moisture content:	Gas composition:
_____ ° F _____ ° C				

Equipment Physical Data

The control equipment manufacturer's equipment specifications and recommended operating procedures may be submitted in place of this information.

Type of condenser:	Condensing surface area (specify units):	Outlet gas temperature:	Outlet gas composition:
Pick one: ☐ Spray Tower ☐ Jet ejector ☐ Barometric ☐ Single-pass shell-and-tube ☐ Multi-pass shell-and-tube Number of passes: _____		_____ ° F _____ ° C	
Coolant type:	Coolant inlet temperature: _____ ° F _____ ° C	Coolant outlet temperature: _____ ° F _____ ° C	Coolant flowrate: Liquid: _____ gal/min Gas: _____ scfm at 68° F

Equipment Operational Data

Pressure drop across unit (inches water gauge):	Pollutants collected/controlled:	Pollutant removal/destruction efficiency (%):

SECTION III. Control Equipment Information for Other Type of Control Equipment

KyEIS Control ID #	Control Equipment Description	Manufacturer	Model Name and Number	Date Installed	Cost

Inlet Gas Stream Data

Temperature:	Flowrate (scfm at 68°F):	Gas density (lb/ft^3):	Particle density (lb/ft^3) or Specific Gravity:	Average particle diameter (µm): *(or attach a particle size distribution table)*
_____ ° F _____ ° C				

Equipment Physical Data

The control equipment manufacturer's equipment specifications and recommended operating procedures may be submitted in place of this information.

Type of control equipment (give descriptions and a sketch with dimensions):

Equipment Operational Data

Pressure drop across unit (inches water gauge):	Pollutants collected/controlled:	Pollutant removal/destruction efficiency (%):

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007V

Applicable Requirements and Compliance Activities

___ Section V.1: Emission and Operating Limitation(s)

___ Section V.2: Monitoring Requirements

___ Section V.3: Recordkeeping Requirements

___ Section V.4: Reporting Requirements

___ Section V.5: Testing Requirements

___ Section V.6: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: **Kentucky Smelting Technology, Inc.**

KY EIS (AFS) #: **21- 017-025**

Permit #: **F-15-025**

Agency Interest (AI) I **51005**

Date:

Section V.1: Emission and Operating Limitation(s)

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EP 01	Furnace 1, 2 and Rotary	40 CFR 63.1505(i)	D/F	15 ug/MG			Stack Testing
EP01	Furnace 1, 2 and Rotary	401 KAR 52:020				Operate lime-injected baghouse at all times in accordance with manufacturer's recommendations while the furnaces are in operation.	

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EP 01	Furnace 1, 2 and Rotary	40 CFR 63.1506(b)				Provide easily visible labels posted at each group 1 furnace.	Monthly monitoring
EP 01	Furnace 1, 2 and Rotary	40 CFR 63.1506(c)				Design and install system for the capture and collection of emissions to meet engineering standards for minimum exhaust rates or facial inlet velocities as contained in the ACGIH Guidelines.	Annual monitoring
EP 01	Furnace 1, 2 and Rotary	40 CFR 63.1506 (d)				Install and operate a device that measures and records the weight of feed/charge or throughput for each operating cycle or time period used in the performance test.	semi-annual calibration
EP 01	Furnace 1, 2 and Rotary	40 CFR 63.1506(m)				Install and operate a bag leak detection system	recordkeeping
EP 01	Furnace 1, 2 and Rotary	40 CFR 63.1506(m)				Maintain 3-hour block average inlet temperature for each fabric filter at or below the average temperature established during the performance test, plus 25F.	recordkeeping

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EP 01	Furnace 1, 2 and Rotary	40 CFR 63.1506(m)				Maintain free flowing lime in the hopper to the feed device at all times and maintain lime feeder setting at the same level established during the performance test.	Monitoring every 8-hr shift
EP 01	Furnace 1, 2 and Rotary	40 CFR 63.1506(m)				Maintain total reactive chlorine flux injection for each operating cycle or time period used in the performance test at or below the average rate established during the performance test.	recordkeeping
EP 01	Furnace 1 and 2	40 CFR 63.1506(m)				Operate each sidewell furnace such that the level of molten metal remains above the top of the passage between the sidewell and the hearth during reactive flux injection.	recordkeeping
EP 01	Furnace 1 and 2	40 CFR 63.1506(m)				Reactive flix is only added in the sidewell	recordkeeping
EP 01	Furnace 1, 2 and Rotary	1 KAR 59:010, Section 3	Opacity	20%			Visual Observation
EP 03	Diesel Emergency Generator	40 CFR 60.4207(b)				diesel fuel meets requirements for non road diesel fuel	recordkeeping

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EP 03	Diesel Emergency Generator	40 CFR 60.4211 (f)				Operating time limits: Emergency situations: No time limit. Non-emergency situations: 50 hours. Maintenance and testing, emergency demand response and non-emergency situations: 100 hours. The 50 hours of operation for non-emergency operations are counted as part of the 100 hours for maintenance and testing and emergency demand response.	recordkeeping
EP 03	Diesel Emergency Generator	40 CFR 60.4211(c)		Engine to be certified to emission standards in 40 CFR 60.4205(b)			Comply by purchasing an engine certified to the emission standard.

Section V.2: Monitoring Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
EP 01	Furnace 1, 2 and Rotary	Opacity	401 KAR 52:030, Section 10	qualitative visible observation	
EP 01	Furnace 1, 2 and Rotary		40 CFR 63.1510(b)		Prepare and implement a written Operation, maintenance and monitoring plan.
EP 01	Furnace 1, 2 and Rotary		40 CFR 63.1510(c)	labeling	Inspect labels on group 1 furnaces at least once per month
EP 01	Furnace 1, 2 and Rotary		40 CFR 63.1510(d)	Capture/collection system	Inspect system at least once every calendar year or or if the alternative to the annual flow measurements is used: A. Daily measurement of capture and collection systems fan's RPMs, or fan amperage B. Static pressure measurement device C. Hotwire anemometer, ultrasonic flow meter, cross-duct pressure differential sensor, venturi pressure differential monitoring or orifice plate.
EP 01	Furnace 1, 2 and Rotary		40 CFR 63.1510(e)	Feed/charge weight	Accuracy of weight measuremt device +-1%. Calibration every 6 months.
EP 01	Furnace 1, 2 and Rotary		40 CFR 63.1510(f)	bag leak detection system	Continuously record output from bag leak sensor. Operated and calibrated following manufacturer's written specifications.
EP 01	Furnace 1, 2 and Rotary		40 CFR 63.1510(h)	fabric filter inlet temperature	Record temperature in 15 minute block averages and calculate and record the average temperature for each 3-hour block period.
EP 01	Furnace 1, 2 and Rotary		40 CFR 63.1510(i)	Lime injection	Inspect each feed hopper or silo at least once each eight-hour period and record results of each inspection.
EP 01	Furnace 1, 2 and Rotary		40 CFR 63.1510(j)	Total reactive flux injection	Install, calibrate, operate and maintain device to continuously measure and record the weight of gaseous or liquid reactive flux injected.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
EP 01	Furnace 1 and 2		40 CFR 63.1510(n)	Sidewell group 1 furnace with add-on air pollution control device	Record in an operating log for each charge of a sidewell furnace that the level of molten metal was above the top of the passage between the sidewell and hearth during reactive flux injection.
EP 03	Emergency Diesel Generator		40 CFR 60.4209(a)	operating hours	Install a non-resettable hour meter prior to the starup of the engine

Section V.3: Recordkeeping Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
EP 01	Furnace 1, 2 and Rotary		401 KAR 52:030, Section 10	Monthly usage rate of materials, Monthly hours of operation for each emission point, Natural gas usage	
EP 01	Furnace 1, 2 and Rotary		401 KAR 52:030, Section 10	Weekly qualitative visible emissions observations	Date, time, initials of observer, whether emissions were observed and any corrective actions taken.
EP 01	Furnace 1, 2 and Rotary		40 CFR 63.1517(b)	bag leak detection system	Total number of operating hours for the emission units during each six month reporting period, records of each alarm, the time of the alarm, the time corrective action was initiated and completed and a brief description of the cause of the alarm and the corrective action(s) taken.
EP 01	Furnace 1, 2 and Rotary		40 CFR 63.1517(b)	baghouse inlet temperatures	Records of 15-minute block average inlet temperatures for each lime injected baghouse, inlcuding any period when the 3-hour block average temperature exceeds the compliant operating parameter value with a brief explanation of the cause of the excursion and the corrective action taken.
EP 01	Furnace 1, 2 and Rotary		40 CFR 63.1517(b)	lime injection	Records of inspection at lease once every etight-hour period verifying that lime is present in the feeder hopper or silo and flowing, including any inspection where blockage is found, with a brief explanation of the cause of the blockage and the corrective action taken, and records of inpsections at least once every four-hour period for the subsequent three days.
EP 01	Furnace 1, 2 and Rotary		40 CFR 63.1517(b)	reactive flux injection	Records of 15-minute block average weights of gaseous or liquid reactive flux injection, total reactive flux injection rate and calculations, including records of any period the rate exceeds the compliant operating operating parameter value.
EP 01	Furnace 1, 2 and Rotary		40 CFR 63.1517(b)	feed/charge weights	Records of feed/charge (or throughput) weights for each operating cycle or time period used in the performance test.
EP 01	Furnace 1, 2 and Rotary		40 CFR 63.1517(b)	sidewell furnace operating logs	Operating logs for each groupt 1 sidewell furnace with add-on pollution control devices documenting conformance with operating standards for maintaining the level of molten metal above the top of the passage between the sidewell and hearth during reactive flux injection and for only adding reactive flux to the sidewell.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
EP 01	Furnace 1, 2 and Rotary		40 CFR 63.1517(b)	capture/collection system	Records of any annual inspection of emissions capture/collection and closed vent sytems, or if the alternative to the annual flow measurements is used, records of differential pressure; fan RMP or fan amperage; static pressure measurements; or duct centerline velocity using hotwire anemometer, ultrasonic flow meter, cross duct pressure differential sensor, venture pressure differential monitoring or orifice plate equipped with an associated thermocouple as appropriate.
EP 03	Emergency Diesel Generator		40 CFR 60.4214(b)		Records of the operation of the engine in emergency and non-emergency service that is recorded through the non-resettable hour meter. The permittee shall record the time of operation of the engine and the reason the engine was in operation at that time.

Section V.4: Reporting Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
EP 01	Furnace 1, 2 and Rotary		40 CFR 63.1516(b)	Excess emisisons/summary report	Submit semiannual reports within 60 days after the end of each 6-month period.

Section V.5: Testing Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Tested	Description of Testing
EP 01	Furnace 1, 2 and Rotary	D/F	40 CFR 63.1512(d), 40 CFR 63.1511(c)	Feed/charge weight, Baghouse Inlet gas temperature, Flux injection rate, Lime injection	EPA Methtods 1, 2, 3, 4, 23

Section V.6: Notes, Comments, and Explanations