

**MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY  
AIR QUALITY DIVISION**

July 21, 2023

**PERMIT TO INSTALL  
36-12N**

**ISSUED TO**  
General Motors-Saginaw Metal Casting Operations

**LOCATED AT**  
1629 North Washington Avenue  
Saginaw, Michigan 48605

**IN THE COUNTY OF**  
Saginaw

**STATE REGISTRATION NUMBER**  
B1991

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environment, Great Lakes, and Energy. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: <b>June 26, 2023</b>	
DATE PERMIT TO INSTALL APPROVED: <b>July 21, 2023</b>	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

## PERMIT TO INSTALL

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## COMMON ACRONYMS

AQD	Air Quality Division
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COMS	Continuous Opacity Monitoring System
Department/department/EGLE	Michigan Department of Environment, Great Lakes, and Energy
EU	Emission Unit
FG	Flexible Group
GACS	Gallons of Applied Coating Solids
GC	General Condition
GHGs	Greenhouse Gases
HVLP	High Volume Low Pressure*
ID	Identification
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MAERS	Michigan Air Emissions Reporting System
MAP	Malfunction Abatement Plan
MSDS	Material Safety Data Sheet
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PS	Performance Specification
PSD	Prevention of Significant Deterioration
PTE	Permanent Total Enclosure
PTI	Permit to Install
RACT	Reasonable Available Control Technology
ROP	Renewable Operating Permit
SC	Special Condition
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SRN	State Registration Number
TBD	To Be Determined
TEQ	Toxicity Equivalence Quotient
USEPA/EPA	United States Environmental Protection Agency
VE	Visible Emissions

\*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

### POLLUTANT / MEASUREMENT ABBREVIATIONS

acfm	Actual cubic feet per minute
BTU	British Thermal Unit
°C	Degrees Celsius
CO	Carbon Monoxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent
dscf	Dry standard cubic foot
dscm	Dry standard cubic meter
°F	Degrees Fahrenheit
gr	Grains
HAP	Hazardous Air Pollutant
Hg	Mercury
hr	Hour
HP	Horsepower
H <sub>2</sub> S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO <sub>x</sub>	Oxides of Nitrogen
ng	Nanogram
PM	Particulate Matter
PM10	Particulate Matter equal to or less than 10 microns in diameter
PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
pph	Pounds per hour
ppm	Parts per million
ppmv	Parts per million by volume
ppmw	Parts per million by weight
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
scf	Standard cubic feet
sec	Seconds
SO <sub>2</sub>	Sulfur Dioxide
TAC	Toxic Air Contaminant
Temp	Temperature
THC	Total Hydrocarbons
tpy	Tons per year
µg	Microgram
µm	Micrometer or Micron
VOC	Volatile Organic Compounds
yr	Year

## GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal condition or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of Rule 301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with Rule 303 (R 336.1303). **(R 336.1301)**
  - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
  - b) A visible emission limit specified by an applicable federal new source performance standard.
  - c) A visible emission limit specified as a condition of this Permit to Install.
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

**EMISSION UNIT SPECIAL CONDITIONS**

**EMISSION UNIT SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EU-6ML-EF-02	Exhaust to Well #1 and #2 furnace (Open ended duct at Launder, #1 and #2 furnace)	10/26/1994	FG-FACILITYPM
EU-6ML-GV-01	Aluminum Reverberatory Furnace #1 (West)	10/26/1994	FG-6ML-ALMELT FG-FACILITYPM
EU-6ML-GV-02	Aluminum Reverberatory Furnace #2 (East)	10/26/1994	FG-6ML-ALMELT FG-FACILITYPM
EU-PSANDALUMINUM	<u>Molten Aluminum Supply</u> – Two natural gas-fired aluminum melting/holding furnace for aluminum/alloy production using “clean charge” with flux addition and drossing and degassing well (argon). For each furnace, reverberatory design melt heat input rate 40 million British thermal units per hour (MMBtu/hr) for 6 tons/hr melt rate and 20 MMBtu/hr heat input in holding operational mode. Electrically heated launder system vented in-plant. Electrically heated furnace with pump well where metal is pumped to the molds, with degassing well (argon) vented in-plant.	2/10/2015 07/2015	FG-FACILITYPM
EU-PSANDPROCESS	<u>Sand Processing</u> – 220 ton new sand storage silo with bin vent filter receives sand via blower truck and two 30 ton pre-reclaim sand silos receive process sand recovered in the facility. Sand from both silos is transported to two natural gas fired fluidized bed sand reclaim systems (sand reclaim furnace, sand cooler, sand screen, and deduster) (design heat input rate of 22 MMBtu/hr - total for two sand reclaim systems) for cleaning and preparation of sand. From there, sand is transferred to the prepared sand silo. PM emissions from the pre-reclaim sand silo, sand transfer system, fluidized bed sand reclaim, and prepared sand silo are controlled by two 31,200 scfm fabric filter collectors, one for each sand reclaim system.	2/12/2015 07/2015 TBD	FG-FACILITYPM
EU-PSANDCOREROOM	<u>Core Room Processes</u> Sand Handling and Mixing – sand from the prepared sand silo is pneumatically transported to the six core machine sand hoppers. The individual sand hoppers feed the sand mixers where polyurethane resin is mixed with the sand. Emissions from the sand hoppers and sand mixers are collected for control through a 15,000 scfm cartridge collector. Core Making – six cold box core machines ventilated at 25,000 scfm to a cyclone and a	2/10/2015	FG-FACILITYPM

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
	<p>packed tower acid scrubber. Dimethyl isopropylamine (DMIPA) or Dimethylpropylamine (DMPA) is used to cure the mixed sand, in the core making machines.</p> <p>Core Box Tooling Maintenance – includes the use of a core release chemical, metal cleaner, a high pressure water wash, and core box washing station. High pressure water wash emissions are controlled with a mist collector and are vented in-plant.</p> <p>Cylinder Liner Cleaning and Heating – cleaning by shot blast with a 2,500 scfm cartridge collector control vented in-plant; induction heating used to preheat cylinder liners prior to contact with molten aluminum, vented in-plant.</p> <p>Final Mold Assembly - physical assembly of the parts of the final mold/core package. The assembly process includes reusable chill plates. Emissions are negligible and vented in-plant.</p> <p>Core Room Fugitive Emissions – general core handling.</p>		
EU-PSANDCASTLINE	<p><u>Cast Line processes</u>                      Pouring and Cooling - Pouring and cooling of castings in the molds, mold cooling, and chill plate cleaning.                      Shakeout - Separation of cooled castings from the sand molds. 10 MMBtu/hr natural gas-fired duct burner.</p>	2/10/2015 07/2015 TBD	FG-FACILITYPM
EU-PSANDSH	<p>EU-PSANDSH (PSAND Sand Handling) consists of the scrap core sand handling equipment downstream of EU-PSANDCASTLINE, EU-PSANDCORERROOM and EU-FINISH. It includes the Pre-Crusher, Didion Drum, Sand Transport Hoppers, and Pre-Reclaim Sand Silo. Most of the scrap core sand process in EU-PSANDSH comes from the shakeout system at the end of EU-PSANDCASTLINE. The rest of the scrap core sand processed in EU-PSANDSH, coming from EU-PSANDCORERROOM and EU-FINISH, are introduced through the Pre-Crusher. Scrap core sand is then broken down in the Didion Drum, before being conveyed to sand hoppers and pneumatically transferred to the Pre-Reclaim Sand Silo of EU-PSANDPROCESS.</p>	2/10/2015 07/2015 TBD	FG-FACILITYPM
EU-FINISH	<p><u>Finishing</u> – (precision sand and semi-permanent molding operations) processes to remove excess metal and residual sand from the castings including Deflash/Decore/Degate (precision sand and semi-permanent mold) and shot blast. Emissions are controlled by cartridge collectors with air flow rates of 12,800 scfm total for the</p>	2/10/2015 07/2015	FG-FACILITYPM



Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
	Deflash, Decore, and Degate enclosures from precision sand and semi-permanent mold operations. 1,500 scfm for the shot blast cabinet associated with precision sand finishing.		
EU-SPMALUMINUM	<u>Molten Aluminum Supply</u> - natural gas-fired stack melter aluminum melting/holding furnace for aluminum/alloy production using "clean charge" with flux addition, drossing, and degassing well (argon). Furnace has a design heat input rate of 14.5 MMBtu/hr gas-fired for 5.5 tons/hr melt rate and 4.25 MMBtu/hr heat input rate in holding operational mode. Electrically heated launder systems vented in-plant. Four electric Ladle furnaces and electric holding furnace also with degassing (argon) capability and flux addition, vented in-plant.	3/11/2015 07/2015	FG-FACILITYPM
EU-SPMPROCESSAND	<p><u>Sand Processing</u> - 120 ton new sand storage silo with bin vent filter receives sand via blower truck and a 30 ton pre-reclaim sand silo receives process sand recovered in the facility. Sand from both silos is transported to the natural gas fired fluidized bed sand reclaim process system (sand reclaim furnace, sand cooler, sand screen, and deduster) (design heat input rate is 4 MMBtu/hr) for cleaning and preparation of sand. From there, sand is transferred to the prepared sand silo.</p> <p>Top core, scrap cores, broken cores and process sand collected from EU-SPMCASTLINE and EU-SPMCASTLINE4 and scrap cores and process sand from EU-SPMCOREROOM are collected in a bin/hopper and taken to a Sand Load Out Station for reclaim or returned to the process by the receiving dump chute of EU-SPMPROCESSAND for transport by conveyor to the hopper/storage silo of EU-SPMPROCESSAND.</p> <p>PM emissions from these sand handling processes and sand handling transfer points including the pre-reclaim sand silo, sand transfer system, fluidized bed sand reclaim, and prepared sand silo in EU-SPMPROCESSAND are controlled by a single 34,000 scfm fabric filter collector. There is no emission control on the remaining sand handling or transfer points (bin/hopper, Sand Load Out Station, receiving dump chute).</p>	12/10/2014 07/2015 TBD	FG-FACILITYPM

<p>EU-SPMCOREROOM</p>	<p><u>Core Room Processes</u>                  Sand Handling &amp; Mixing - via both enclosed conveyor and pneumatic systems prepared sand is transported to and received into the central sand hopper and mixer located above the core machines.</p> <p>Sand and two-part epoxy acrylic resin mixing.</p> <p>Emissions from the final sand transport, sand hopper, and mixer are controlled by a 5,000 scfm cartridge collector.</p> <p>Core Making – sulfur dioxide co-reactant injection system which supplies mixed sulfur dioxide for the three cold box core machines. Sulfur dioxide is stored in 2,000 pound compressed gas cylinders.</p> <p>Emissions from the core making machines are controlled by a cyclone and a packed tower caustic scrubber with a 20,000 scfm exhaust gas flow rate.</p> <p>Core Box Tooling Maintenance – includes the use of a core release chemical, metal cleaner, a high pressure water wash and core box washing station. High pressure water wash and core box washing station is carried out within EU-PSANDCOREROOM.</p> <p>Scrap cores and process sand are placed in bins or hoppers and taken to a Sand Load Out Station for reclaim. Sand is added to the process by the receiving dump chute of EU-SPMPROCESSAND.</p> <p>Core Room Fugitive Emissions – storage of completed cores in a core buffer area produces off-gassing emissions (core making fugitives) which are released to the general ventilation system for the building.</p>	<p>3/11/2015                  07/2015</p>	<p>FG-FACILITYPM</p>
<p>EU-SPMCASTLINE</p>	<p><u>Cast Lines</u> – Three cast lines with a nominal maximum combined production rate of 106 castings per hour (2,460 castings per day) and a nominal maximum production rate of 53 castings per hour on any single casting line.</p> <p>The cast lines consist of the following:  <i>Section #1:</i> (3 modular units) making a final mold; mold filling; initial cooling; extraction; and cut sprue. Making a final mold includes mold and core assembly and mold heating with natural gas-fired 16 MMBtu/hr (total heat input rate) burners/torches. Mold filling is conducted by gravity pour. Initial cooling and solidification of the molten metal occurs inside the mold. Extraction of the casting (including sand cores) from the steel mold is completed by the casting extraction unload robot. Top core and down sprue removal.</p>	<p>3/11/2015                  07/2015</p>	<p>FG-FACILITYPM</p>

	<p>Additional cooling and complete solidification occur in the casting solidification buffer area. Sprue, risers, runners, and other internal scrap are collected and remelted.</p> <p><i>Section #2:</i> (3 identical modular units) extended casting cooling in the cooling garage.</p> <p><i>Section #3:</i> (2 identical modular units) Deflash; Decore; Degate. Finishing operations include the removal of excess metal and sand from the casting. Metal removed from the casting is collected and remelted.</p> <p>Emissions control for Section #1 and Section #2 is three 60,000 scfm fabric filter collectors (one for each cast line). Combined emissions from Section #3 of both cast lines and precision sand finishing operations are routed to a 12,800 scfm cartridge collector (EU-FINISH).</p> <p>Process and scrap sand generated from SPMCASTLINE is collected and transported as described in EU-SPMPROCESSAND.</p> <p>Mold Preparation – Offline mold preparation benches and oven with steel mold heating using natural gas fired burners. Total heat input rate of 3.5 MMBtu/hr.</p> <p>Mold Coating Repair – Three coating repair booths including a decoating process using inert media. Coating emissions are controlled by a 13,000 scfm cartridge collector. Decoating emissions are routed to a 7,500 scfm cartridge collector, vented in-plant.</p>		
EU-SPMCASTLINE4	<p><u>Cast Line</u> – One carousel cast line with a nominal maximum production rate of 50 molds per hour.</p> <p>The cast line consists of the following:  <i>Section #1:</i> making a final mold; mold filling; initial cooling; extraction; and cut sprue.                  Making a final mold includes mold and core assembly and mold heating with natural gas fired 16 MMBtu/hr (total heat input rate) burners/torches. Mold filling is by gravity pour. Initial cooling and solidification of the molten metal occurs inside the mold. Extraction of the casting (including sand cores) from the steel mold is completed by the casting extraction unload robot. Core and down sprue removal. Additional cooling and complete solidification occur in the casting solidification buffer area. Sprue, risers, runners, and other internal scrap are collected and remelted.  <i>Section #2:</i> extended casting cooling in a cooling area.  <i>Section #3:</i> Deflash; Decore; Degate. Finishing operations include the removal of excess metal and sand from the casting. Excess metal is</p>	8/28/2017	FG-FACILITYPM

	<p>collected and remelted.</p> <p>Emissions control for Section #1 and Section #2 is 2 – 30,000 scfm fabric filter collectors.</p> <p>Process and scrap sand generated from EU-SPMCASTLINE4 is collected and transported as described in EU-SPMPROCESSAND.</p>		
EU-PREMACHINING	<p>Multiple stations for machining to remove excess metal and for surface preparation (includes the use of a coolant); localized exhaust at each machine, 2,000 scfm with mist eliminator, released to general in-plant exhaust;</p> <p>Casting washing using water jets and a cleaning solution; localized exhaust at each machine, 2,000 cfm with mist eliminator, released to general in-plant exhaust</p> <p>Casting leak testing using compressed air.</p>	2/10/2015	FG-FACILITYPM
EU-MACHASM	<p>Multiple stations for machining to remove excess metal and for surface preparation (includes the use of a coolant); localized exhaust at each machine, 2,000 scfm with mist eliminator, released to general in-plant exhaust;</p> <p>Casting washing using water jets and a cleaning solution; localized exhaust at each machine, 2,000 cfm with mist eliminator, released to general in-plant exhaust;</p> <p>Casting leak testing using compressed air;</p> <p>Dry machining and assembly operations.</p>	8/28/2017	FG-FACILITYPM

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

**EU-PSANDALUMINUM  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Molten Aluminum Supply – Two natural gas-fired aluminum melting/holding furnace for aluminum/alloy production using “clean charge” with flux addition and drossing and degassing well (argon). For each furnace, reverberatory design melt heat input rate 40 MMBtu/hr for 6 tons/hr melt rate and 20 MMBtu/hr heat input in holding operational mode. Electrically heated launder system vented in-plant. Electrically heated furnace with pump well where metal is pumped to the molds, with degassing well (argon) vented in-plant.

**Flexible Group ID:** FG-FACILITYPM

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. PM	2.50 pph	Hourly charging/holding	Melting/holding furnace	SC V.1	R 336.1331(1)(c)
2. PM10	2.16 pph	Hourly charging/holding	Melting/holding furnace	SC V.1	40 CFR 52.21(c) & (d)
3. PM2.5	2.16 pph	Hourly charging/holding	Melting/holding furnace	SC V.1	40 CFR 52.21(c) & (d)
4. PM	5.07 pph	Hourly fluxing/drossing	Melting/holding furnace	SC V.1	R 336.1331(1)(c)
5. PM10	4.31 pph	Hourly fluxing/drossing	Melting/holding furnace	SC V.1	40 CFR 52.21(c) & (d)
6. PM2.5	4.31 pph	Hourly fluxing/drossing	Melting/holding furnace	SC V.1	40 CFR 52.21(c) & (d)
7. VOC	0.60 pph	Hourly	Melting/holding furnace	SC V.1	R 336.1702
8. NO <sub>x</sub>	3.92 pph	Hourly	Melting/holding furnace	SC V.1	40 CFR 52.21(c) & (d)
9. NO <sub>x</sub>	13.78 tpy	12-month rolling time period as determined at the end of each calendar month	Melting/holding furnace	SC VI.1c	R 336.1205, 40 CFR 52.21(c) & (d)
10. CO	3.29 pph	Hourly	Melting/holding furnace	SC V.1	40 CFR 52.21(c)

**II. MATERIAL LIMIT(S)**

<b>Material</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. Metal feed/charge rate	6 tons per hour	Monthly average	Melting/holding furnace	SC VI.1e	R 336.1205(1)

Material	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
2. Flux usage rate (total injection flux and broadcast flux)	11,316 pounds per year	12-month rolling time period as determined at the end of each calendar month	Melting/holding furnace, launder, and pump well	SC VI.1f	R 336.1205(1) R 336.1225

3. The permittee shall not melt in EU-PSANDALUMINUM any material other than clean charge, customer returns, or internal scrap, as defined by 40 CFR Part 63, Subpart RRR. This condition is necessary to avoid requirements of 40 CFR Part 63, Subpart RRR, National Emission Standards for Secondary Aluminum Production. **(R 336.1224, R 336.1225, 40 CFR Part 63, Subpart RRR)**

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall not operate the furnaces in EU-PSANDALUMINUM as a melting furnace for more than a combined total of 5,300 hours per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205, 40 CFR 52.21(c) & (d))**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The design maximum heat input ratings of each natural gas-fired melting/holding furnace in EU-PSANDALUMINUM shall not exceed 40 MMBtu/hr during charging/melting or 20 MMBtu/hr when operated in holding only furnace mode. **(R 336.1205(1)(a))**

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Upon request from the AQD Supervisor, the permittee shall verify PM, PM10, PM2.5, NO<sub>x</sub>, VOC, and/or CO emission rates from EU-PSANDALUMINUM, by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A
PM10 / PM2.5	40 CFR Part 51, Appendix M
NO <sub>x</sub>	40 CFR Part 60, Appendix A
VOCs	40 CFR Part 60, Appendix A
CO	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall monitor and record, in a satisfactory manner, all data as specified in the following table. (R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21)

Equipment	Parameter	Time Frame Basis
a) Furnaces in EU-PSANDALUMINUM	Hours of operation of each furnace and the sum of the furnaces as a melting furnace	Monthly and 12-month rolling time period as determined at the end of each calendar month
b) Furnaces in EU-PSANDALUMINUM	Natural gas usage rate of each furnace and the sum of the furnaces	Monthly and 12-month rolling time period as determined at the end of each calendar month
c) Furnaces in EU-PSANDALUMINUM	NO <sub>x</sub> emissions in tpy calculated using emission factors derived from performance testing	Monthly and 12-month rolling time period as determined at the end of each calendar month
d) Furnaces in EU-PSANDALUMINUM	PM, PM10, and PM2.5 emissions in pph	Monthly average
e) Furnaces in EU-PSANDALUMINUM	Metal feed/charge rate	Monthly average
f) Melting/holding furnace, launder, and pump well	Flux usage rate (total injection flux and broadcast flux)	Monthly and 12-month rolling time period as determined at the end of each calendar month

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV-Z02-GV-1	60	80	40 CFR 52.21(c) & (d)
2. SV-Z02-GV-2	60	80	40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**EU-PSANDPROCESS  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Sand Processing – 220-ton new sand storage silo with bin vent filter receives sand via blower truck and two 30 ton pre-reclaim sand silos receive process sand recovered in the facility. Sand from both silos is transported to two natural gas fired fluidized bed sand reclaim systems (sand reclaim furnace, sand cooler, sand screen, and deduster) (design heat input rate of 22 MMBtu/hr - total for two sand reclaim systems) for cleaning and preparation of sand. From there, sand is transferred to the prepared sand silo.

**Flexible Group ID:** FG-FACILITYPM

**POLLUTION CONTROL EQUIPMENT**

The new sand storage silo has a bin vent filter. PM emissions from the pre-reclaim sand silo, sand transfer system, fluidized bed sand reclaim, and prepared sand silo are controlled by two 31,200 scfm fabric filter collectors, one for each sand reclaim system.

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Testing / Monitoring Method</b>	<b>Underlying Applicable Requirements</b>
1. VE	No visible emissions	Annually	New sand storage silo	SC VI.1f, EPA Method 22	R 336.1301(1)(c)
2. VE	10 percent opacity	6-Minute Average	Two fluidized bed sand reclaim process units	SC V.1	40 CFR 60.732
3. PM	0.13 pph	Hourly	New sand storage silo	SC V.2, SC VI.1d, SC VI.2	R 336.1331(1)(c)
4. PM10	0.13 pph	Hourly	New sand storage silo	SC V.2, SC VI.1d, SC VI.2	40 CFR 52.21(c) & (d)
5. PM2.5	0.13 pph	Hourly	New sand storage silo	SC V.2, SC VI.1d, SC VI.2	40 CFR 52.21(c) & (d)
6. PM	3.76 pph	Hourly	Two fluidized bed sand reclaim process units and associated system	SC V.1	R 336.1331(1)(c), 40 CFR 60.732
7. PM10	1.07 pph	Hourly	Two fluidized bed sand reclaim process units and associated system	SC V.2, SC VI.1d, SC VI.2	40 CFR 52.21(c) & (d)
8. PM2.5	1.07 pph	Hourly	Two fluidized bed sand reclaim process units and associated system	SC V.2, SC VI.1d, SC VI.2	40 CFR 52.21(c) & (d)
9. VOC	4.12 pph	Hourly	Two fluidized bed sand reclaim process units and associated system	SC V.2, SC VI.1, SC VI.2	R 336.1702



Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
10. NOx	2.16 pph	Hourly	Two fluidized bed sand reclaim process units and associated system	SC V.2, SC VI.1c, SC VI.2	40 CFR 52.21(c) & (d)
11. NOx	8.41 tpy	12-month rolling time period as determined at the end of each calendar month	Two fluidized bed sand reclaim process units and associated system	SC VI.1c	40 CFR 52.21(c) & (d)
12. CO	1.81 pph	Hourly	Two fluidized bed sand reclaim process units and associated system	SC V.2, SC VI.1, SC VI.2	40 CFR 52.21(c) & (d)

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. New and Recovered Core Sand Throughput	108,660 tons	12-month rolling time period as determined at the end of each calendar month	EU-PSANDPROCESS	SC VI.1a	40 CFR 52.21(c) & (d)

2. The permittee shall burn only natural gas in the two fluidized bed sand reclaim process units in EU-PSANDPROCESS. (R 336.1224, R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The maximum total heat input rate of the two natural gas fired fluidized bed sand reclaim process units in EU-PSANDPROCESS shall not exceed 22 MMBtu/hr. (R 336.1225, R 336.1702(a), 40 CFR 52.21(c) & (d))
2. The permittee shall not combust natural gas in each natural gas fired fluidized bed sand reclaim process unit in EU-PSANDPROCESS for more than 7,800 hours per 12-month rolling time period as determined at the end of each calendar month. (R 336.1224, R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))
3. The permittee shall not operate the fluidized bed sand reclaim process unit in EU-PSANDPROCESS for more than 7,800 hours per 12-month rolling time period as determined at the end of each calendar month. (R 336.1224, R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall not operate the pre-reclaim sand silo, sand transfer system, fluidized bed sand reclaim system, and prepared sand silo of EU-PSANDPROCESS unless the fabric filter collector is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the fabric filter dust collector requires a pressure drop range between 0.5 and 10 inches of water column. The minimum pressure drop shall not be less than 1 inch, water gauge, except when a large number of filter bags have been replaced or other reason acceptable to the AQD. (R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))
2. The permittee shall not operate the new sand storage silo of EU-PSANDPROCESS unless the bin vent filter is installed, maintained, and operated in a satisfactory manner. (R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Upon request from the AQD Supervisor, the permittee shall verify VE and PM emission rates from the two natural gas fired fluidized bed sand reclaim process units in EU-PSANDPROCESS, by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
Visible Emission	40 CFR Part 51, Appendix M; 40 CFR Part 60, Appendix A and B;
PM	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d), 40 CFR 60.736)**

2. Upon request from the AQD Supervisor, the permittee shall verify PM, PM10, and/or PM2.5 emission rates from the new sand storage silo, and/or PM, PM10, PM2.5, VOC, NOx, and/or CO emission rates from the two fluidized bed sand reclaim process units and/or associated system in EU-PSANDPROCESS by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A
PM10 / PM2.5	40 CFR Part 51, Appendix M
VOCs	40 CFR Part 60, Appendix A
NOx	40 CFR Part 60, Appendix A
CO	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.1702, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor and record, in a satisfactory manner, all data as specified in the following table. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21)**

Equipment	Parameter	Time Frame Basis
a) EU-PSANDPROCESS	New and recovered core sand throughput rate	Monthly and 12-month rolling time period as determined at the end of each calendar month
b) Sand reclaim unit	Natural gas usage rate	Monthly and 12-month rolling time period as determined at the end of each calendar month
c) Sand reclaim unit	NOx emissions in tpy calculated using AP-42 factors for natural gas combustion	Monthly and 12-month rolling time period as determined at the end of each calendar month

Equipment	Parameter	Time Frame Basis
d) EU-PSANDPROCESS	PM, PM10, and PM2.5 emissions in pph	Monthly average
e) Fabric filter collector for pre-reclaim sand silo, sand transfer system, fluidized bed sand reclaim system, and prepared sand silo in EU-PSANDPROCESS	Fabric filter monitoring as required in SC VI.2	As defined in the MAP required in SC VI.2
f) Sand storage silo	Presence or absence of visible emissions from the bin vent filters during loading of sand into the silo as determined by an observer using EPA Method 22	Annually
g) Sand reclaim units	Hours of natural gas combustion per unit	Monthly and 12-month rolling time period as determined at the end of each calendar month
h) Sand reclaim units	Hours of operation per unit	Monthly and 12-month rolling time period as determined at the end of each calendar month

- The permittee shall not operate EU-PSANDPROCESS unless a MAP as described in Rule 911(2), for the air cleaning devices, has been submitted before trial operation, and is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. (R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(c) & (d))

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV-Z02-BH-1	52	113	40 CFR 52.21(c) & (d)
2. SV-Z02-BH-2	52	113	40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

- The permittee shall comply with all provisions of the federal NSPS Standards of Performance for Calciners and Dryers in Mineral Industries as specified in 40 CFR Part 60, Subparts A and UUU, as they apply to the equipment in EU-PSANDPROCESS. (40 CFR Part 60, Subparts A & UUU)

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**EU-PSANDCOREROOM  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Core Room Processes

Sand Handling and Mixing - Sand from the prepared sand silo is pneumatically transported to the six core machine sand hoppers. The individual sand hoppers feed the sand mixers where polyurethane resin is mixed with the sand.

Core Making - Six cold box core machines. Dimethyl isopropylamine (DMIPA) or Dimethylpropylamine (DMPA) is used to cure the mixed sand, in the core making machines.

Core Box Tooling Maintenance - Includes the use of a core release chemical, metal cleaner, a high-pressure water wash, and core box washing station.

Cylinder Liner Cleaning and Heating - Cleaning by shot blast; induction heating used to preheat cylinder liners prior to contact with molten aluminum, vented in-plant

Final Mold Assembly - Physical assembly of the parts of the final mold/core package. The assembly process includes reusable chill plates. Emissions are negligible and vented in-plant.

Core Room Fugitive Emissions - General core handling.

**Flexible Group ID:** FG-FACILITYPM

**POLLUTION CONTROL EQUIPMENT**

Sand Handling and Mixing - Emissions from the sand hoppers and sand mixers are collected for control through a 15,000 scfm cartridge collector.

Core making - The six cold box core machines are ventilated at 25,000 scfm to a cyclone and a packed tower acid scrubber.

Core Box Tooling Maintenance - Emissions from the high-pressure water wash are controlled with a mist collector and are vented in-plant.

Cylinder Liner Cleaning and Heating - Cleaning by shot blast uses a 2,500 scfm cartridge collector control vented in-plant.

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. PM	1.35 pph	Hourly	Sand hoppers and sand mixers	SC V.1 SC VI.1, SC VI.2	R 336.1331(1)(c)
2. PM10	1.35 pph	Hourly	Sand hoppers and sand mixers	SC V.1 SC VI.1, SC VI.2	40 CFR 52.21 (c) & (d)

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
3. PM2.5	1.35 pph	Hourly	Sand hoppers and sand mixers	SC V.1 SC VI.1, SC VI.2	40 CFR 52.21 (c) & (d)
4. VOC	1.35 pph	Hourly	Sand hoppers and sand mixers	SC V.1 SC VI.1, SC VI.2,	R 336.1702
5. PM	0.56 pph	Hourly	Cold box core machines	SC V.1 SC VI.1b, SC VI.2,	R 336.1331(1) (c)
6. PM10	0.56 pph	Hourly	Cold box core machines	SC V.1 SC VI.1b, SC VI.2,	40 CFR 52.21 (c) & (d)
7. PM2.5	0.56 pph	Hourly	Cold box core machines	SC V.1 SC VI.1b, SC VI.2,	40 CFR 52.21 (c) & (d)
8. VOC	8.10 pph	Hourly	Cold box core machines	SC V.1 SC VI.1, SC VI.2,	R 336.1702
9. VOC	22.00 tpy	12-month rolling time period as determined at the end of each calendar month	Cold box core machines	SC VI.1c, SC VI.2	R 336.1702
10. VOC	3.24 pph	Hourly	Fugitive emissions from core handling	SC VI.4	R 336.1702
11. VOC	8.80 tpy	12-month rolling time period as determined at the end of each calendar month	Fugitive emissions from core handling	SC VI.1c, SC VI.3	R 336.1702
12. VOC	14.17 tpy	12-month rolling time period as determined at the end of each calendar month	Cold box core machine cleaning	SC VI.1c, SC VI.3	R 336.1702
13. VOC	1.02 tpy	12-month rolling time period as determined at the end of each calendar month	Core box cleaning	SC VI.1c, SC VI.3	R 336.1702

**II. MATERIAL LIMIT(S)**

1. The combined sum of Dimethyl-isopropylamine (DMIPA) and Dimethylpropylamine (DMPA) used will be limited to 481 tons per year measured on a 12-month rolling time period as determined at the end of each calendar month. Records must be kept as required SC VI.1a. **(R 336.1225)**

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

NA

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall not operate the sand hoppers and sand mixers of EU-PSANDCOREROOM unless the cartridge collector is installed, maintained, and operated in a satisfactory manner. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**
2. The permittee shall not operate the six cold box core machines of EU-PSANDCOREROOM unless the cyclone and packed tower acid scrubber are installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the packed tower acid scrubber requires a pressure drop range between 0.1 and 6 inches of water column, a scrubber liquid flow rate greater than 190 gallons per minute and a scrubber liquid pH less than 4.5. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**
3. The permittee shall not operate the cylinder liner cleaning operations of EU-PSANDCOREROOM unless the cartridge collector is installed, maintained, and operated in a satisfactory manner. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Upon request from the AQD Supervisor, the permittee shall verify PM, PM10, PM2.5, and/or VOC emission rates from the sand hoppers and sand mixers and/or cold box core machines in EU-PSANDCOREROOM, by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A
PM10 / PM2.5	40 CFR Part 51, Appendix M
VOCs	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.1702, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor and record, in a satisfactory manner, all data as specified in the following table. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21)**

Equipment	Parameter	Time Frame Basis
a) EU-PSANDCOREROOM	DMIPA, DMPA and core sand throughput rates	Monthly and 12-month rolling time period as determined at the end of each calendar month
b) EU-PSANDCOREROOM	PM, PM10, and PM2.5 emissions in pph	Monthly average
c) EU-PSANDCOREROOM	VOC emissions in tpy	Monthly and 12-month rolling time period as determined at the end of each calendar month
d) Acid scrubber for EU-PSANDCOREROOM	Acid scrubber monitoring as required in SC VI.2.	As defined in the MAP required in SC VI.2.
e) Cartridge collector for EU-PSANDCOREROOM	Cartridge collector monitoring as required in SC VI.2.	As defined in the MAP required in SC VI.2.

2. The permittee shall not operate EU-PSANDCORERROOM unless a MAP as described in Rule 911(2), for the air cleaning devices, has been submitted before trial operation, and is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(c) & (d))**
3. The permittee shall calculate the VOC emission rate from fugitive and cleaning operations in EU-PSANDCORERROOM monthly, for the preceding 12-month rolling time period as determined at the end of each calendar month, using a method acceptable to the AQD District Supervisor. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1702, 40 CFR 52.21)**
4. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each material used in EU-PSANDCORERROOM, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702)**

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SV-Z03-CC-2	27	113	40 CFR 52.21(c) & (d)
2. SV-Z03-ISO-1	36	60	40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).



**EU-PSANDCASTLINE  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Cast Line processes

Pouring and Cooling - Pouring and cooling of castings in the molds, mold cooling, and chill plate cleaning.  
 Shakeout - Separation of cooled castings from the sand molds. 10 MMBtu/hr natural gas-fired duct burner.

**Flexible Group ID:** FG-FACILITYPM

**POLLUTION CONTROL EQUIPMENT**

Pouring and Cooling - Emissions from cooling are controlled through a 30,000 scfm cartridge collector followed by the 60,000 scfm regenerative thermal oxidizer.

Shakeout - Emissions are heated by the duct burner and controlled through a 30,000 scfm fabric filter collector followed by the 60,000 scfm regenerative thermal oxidizer.

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. PM	2.85 pph	Hourly	EU-PSANDCASTLINE	SC V.1, SC VI.2	R 336.1331(1) (c)
2. PM10	5.55 pph	Hourly	EU-PSANDCASTLINE	SC V.1, SC VI.2	40 CFR 52.21 (c) & (d)
3. PM2.5	5.55 pph	Hourly	EU-PSANDCASTLINE	SC V.1, SC VI.2	40 CFR 52.21 (c) & (d)
4. VOC	4.07 pph	Hourly	EU-PSANDCASTLINE	SC V.1, SC V.2, SC VI.2	R 336.1702
5. NO <sub>x</sub>	4.46 pph	Hourly	EU-PSANDCASTLINE	SC V.1, SC VI.2	40 CFR 52.21 (c) & (d)
6. NO <sub>x</sub>	15.21 tpy	12-month rolling time period as determined at the end of each calendar month	EU-PSANDCASTLINE	SC VI.1f, SC VI.2	40 CFR 52.21 (c) & (d)

**II. MATERIAL LIMIT(S)**

<b>Material</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. Aluminum pouring	17,490 tons poured per year	12-month rolling time period as determined at the end of each calendar month	EU-PSANDCASTLINE	SC VI.1a	40 CFR 52.21 (c) & (d)

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The maximum heat input rate of the natural gas fired regenerative thermal oxidizer (RTO) shall not exceed 10 MMBtu/hr. **(R 336.1205(1)(a))**

- The maximum heat input rate of the natural gas fired duct burner shall not exceed 10 MMBtu/hr. **(R 336.1205(1)(a))**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

- The permittee shall not operate EU-PSANDCASTLINE unless the RTO and fabric filter collectors are installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the RTO requires a minimum temperature of 1400° F. Satisfactory operation of the fabric filter dust collector requires a pressure drop range between 1.0 and 7.0 inches of water column. The minimum pressure drop shall not be less than 1 inch, water gauge, except when a large number of filter bags have been replaced or other reason acceptable to the AQD. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

- Upon request from the AQD Supervisor, the permittee shall verify PM, PM10, PM2.5, VOC, and/or NOx emission rates from EU-PSANDCASTLINE, by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A
PM10 / PM2.5	40 CFR Part 51, Appendix M
VOCs	40 CFR Part 60, Appendix A
NOx	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

- The permittee shall monitor and record, in a satisfactory manner, all data as specified in the following table. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21)**

Equipment	Parameter	Time Frame Basis
a) EU-PSANDCASTLINE	Aluminum throughput rate	Monthly and 12-month rolling time period as determined at the end of each calendar month
b) Fabric filter collector for EU-PSANDCASTLINE	Fabric filter monitoring as required in SC VI.2.	As defined in the MAP required in SC VI.2.
c) RTO for EU-PSANDCASTLINE	RTO monitoring as required in SC VI.2.	As defined in the MAP required in SC VI.2.
d) RTO and duct burner in EU-PSANDCASTLINE	Natural gas usage rate	Monthly and 12-month rolling time period as determined at the end of each calendar month
e) EU-PSANDCASTLINE	PM, PM10, and PM2.5 emissions in pph	Monthly average
f) EU-PSANDCASTLINE - pouring, cooling, and combustion	Annual NOx emissions—using test data	Monthly and 12-month rolling time period as determined at the end of each calendar month

2. The permittee shall not operate EU-PSANDCASTLINE unless a MAP as described in Rule 911(2), for the air cleaning devices, has been submitted before trial operation, and is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. (R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(c) & (d))

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SV-Z02-RTO-03	66	125	40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**EU-PSANDSH  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

EU-PSANDSH (PSAND Sand Handling) consists of the scrap core sand handling equipment downstream of EU-PSANDCASTLINE, EU-PSANDCORERROOM and EU-FINISH. It includes the Pre-Crusher, Didion Drum, Sand Transport Hoppers, and Pre-Reclaim Sand Silo. Most of the scrap core sand process in EU-PSANDSH comes from the shakeout system at the end of EU-PSANDCASTLINE. The rest of the scrap core sand processed in EU-PSANDSH, coming from EU-PSANDCORERROOM and EU-FINISH, are introduced through the Pre-Crusher. Scrap core sand is then broken down in the Didion Drum, before being conveyed to sand hoppers and pneumatically transferred to the Pre-Reclaim Sand Silo of EU-PSANDPROCESS.

**Flexible Group ID:** FG-FACILITYPM

**POLLUTION CONTROL EQUIPMENT**

Emissions are vented to a 35,000 scfm fabric filter collector.

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. PM	2.36 pph	Hourly	EU-PSANDSH	SC V.1, SC VI.1b, SC VI.2	R 336.1331(1)(c)
2. PM10	4.73 pph	Hourly	EU-PSANDSH	SC V.1, SC VI.1b, SC VI.2	40 CFR 52.21(c) & (d)
3. PM2.5	4.73 pph	Hourly	EU-PSANDSH	SC V.1, SC VI.1b, SC VI.2	40 CFR 52.21(c) & (d)
4. VOC	14.88 pph	Hourly	EU-PSANDSH	SC V.1, SC VI.2	R 336.1702

**II. MATERIAL LIMIT(S)**

NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall not operate the rotary drum in EU-PSANDSH for more than 5,300 hours per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205, 40 CFR 52.21(c) & (d))**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall not operate EU-PSANDSH unless the fabric filter collector is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the fabric filter collector requires a pressure drop range between 0.1 and 10 inches of water column. The minimum pressure drop shall not be less than 1 inch, water gauge, except upon bag replacement or other reason acceptable to the AQD. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Upon request from the AQD Supervisor, the permittee shall verify PM, PM10, PM2.5, and/or VOC, emission rates from EU-PSANDSH, by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A
PM10 / PM2.5	40 CFR Part 51, Appendix M
VOCs	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor and record, in a satisfactory manner, all data as specified in the following table. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21)**

Equipment	Parameter	Time Frame Basis
a) Rotary drum in EU-PSANDSH	Hours of operation	Monthly and 12-month rolling time period as determined at the end of each calendar month
b) EU-PSANDSH	PM, PM10, and PM2.5 emissions in pph	Monthly average
c) EU-PSANDSH	Fabric filter collector monitoring as required in SC VI.2.	As defined in the MAP required in SC VI.2.

2. The permittee shall not operate EU-PSANDSH unless a MAP as described in Rule 911(2), for the air cleaning devices, has been submitted before trial operation, and is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(c) & (d))**

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SV-Z02-BH-6	53	160	40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**EU-FINISH  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Finishing - (precision sand and semi-permanent molding operations) Processes to remove excess metal and residual sand from the castings including Deflash/Decore/Degate (precision sand and semi-permanent mold) and shot blast.

**Flexible Group ID:** FG-FACILITYPM

**POLLUTION CONTROL EQUIPMENT**

Emissions are controlled by cartridge collectors with air flow rates of 12,800 scfm total for the Deflash, Decore, and Degate enclosures from precision sand and semi-permanent molding operations. 1,500 scfm for the shot blast cabinet associated with precision sand finishing.

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. PM	0.86 pph	Hourly	Deflash, Decore, and Degate	SC V.1, SC VI.1a, SC VI.2	R 336.1331(1) (c)
2. PM10	0.86 pph	Hourly	Deflash, Decore, and Degate	SC V.1, SC VI.1a, SC VI.2	40 CFR 52.21 (c) & (d)
3. PM2.5	0.86 pph	Hourly	Deflash, Decore, and Degate	SC V.1, SC VI.1a, SC VI.2	40 CFR 52.21 (c) & (d)
4. VOC	1.53 pph	Hourly	Deflash, Decore, and Degate	SC V.1, SC VI.2	R 336.1702
5. PM	0.20 pph	Hourly	Shotblast	SC V.1, SC VI.1a, SC VI.2	R 336.1331(1) (c)
6. PM10	0.20 pph	Hourly	Shotblast	SC V.1, SC VI.1a, SC VI.2	40 CFR 52.21 (c) & (d)
7. PM2.5	0.20 pph	Hourly	Shotblast	SC V.1, SC VI.1a, SC VI.2	40 CFR 52.21 (c) & (d)

**II. MATERIAL LIMIT(S)**

NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

NA

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall not operate Deflash, Decore, and Degate and the shotblast cabinet of EU-FINISH unless the respective cartridge collector is installed, maintained, and operated in a satisfactory manner.<sup>2</sup> (R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Upon request from the AQD Supervisor, the permittee shall verify PM, PM10, PM2.5, and/or VOC, emission rates from Deflash, Decore, and Degate and Shotblast in EU-FINISH, by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

<b>Pollutant</b>	<b>Test Method Reference</b>
PM	40 CFR Part 60, Appendix A
PM10 / PM2.5	40 CFR Part 51, Appendix M
VOCs	40 CFR Part 60, Appendix A
NO <sub>x</sub>	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor and record, in a satisfactory manner, all data as specified in the following table. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21)**

<b>Equipment</b>	<b>Parameter</b>	<b>Time Frame Basis</b>
a) EU-FINISH	PM, PM10, and PM2.5 emissions in pph	Monthly average
b) EU-FINISH	Cartridge collector monitoring as required in SC VI.2.	As defined in the MAP required in SC VI.2.

2. The permittee shall not operate Deflash, Decore, and Degate and the shotblast cabinet of EU-FINISH unless a MAP as described in Rule 911(2), for the air cleaning devices, has been submitted before trial operation, and is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(c) & (d))**

**VII. REPORTING**

NA



**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SV-Z05-CC-1	42	63	40 CFR 52.21(c) & (d)
2. SV-Z03-CC-1	21	56	40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**EU-SPMALUMINUM  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Molten Aluminum Supply - Natural gas-fired stack melter aluminum melting/holding furnace for aluminum/alloy production using “clean charge” with flux addition, drossing, and degassing well (argon). Design heat input rate of 14.5 MMBtu/hr gas-fired for 5.5 tons/hr melt rate and 4.25 MMBtu/hr heat input rate in holding operational mode. Electrically heated launder systems vented in-plant. Four electric ladle furnaces also with degassing (argon) capability and flux addition, vented in-plant.

**Flexible Group ID:** FG-FACILITYPM

**POLLUTION CONTROL EQUIPMENT**

Emissions from the launder systems and ladle furnaces and holding furnace are released to the internal plant environment.

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. PM	1.13 pph	Hourly	Stack melter furnace in EU-SPMALUMINUM	SC V.1	R 336.1331(1) (c)
2. PM10	1.13 pph	Hourly	Stack melter furnace in EU-SPMALUMINUM	SC V.1	40 CFR 52.21 (c) & (d)
3. PM2.5	1.13 pph	Hourly	Stack melter furnace in EU-SPMALUMINUM	SC V.1	40 CFR 52.21 (c) & (d)
4. VOC	1.20 pph	Hourly	Stack melter furnace in EU-SPMALUMINUM	SC V.1	R 336.1702
5. NOx	2.75 pph	Hourly	Stack melter furnace in EU-SPMALUMINUM	SC V.1	40 CFR 52.21 (c) & (d)
6. NOx	9.55 tpy	12-month rolling time period as determined at the end of each calendar month	Stack melter furnace in EU-SPMALUMINUM	SC VI.1d	40 CFR 52.21 (c) & (d)
7. CO	2.06 pph	Hourly	Stack melter furnace in EU-SPMALUMINUM	SC V.1	40 CFR 52.21 (c) & (d)

**II. MATERIAL LIMIT(S)**

<b>Material</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. Metal feed/charge rate	5.5 tons metal per hour	Monthly average	Stack melter furnace in EU-SPMALUMINUM	SC VI.1e	R 336.1205(1)

Material	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
2. Flux usage rate (total injection flux and broadcast flux)	7,332 pounds	12-month rolling time period as determined at the end of each calendar month	Stack melter furnace in EU-SPMALUMINUM	SC VI.1f	R 336.1205(1) R 336.1225

3. The permittee shall not melt in EU-SPMALUMINUM any material other than clean charge, customer returns, or internal scrap, as defined by 40 CFR Part 63, Subpart RRR. This condition is necessary to avoid requirements of 40 CFR Part 63, Subpart RRR, National Emission Standards for Secondary Aluminum Production. **(R 336.1224, R 336.1225, 40 CFR Part 63 Subpart RRR)**

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall not operate the stack melting/holding furnace in EU-SPMALUMINUM as a melting furnace for more than 6,032 hours per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205, 40 CFR 52.21(c) & (d))**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The design maximum heat input rating of the stack melting/holding furnace in EU-SPMALUMINUM shall not exceed 14.5 MMBtu/hr during charging/melting or 4.25 MMBtu/hr when operated in holding only furnace mode. **(R 336.1205(1)(a))**

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Upon request from the AQD Supervisor, the permittee shall verify PM, PM10, PM2.5, NOx, VOC and/or CO, emission rates from EU-SPMALUMINUM, by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A
PM10 / PM2.5	40 CFR Part 51, Appendix M
NOx	40 CFR Part 60, Appendix A
VOCs	40 CFR Part 60, Appendix A
CO	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall monitor and record, in a satisfactory manner, all data as specified in the following table.(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21)

Equipment	Parameter	Time Frame Basis
a) Stack melting/holding furnace in EU-SPMALUMINUM	Hours of operation as a melting furnace	Monthly and 12-month rolling time period as determined at the end of each calendar month
b) Stack melting/holding furnace in EU-SPMALUMINUM	Natural gas usage rate	Monthly and 12-month rolling time period as determined at the end of each calendar month
c) Stack melting/holding furnace in EU-SPMALUMINUM	PM, PM10, and PM2.5 emissions in pph	Monthly average
d) Stack melting/holding furnace in EU-SPMALUMINUM	NO <sub>x</sub> emissions in tpy calculated using emission factors derived from the most recent performance testing	Monthly and 12-month rolling time period as determined at the end of each calendar month
e) Stack melting/holding furnace in EU-SPMALUMINUM	Metal feed/charge rate	Monthly average
f) Melting/holding furnace, launder, and pump well	Total flux usage rate (total injection flux and broadcast flux)	Monthly and 12-month rolling time period as determined at the end of each calendar month

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV-Z05-BH-4 (with fabric filter control)	66 <sup>2</sup>	125 <sup>2</sup>	40 CFR 52.21(c) & (d)
2. SV-Z05-GV-1 (without fabric filter control)*	42	86	40 CFR 52.21(c) & (d)
* Stack has rain cap.			

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**EU-SPMPROCESSAND  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Sand Processing – 120-ton new sand storage silo with bin vent filter receives sand via blower truck and a 30-ton pre-reclaim sand silo receives process sand recovered in the facility. Sand from both silos is transported to the natural gas fired fluidized bed sand reclaim process system (sand reclaim furnace, sand cooler, sand screen, and deduster) (design heat input rate is 4 MMBtu/hr) for cleaning and preparation of sand. From there, sand is transferred to the prepared sand silo.

Top core, scrap cores, broken cores and process sand collected from EU-SPMCASTLINE and EU-SPMCASTLINE4 and scrap cores and process sand from EU-SPMCOREROOM are collected in a bin/hopper and taken to a Sand Load Out Station for reclaim or returned to the process by the receiving dump chute of EU-SPMPROCESSAND for transport by conveyor to the hopper/storage silo of EU-SPMPROCESSAND.

**Flexible Group ID:** FG-FACILITYPM

**POLLUTION CONTROL EQUIPMENT**

The new core sand storage silo has a bin vent filter. PM emissions from these sand handling processes and EUSPMCASTLINE4 and sand handling transfer points including the pre-reclaim sand silo, sand transfer system, fluidized bed sand reclaim, and prepared sand silo in EU-SPMPROCESSAND are controlled by a single 34,000 scfm fabric filter collector. There is no emission control on the remaining sand handling or transfer points (bin/hopper, Sand Load Out Station, receiving dump chute).

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. VE	No visible emissions	Annually	New sand storage silo	SC VI.1f, Method 22	R 336.1301(1) (c)
2. VE	10 percent opacity	6-Minute Average	Fluidized bed sand reclaim	SC V.1	40 CFR 60.732
3. PM	0.13 pph	Hourly	New sand storage silo	SC V.2, SC VI.1c, SC VI.2	R 336.1331(1) (c)
4. PM10	0.13 pph	Hourly	New sand storage silo	SC V.2, SC VI.1c, SC VI.2	40 CFR 52.21 (c) & (d)
5. PM2.5	0.13 pph	Hourly	New sand storage silo	SC V.2, SC VI.1c, SC VI.2	40 CFR 52.21(c) & (d)
6. PM	1.65 pph	Hourly	Sand reclaim, pre-reclaim sand silo, and prepared sand silo	SC V.1	R 336.1331(1) (c), 40 CFR 60.732
7. PM10	0.44 pph	Hourly	Sand reclaim, pre-reclaim sand silo, and prepared sand silo	SC V.2, SC VI.1c, SC VI.2	40 CFR 52.21 (c) & (d)
8. PM2.5	0.44 pph	Hourly	Sand reclaim, pre-reclaim sand silo, and prepared sand silo	SC V.2, SC VI.1c, SC VI.2	40 CFR 52.21 (c) & (d)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
9. VOC	3.62 pph	Hourly	Sand reclaim, pre-reclaim sand silo, and prepared sand silo	SC V.2, SC VI.2	R 336.1702
10. NOx	0.39 pph	Hourly	Sand reclaim, pre-reclaim sand silo, and prepared sand silo	SC V.2, SC VI.1, SC VI.2	40 CFR 52.21 (c) & (d)
11. NOx	1.53 tpy	12-month rolling time period as determined at the end of each calendar month	Sand reclaim, pre-reclaim sand silo, and prepared sand silo	SC VI.1d, SC VI.2	40 CFR 52.21 (c) & (d)
12. CO	0.33 pph	Hourly	Sand reclaim, pre-reclaim sand silo, and prepared sand silo	SC V.2, SC VI.1, SC VI.2	40 CFR 52.21 (c) & (d)

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. New and Recovered Core Sand Throughput	54,288tons	12-month rolling time period as determined at the end of each calendar month	EU-SPMPROCESSAND	SC VI.1a	40 CFR 52.21 (c) & (d)

2. The permittee shall burn only natural gas in the fluidized bed sand reclaim process unit in EU-SPMPROCESSAND. **(R 336.1224, R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))**

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The maximum heat input rate of the natural gas fired fluidized bed sand reclaim process unit in EU-SPMPROCESSAND shall not exceed 4 MMBtu/hr. **(R 336.1205(1)(a))**
2. The permittee shall not combust natural gas in the natural gas fired fluidized bed sand reclaim process unit in EU-SPMPROCESSAND for more than 7,800 hours per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1224, R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))**
3. The permittee shall not operate the fired fluidized bed sand reclaim process unit in EU-SPMPROCESSAND for more than 7,800 hours per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1224, R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall not operate the pre-reclaim sand silo, sand transfer system, fluidized bed sand reclaim system, and prepared sand silo of EU-SPMPROCESSAND unless the fabric filter collector is installed, maintained, and operated in a satisfactory manner. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**

- The permittee shall not operate the new sand storage silo of EU-SPMPROCESSAND unless the bin vent filter is installed, maintained, and operated in a satisfactory manner. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

- Upon request from the AQD Supervisor, the permittee shall verify VE and PM emission rates from the natural gas fired fluidized bed sand reclaim process unit in EU-SPMPROCESSAND by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
Visible Emission	40 CFR Part 51, Appendix M; 40 CFR Part 60, Appendix A and B;
PM	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d), 40 CFR 60.736)**

- Upon request from the AQD Supervisor, the permittee shall verify PM, PM10, PM2.5, VOC, NOx, and/or CO, emission rates from the Sand reclaim, pre-reclaim sand silo, and prepared sand silo and new sand storage silo in EU-SPMPROCESSAND, by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A
PM10 / PM2.5	40 CFR Part 51, Appendix M
VOCs	40 CFR Part 60, Appendix A
NOx	40 CFR Part 60, Appendix A
CO	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

- The permittee shall monitor and record, in a satisfactory manner, all data as specified in the following table. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21)**

Equipment	Parameter	Time Frame Basis
a) EU-SPMPROCESSAND	Sand throughput rate	Monthly and 12-month rolling time period as determined at the end of each calendar month
b) Sand reclaim unit	Natural gas usage rate	Monthly and 12-month rolling time period as determined at the end of each calendar month

<b>Equipment</b>	<b>Parameter</b>	<b>Time Frame Basis</b>
c) EU-SPMPROCESSAND	PM, PM10, and PM2.5 emissions in pph	Monthly average
d) Sand reclaim unit	NO <sub>x</sub> emissions in tpy calculated using AP-42 factors for natural gas combustion	Monthly and 12-month rolling time period as determined at the end of each calendar month
e) Fabric filter collector for pre-reclaim sand silo, sand transfer system, fluidized bed process and prepared sand silo in EU-SPMPROCESSAND	Fabric filter monitoring as required in SC VI.2.	As defined in the MAP required in SC VI.2.
f) Sand storage silo	Presence or absence of visible emissions from the bin vent filters during loading of sand into the silo as determined by an observer using EPA Method 22	Annually
g) Sand reclaim unit	Hours of natural gas combustion	Monthly and 12-month rolling time period as determined at the end of each calendar month
h) Sand reclaim units	Hours of operation per unit	Monthly and 12-month rolling time period as determined at the end of each calendar month

2. The permittee shall not operate EU-SPMPROCESSAND unless a MAP as described in Rule 911(2), for the air cleaning devices, has been submitted before trial operation, and is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. (R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(c) & (d))

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SV-Z02-BH-4	52	113	40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA



**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**EU-SPMCOREROOM  
EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Core Room Processes

Sand Handling & Mixing – Via both enclosed conveyor and pneumatic systems prepared sand is transported to and received into the central sand hopper and mixer located above the core machines.

Sand and two-part epoxyacrylic resin mixing.

Core Making – sulfur dioxide co-reactant injection system which supplies mixed sulfur dioxide for the three cold box core machines. Sulfur dioxide is stored in 2,000 pound compressed gas cylinders

Core Box Tooling Maintenance – Includes the use of a core release chemical, metal cleaner, a high-pressure water wash and core box washing station. High pressure water wash and core box washing station is carried out within EU-PSANDCOREROOM.

Scrap cores and process sand are placed in bins or hoppers and taken to a Sand Load Out Station for reclaim. Sand is added to the process by the receiving dump chute of EU-SPMPROCESSAND.

Core Room Fugitive Emissions - Storage of completed cores in a core buffer area produces off-gassing emissions (core making fugitives) which are released to the general ventilation system for the building.

**Flexible Group ID:** FG-FACILITYPM

**POLLUTION CONTROL EQUIPMENT**

Emissions from the final sand transport, sand hopper, and mixer are controlled by a 5,000 scfm cartridge collector. Emissions from the core making machines are controlled by a cyclone and a packed tower caustic scrubber with a 20,000 scfm exhaust gas flow rate.

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. PM	0.34 pph	Hourly	Sand hoppers and sand mixers of EU-SPMCOREROOM	SC V.2, SC VI.1a, SC VI.2	R 336.1331(1)(c)
2. PM10	0.34 pph	Hourly	Sand hoppers and sand mixers of EU-SPMCOREROOM	SC V.2, SC VI.1a, SC VI.2	40 CFR 52.21 (c) & (d)
3. PM2.5	0.34 pph	Hourly	Sand hoppers and sand mixers of EU-SPMCOREROOM	SC V.2, SC VI.1a, SC VI.2	40 CFR 52.21 (c) & (d)
4. VOC	0.41 pph	Hourly	Sand hoppers and sand mixers of EU-SPMCOREROOM	SC V.2, SC VI.1, SC VI.2	R 336.1702
5. PM	0.45 pph	Hourly	Core Box of EU-SPMCOREROOM	SC V.2, SC VI.1a, SCVI.2	R 336.1331(1)(c)
6. PM10	0.45 pph	Hourly	Core Box of EU-SPMCOREROOM	SC V.2, SC VI.1a, SC VI.2	40 CFR 52.21 (c) & (d)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
7. PM2.5	0.45 pph	Hourly	Core Box of EU-SPMCOREROOM	SC V.2, SC VI.1a, SC VI.2	40 CFR 52.21 (c) & (d)
8. VOC	1.23 pph	Hourly	Core Box of EU-SPMCOREROOM	SC V.2, SC VI.1, SC VI.2	R 336.1702
9. SO <sub>2</sub>	5.49 pph	Hourly	Core Box of EU-SPMCOREROOM	SC V.1	40 CFR 52.21 (c) & (d)
10. VOC	3.72 tpy	12-month rolling time period as determined at the end of each calendar month	Core Box of EU-SPMCOREROOM	SC VI.1c, SC VI.2	R 336.1702
11. VOC	14.17 tpy	12-month rolling time period as determined at the end of each calendar month	Core Box Core Machine cleaning (fugitives)	SC VI.1c, SC VI.2	R 336.1702
12. VOC	1.64 pph	Hourly	Core Making (fugitives)	SC VI.4	R 336.1702
13. VOC	4.96 tpy	12-month rolling time period as determined at the end of each calendar month	Core Making (fugitives)	SC VI.1c, SC VI.2	R 336.1702

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. SO <sub>2</sub> Catalyst	307 tons SO <sub>2</sub> catalyst per year <sup>1</sup>	Monthly and 12-month rolling time period as determined at the end of each calendar month	EU-SPMCOREROOM	SC VI.1b	R 336.1225

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

NA

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall not operate the sand hoppers and sand mixers of EU-SPMCOREROOM unless the cartridge collector is installed, maintained, and operated in a satisfactory manner. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**
2. The permittee shall not operate the three cold box core machines of EU-SPMCOREROOM unless the cyclone and packed tower caustic scrubber are installed, maintained, and operated in a satisfactory manner. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Upon request from the AQD Supervisor, the permittee shall verify SO<sub>2</sub> emission rates from the core making process of EU-SPMCOREROOM by testing at the owner’s expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
SO <sub>2</sub>	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

2. Upon request from the AQD Supervisor, the permittee shall verify PM, PM10, PM2.5, and/or VOC, emission rates from Sand hoppers and sand mixers, and/or Core box of EU-SPMCOREROOM, by testing at the owner’s expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A
PM10 / PM2.5	40 CFR Part 51, Appendix M
VOCs	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor and record, in a satisfactory manner, all data as specified in the following table. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21)**

Equipment	Parameter	Time Frame Basis
a) EU-SPMCOREROOM	PM, PM10, and PM2.5 emissions in pph	Monthly average
b) EU-SPMCOREROOM	SO <sub>2</sub> and core sand throughput rates	Monthly and 12-month rolling time period as determined at the end of each calendar month
c) EU-SPMCOREROOM	VOC emissions in tpy	Monthly and 12-month rolling time period as determined at the end of each calendar month
d) Caustic scrubber for EU-SPMCOREROOM	Caustic scrubber monitoring as required in SC VI.2.	As defined in the MAP required in SC VI.2.
e) Cartridge collector for EU-SPMCOREROOM	Cartridge collector monitoring as required in SC VI.2.	As defined in the MAP required in SC VI.2.

2. The permittee shall not operate EU-SPMCOREROOM unless a MAP as described in Rule 911(2), for the air cleaning devices, has been submitted before trial operation, and is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(c) & (d))**
3. The permittee shall calculate the VOC emission rate from fugitive and cleaning operations in EU-SPMCOREROOM monthly, for the preceding 12-month rolling time period as determined at the end of each calendar month, using a method acceptable to the AQD District Supervisor. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1702, 40 CFR 52.21)**
4. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each material used in EU-SPMCOREROOM, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702)**

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SV-Z05-CC-2	23	86	40 CFR 52.21(c) & (d)
2. SV-Z05-ISO-2	36	86	40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**EU-SPMCASTLINE  
EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Cast Lines – Three cast lines with a nominal maximum combined production rate of 106 castings per hour (2,460 castings per day) and a nominal maximum production rate of 53 castings per hour on any single casting line.

The cast lines consist of the following:

*Section #1:* (3 modular units) making a final mold; mold filling; initial cooling; extraction; and cut sprue. Making a final mold includes mold and core assembly and mold heating with natural gas-fired 16 MMBtu/hr (total heat input rate) burners/torches. Mold filling is conducted by gravity pour. Initial cooling and solidification of the molten metal occurs inside the mold. Extraction of the casting (including sand cores) from the steel mold is completed by the casting extraction unload robot. Top core and down sprue removal. Additional cooling and complete solidification occur in the casting solidification buffer area. Sprue, risers, runners, and other internal scrap are collected and remelted.

*Section #2:* (3 identical modular units) extended casting cooling in the cooling garage.

*Section #3:* (2 identical modular units) Deflash; Decore; Degate. Finishing operations include the removal of excess metal and sand from the casting (EU-FINISH). Metal removed from the casting is collected and remelted.

Process and scrap sand generated from SPMCASTLINE is collected and transported as described in EU-SPMPROCESSAND.

Mold Preparation – Offline mold preparation benches with steel mold heating using natural gas fired burners. Total heat input rate of 3.5 MMBtu/hr.

Mold Coating Repair – Three coating repair booths including a decoating process using inert media.

**Flexible Group ID:** FG-FACILITYPM

**POLLUTION CONTROL EQUIPMENT**

Coating emissions are controlled by a 13,000 scfm cartridge collector. Emissions control for Section #1 and Section#2 is three 60,000 scfm fabric filter collectors (one for each cast line). Combined emissions from Section #3 of both cast lines and precision sand finishing operations are routed to a 12,800 scfm cartridge collector (EU-FINISH). Decoating emissions are routed to a 7,500 scfm cartridge collector, vented in-plant.

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. NOx	1.03 tpy	12-month rolling time period as determined at the end of each calendar month	Offline mold prep	SC V.1, SC VI.1.c	R 336.1205
2. PM	5.87 pph	Hourly	Section1 & 2 all three cast lines combined including mold preheating	SC V.1, SC VI.1.b	R 336.1331(1)(c)
3. PM10	5.87 pph	Hourly	Section1 & 2 all three cast lines combined including mold preheating	SC V.1, SC VI.1.b	40 CFR 52.21 (c) & (d)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
4. PM2.5	5.87 pph	Hourly	Section1 & 2 all three cast lines combined including mold preheating	SC V.1, SC VI.1.b	40 CFR 52.21 (c) & (d)
5. VOC	10.81 pph	Hourly	Section1 & 2 all three cast lines combined	SC V.1	R 336.1702
6. NOx	1.9 pph	Hourly	Section1 & 2 all three cast lines combined including mold preheating	SC V.1	40 CFR 52.21 (c) & (d)
7. NOx	1.41 tpy	12-month rolling time period as determined at the end of each calendar month	Section1 & 2 all three cast lines combined including mold preheating	SC V.1, SC VI.1.d	40 CFR 52.21 (c) & (d)
8. CO	12.47 pph	Hourly	Section1 & 2 all three cast lines combined including mold preheating	SC V.1, SC VI.1.b	40 CFR 52.21 (c) & (d)
9. PM	0.88 pph	Hourly	Mold Coating	SC IV.1, SC VI.1.b	R 336.1331(1)(c)
10. PM10	0.88 pph	Hourly	Mold Coating	SC IV.1, SC VI.1.b	40 CFR 52.21 (c) & (d)
11. PM2.5	0.88 pph	Hourly	Mold Coating	SC IV.1, SC VI.1.b	40 CFR 52.21 (c) & (d)

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. Aluminum	19,412 tons poured per year	12-month rolling time period as determined at the end of each calendar month	EU-SPMCASTLINE	SC VI.1.f	40 CFR 52.21 (c) & (d)

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The maximum heat input rate of the natural gas fired equipment in EU-SPMCASTLINE shall not exceed a total of 16 MMBtu/hr. **(R 336.1205(1)(a))**
2. The permittee shall not operate EU-SPMCASTLINE for more than 6,032 hours per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205, 40 CFR 52.21(c) & (d))**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall not operate EU-SPMCASTLINE unless the respective air cleaning devices are installed, maintained, and operated in a satisfactory manner. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**
2. The permittee shall not operate Section #1 and/or Section #2 of EU-SPMCASTLINE unless the fabric filter collector associated with the individual cast line is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the fabric filter dust collector requires a pressure drop range between 0.5 and 10 inches of water column. The minimum pressure drop shall not be less than 1 inch, water gauge, except

when a large number of filter bags have been replaced or other reason acceptable to the AQD. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, R 40 CFR 52.21(c) & (d))**

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Upon request from the AQD Supervisor, the permittee shall verify CO, PM, PM10, PM2.5, VOC, and NOx emission rates from EU-SPMCASTLINE, by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
CO	40 CFR Part 60, Appendix A
PM	40 CFR Part 60, Appendix A
PM10 / PM2.5	40 CFR Part 51, Appendix M
VOCs	40 CFR Part 60, Appendix A
NO <sub>x</sub>	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor and record, in a satisfactory manner, all data as specified in the following table. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21)**

Equipment	Parameter	Time Frame Basis
a) Offline mold prep area of EU-SPMCASTLINE	Natural gas usage rate	Monthly and 12-month rolling time period as determined at the end of each calendar month
b) EU-SPMCASTLINE, Section1 & 2 all three cast lines combined including mold preheating	CO and PM, PM10, and PM2.5 emissions in pph	Monthly average
c) Offline mold prep area of EU-SPMCASTLINE	NO <sub>x</sub> emissions in tpy calculated using AP-42 factors for natural gas combustion	Monthly and 12-month rolling time period as determined at the end of each calendar month
d) EU-SPMCASTLINE, Section1 & 2 all three cast lines combined including mold preheating	NO <sub>x</sub> emissions in tpy calculated using emission factors derived from the most recent performance testing	Monthly and 12-month rolling time period as determined at the end of each calendar month
e) Air cleaning devices for EU-SPMCASTLINE	Monitoring as required in SC VI.2.	As defined in the MAP required in SC VI.2.
f) EU-SPMCASTLINE, Section1 & 2 all three cast lines combined including mold preheating	Tons of metal poured	Monthly and 12-month rolling time period as determined at the end of each calendar month
i) EU-SPMCASTLINES	Hours of operation per unit	Monthly and 12-month rolling time period as determined at the end of each calendar month



2. The permittee shall not operate EU-SPMCASTLINE unless a MAP as described in Rule 911(2), for the air cleaning devices, has been submitted before trial operation, and is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(c) & (d))**

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SV-Z05-BH-1	53	160	40 CFR 52.21(c) & (d)
2. SV-Z05-BH-2	53	160	40 CFR 52.21(c) & (d)
3. SV-Z05-BH-3	53	160	40 CFR 52.21(c) & (d)
4. SV-Z05-CC-4	30	73	40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**EU-SPMCASTLINE4  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Cast Line – One carousel cast line with a nominal maximum production rate of 50 molds per hour. The cast line consists of the following:  
 Section #1: making a final mold; mold filling; initial cooling; extraction; and cut sprue. Making a final mold includes mold and core assembly and mold heating with natural gas fired 16 MMBtu/hr (total heat input rate) burners/torches. Mold filling is by gravity pour. Initial cooling and solidification of the molten metal occurs inside the mold. Extraction of the casting (including sand cores) from the steel mold is completed by the casting extraction unload robot. Core and down sprue removal. Additional cooling and complete solidification occur in the casting solidification buffer area. Sprue, risers, runners, and other internal scrap are collected and remelted.  
 Section #2: extended casting cooling in a cooling area  
 Section #3: Deflash; Decore; Degate. Finishing operations include the removal of excess metal and sand from the casting. Excess metal is collected and remelted.  
 Process and scrap sand generated from EU SPMCASTLINE4 is collected and transported as described in EU SPMPROCESSAND.

**Flexible Group ID:** FG-FACILITYPM

**POLLUTION CONTROL EQUIPMENT**

Emissions control for Section #1 and Section #2 is 2 – 30,000 scfm fabric filter collectors.

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. PM	6.02 pph	Hourly	Cast Line Section 1 & 2 including mold preheating	SC V.1 SC VI.1a	R 336.1205(1)(a), R 336.1331(1)(c)
2. PM10	3.63 pph	Hourly	Cast Line Section 1 & 2 including mold preheating	SC V.1 SC VI.1a	R 336.1205(1)(a), 40 CFR 52.21 (c) & (d)
3. PM2.5	3.63 pph	Hourly	Cast Line Section 1 & 2 including mold preheating	SC V.1 SC VI.1a	R 336.1205(1)(a), 40 CFR 52.21 (c) & (d)
4. VOC	9.19 pph	Hourly	Cast Line Section 1 & 2 including mold preheating	SC V.1	R 336.1205(1)(a), R 336.1702
5. NOx	2.59 pph	Hourly	Cast Line Section 1 & 2 including mold preheating	SC V.1	R 336.1205(1)(a), 40 CFR 52.21(c) & (d)
6. NOx	1.41 tpy	12-month rolling time period as determined at the end of each calendar month	Cast Line Section 1 & 2 including mold preheating	SC V.1 SC VI.1b	R 336.1205(1)(a), 40 CFR 52.21 (c) & (d)
7. CO	10.77 pph	Hourly	Cast Line Section 1 & 2 including mold preheating	SC V.1 SC VI.1a	R 336.1205(1)(a), 40 CFR 52.21 (c) & (d)

**II. MATERIAL LIMIT(S)**

<b>Material</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. Aluminum	12,288 tons poured per year	12-month rolling time period as determined at the end of each calendar month	EU-SPMCASTLINE4	SC VI.1d	R 336.1205(1)(a), 40 CFR 52.21 (c) & (d)

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The maximum heat input rate of the cast lines natural gas fired equipment in EU-SPMCASTLINE4 shall not exceed a total of 16 million British thermal units per hour (MMBtu/hr). **(R 336.1205(1)(a))**
2. The permittee shall not operate EU-SPMCASTLINE4 for more than 6,032 hours per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205, 40 CFR 52.21(c) & (d))**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall not operate EU-SPMCASTLINE4 unless the respective air cleaning devices are installed, maintained, and operated in a satisfactory manner. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Upon request from the AQD Supervisor, the permittee shall verify CO, PM, PM10, PM2.5, VOC, and NOx emission rates from EU-SPMCASTLINE4, by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

<b>Pollutant</b>	<b>Test Method Reference</b>
CO	40 CFR Part 60, Appendix A
PM	40 CFR Part 60, Appendix A
PM10 / PM2.5	40 CFR Part 51, Appendix M
VOCs	40 CFR Part 60, Appendix A
NOx	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, 40 CFR 52.21(c) & (d))**

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor and record, in a satisfactory manner, all data as specified in the following table. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21)**

<b>Equipment</b>	<b>Parameter</b>	<b>Time Frame Basis</b>
a) EU-SPMCASTLINE4	CO and PM, PM10, and PM2.5 emissions in pph	Monthly average
b) EU-SPMCASTLINE4	Annual NOx emissions—using test data	Monthly and 12-month rolling time period as determined at the end of each calendar month
c) Air cleaning devices for EU-SPMCASTLINE4	Monitoring as required in SC VI.2.	As defined in the MAP required in SC VI.2.
d) EU-SPMCASTLINE4	Tons of metal poured	Monthly and 12-month rolling time period as determined at the end of each calendar month

2. The permittee shall not operate EU-SPMCASTLINE4 unless a malfunction abatement plan (MAP) as described in Rule 911(2), for the air cleaning devices, has been submitted before trial operation, and is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. (R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(c) & (d))

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SV-Z05-BH-5	66	125	R 336.1331(1)(c), 40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**EU-PREMACHINING  
EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Multiple stations for machining to remove excess metal and for surface preparation (includes the use of a coolant).

Casting washing using water jets and a cleaning solution.

Casting leak testing using compressed air.

**Flexible Group ID:** FG-FACILITYPM

**POLLUTION CONTROL EQUIPMENT**

Localized exhaust at each removal/preparation machine, 2,000 scfm with mist eliminator, released to general in-plant exhaust. Localized exhaust at each casting washing machine, 2,000 cfm with mist eliminator, released to general in-plant exhaust.

**I. EMISSION LIMIT(S)**

NA

**II. MATERIAL LIMIT(S)**

NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

NA

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

NA

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. (R 336.1201(3))

NA

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall monitor and record, in a satisfactory manner, all data as specified in the following table. (R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21)

<b>Equipment</b>	<b>Parameter</b>	<b>Time Frame Basis</b>
a) EU-PREMACHINING	Fugitive VOC emission rate in tpy using available emission factors	monthly and 12-month rolling time period as determined at the end of each calendar month

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

NA

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**EU-MACHASM  
EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Multiple stations for machining to remove excess metal and for surface preparation (includes the use of a coolant).

Casting washing using water jets and a cleaning solution.

Casting leak testing using compressed air; dry machining and assembly operations.

**Flexible Group ID:** FG-FACILITYPM

**POLLUTION CONTROL EQUIPMENT**

Localized exhaust at each removal/preparation machine, 2,000 scfm with mist eliminator, released to general in-plant exhaust. Localized exhaust at each casting washing machine, 2,000 cfm with mist eliminator, released to general in-plant exhaust.

**I. EMISSION LIMIT(S)**

NA

**II. MATERIAL LIMIT(S)**

NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

NA

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

NA

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. (R 336.1201(3))

NA

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall monitor and record, in a satisfactory manner, all data as specified in the following table. (R 336.1205, R 336.1301, R 336.1331, R 336.1910, , 40 CFR 52.21)

<b>Equipment</b>	<b>Parameter</b>	<b>Time Frame Basis</b>
a) EU-MACHASM	Fugitive VOC emission rate in tpy using available emission factors	Monthly and 12-month rolling time period as determined at the end of each calendar month

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

NA

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).



**EU-6ML-EF-02  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Exhaust to Well #1&2 Furnace (Open ended duct at Launder, #1 & #2 furnace)

**Flexible Group ID:** FG-FACILITYPM

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. PM10	0.02 lb/1000 lb exhaust gas on a dry gas basis	Hourly	EU-6ML-EF-02	SC V.1	R 336.1331
2. PM10	4.5 pph	Hourly	EU-6ML-EF-02	SC V.1	R 336.1331
3. PM10	13.5 tpy	12-month rolling time period as determined at the end of each calendar month	EU-6ML-EF-02	SC VI.1 & 2	R 336.1205(3), R 336.1331

**II. MATERIAL LIMIT(S)**

NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

NA

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

NA

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

- Upon request from the AQD Supervisor, the permittee shall verify PM10 emission rates from EU-6ML-EF-02, by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

<b>Pollutant</b>	<b>Test Method Reference</b>
PM10	40 CFR Part 51, Appendix M

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.2001)**

**VI. MONITORING/RECORDKEEPING**

NA

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SV-6ML-EF-02	53	99	40 CFR 52.21 (c)&(d)

**IX. OTHER REQUIREMENT(S)**

1. Visible emissions from the #6 Mold Line shall not exceed a 6-minute-average of 10 percent opacity. **(R 336.1301(c))**

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**FLEXIBLE GROUP SPECIAL CONDITIONS**

**FLEXIBLE GROUP SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FG-6ML-ALMELT	Aluminum Reverberatory Furnace #1 (West) and Aluminum Reverberatory Furnace #2 (East).	EU-6ML-GV-01, EU-6ML-GV-02
FG-FACILITYPM	Particulate emissions associated with the facility.	EU-6ML-EF-02, EU-6ML-GV-01, EU-6ML-GV-02, EU-PSANDALUMINUM, EU-PSANDPROCESS, EU-PSANDCORERROOM, EU-PSANDCASTLINE, EU-PSANDSH, EU-FINISH, EU-SPMALUMINUM, EU-SPMPROCESSAND, EU-SPMCORERROOM, EU-SPMCASTLINE, EU-SPMCASTLINE4, EU-PREMACHINING, EU-MACHASM

**FG-6ML-ALMELT  
FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

Aluminum Reverberatory Furnace #1 (West) and Aluminum Reverberatory Furnace #2 (East)

**Emission Unit:** EU-6ML-GV-01, EU-6ML-GV-02

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario**</b>	<b>Equipment***</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. PM10	0.02 lb/1,000 lb on a dry gas basis	Hourly/Holding, Charging	EU-6ML-GV-01, EU-6ML-GV-02	SC V.1	R 336.1331
2. PM10	2.3 pph	Hourly/Holding, Charging	EU-6ML-GV-01, EU-6ML-GV-02	SC V.1, SC VI.1, SC VI.2	R 336.1331
3. PM10	9.8 tpy	12-month rolling time period as determined at the end of each calendar month/Holding, Charging	EU-6ML-GV-01, EU-6ML-GV-02	SC VI.1, SC VI.2	R 336.1331, R 336.1205(3)
4. CO	3.5 pph	Hourly/Holding, Charging	EU-6ML-GV-01, EU-6ML-GV-02	SC V.1, SC VI.1, SC VI.2	R 336.1201
5. CO	15 tpy	12-month rolling time period as determined at the end of each calendar month/Holding, Charging	EU-6ML-GV-01, EU-6ML-GV-02	SC VI.1, SC VI.2	R 336.1201, R 336.1205(3)
6. NOx	4.2 pph	Hourly/Holding, Charging	EU-6ML-GV-01, EU-6ML-GV-02	SC V.1, SC VI.1, SC VI.2	R 336.1201
7. NOx	18 tpy	12-month rolling time period as determined at the end of each calendar month/Holding, Charging	EU-6ML-GV-01, EU-6ML-GV-02	SC VI.1, SC VI.2	R 336.1201, R 336.1205(3)
8. VOC	0.46 pph	Hourly/Holding, Charging	EU-6ML-GV-01, EU-6ML-GV-02	SC V.1, SC VI.1, SC VI.2	R 336.1201 R 336.1702
9. VOC	2.02 tpy	12-month rolling time period as determined at the end of each calendar month/Holding, Charging	EU-6ML-GV-01, EU-6ML-GV-02	SC VI.1, SC VI.2	R336.1201, R 336.1205(3) R 336.1702
10. Hydrogen chloride (HCl)	2.4 pph	Hourly/Charging	EU-6ML-GV-01, EU-6ML-GV-02	SC V.1, SC VI.1, SC VI.2	R 336.1201

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario**</b>	<b>Equipment***</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
11. HCl	7.2 tpy	12-month rolling time period as determined at the end of each calendar month/Charging	EU-6ML-GV-01, EU-6ML-GV-02	SC VI.1, SC VI.2	R 336.1201, R 336.1205(3)
12. Chlorine (Cl <sub>2</sub> )	0.6 pph	Hourly/Charging	EU-6ML-GV-01, EU-6ML-GV-02	SC V.1, SC VI.1, SC VI.2	R 336.1201
13. Cl <sub>2</sub>	1.8 tpy	12-month rolling time period as determined at the end of each calendar month/ Charging	EU-6ML-GV-01, EU-6ML-GV-02	SC VI.1, SC VI.2	R 336.1201, R 336.1205(3)
14. PM10	0.08 lb/1,000 lb on a dry gas basis	Hourly/Fluxing, Drossing	EU-6ML-GV-01, EU-6ML-GV-02	SC V.1	R 336.1331
15. PM10	8.3 pph	Hourly/Fluxing, Drossing	EU-6ML-GV-01, EU-6ML-GV-02	SC V.1, SC VI.1, SC VI.2	R 336.1331
16. PM10	1.4 tpy	12-month rolling time period as determined at the end of each calendar month/Fluxing, Drossing	EU-6ML-GV-01, EU-6ML-GV-02	SC VI.1, SC VI.2	R 336.1331, R 336.1205(3)
17. CO	3.5 pph	Hourly/Fluxing, Drossing	EU-6ML-GV-01, EU-6ML-GV-02	SC V.1, SC VI.1, SC VI.2	R 336.1201
18. CO	0.64 tpy	12-month rolling time period as determined at the end of each calendar month/Fluxing, Drossing	EU-6ML-GV-01, EU-6ML-GV-02	SC VI.1, SC VI.2	R 336.1201, R 336.1205(3)
19. NOx	4.2 pph	Hourly/Fluxing, Drossing	EU-6ML-GV-01, EU-6ML-GV-02	SC V.1, SC VI.1, SC VI.2	R 336.1201
20. NOx	0.76 tpy	12-month rolling time period as determined at the end of each calendar month/Fluxing, Drossing	EU-6ML-GV-01, EU-6ML-GV-02	SC VI.1, SC VI.2	R 336.1201, R 336.1205(3)
21. VOC	0.92 pph	Hourly/Fluxing, Drossing	EU-6ML-GV-01, EU-6ML-GV-02	SC V.1, SC VI.1, SC VI.2	R 336.1201 R 336.1702
22. VOC	0.17 tpy	12-month rolling time period as determined at the end of each calendar month/Fluxing, Drossing	EU-6ML-GV-01, EU-6ML-GV-02	SC VI.1, SC VI.2	R 336.1201, R 336.1205(3) R 336.1702
23. HCl	2.2 pph	Hourly/Fluxing	EU-6ML-GV-01, EU-6ML-GV-02	SC V.1, SC VI.1, SC VI.2	R 336.1201
24. HCl	0.4 tpy	12-month rolling time period as determined at the end of each calendar month/Fluxing	EU-6ML-GV-01, EU-6ML-GV-02	SC VI.1, SC VI.2	R 336.1201, R 336.1205(3)
25. Cl <sub>2</sub>	0.5 pph	Hourly/Fluxing	EU-6ML-GV-01, EU-6ML-GV-02	SC V.1, SC VI.1, SC VI.2	R 336.1201

Pollutant	Limit	Time Period / Operating Scenario**	Equipment***	Monitoring / Testing Method	Underlying Applicable Requirements
26. Cl <sub>2</sub>	0.1 tpy	12-month rolling time period as determined at the end of each calendar month/ Fluxing	EU-6ML-GV-01, EU-6ML-GV-02	SC VI.1, SC VI.2	R 336.1201, R 336.1205(3)
27. Hydrogen Fluoride (HF)	1.9 pph	Hourly/Fluxing	EU-6ML-GV-01, EU-6ML-GV-02	SC V.1, SC VI.1, SC VI.2	R 336.1201
28. HF	0.34 tpy	12-month rolling time period as determined at the end of each calendar month/Fluxing	EU-6ML-GV-01, EU-6ML-GV-02	SC VI.1, SC VI.2	R 336.1201, R 336.1205(3)

\*\* Operating Scenario Definitions:

Holding: Molten aluminum is held at temperature waiting to be poured into molds.

Charging: Molten aluminum is being received from an outside supply into the furnace

Fluxing: Molten aluminum bath is in the process of chemical purification via the addition of HCl or HF flux media that attracts impurities and floats them to the surface for removal. Fluxing includes reaction time up to one hour after flux addition begins.

Drossing: The removal of the impurities (dross) from the surface of the molten aluminum after fluxing.

\*\*\* All limits apply to each furnace separately

## II. MATERIAL LIMIT(S)

1. The permittee shall not process more than 156.5 tons of injection and broadcast flux annually through FG-6ML-ALMELT based on a 12-month rolling time period, as determined at the end of each calendar month.<sup>1</sup> **(R 336.1225)**
2. The permittee shall only input through FG-6ML-ALMELT clean liquid aluminum, clean aluminum charges (ingots, sows, or pigs) or clean internal aluminum reruns (scrap, gating, sprue).<sup>1</sup> **(R 336.1225)**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall only actively add flux to one of the aluminum furnaces during any 1-hour period. Permittee shall not flux more than 180 hours per year per furnace of FG-6ML-ALMELT. The permittee shall not dross more than 180 hours per year per furnace of FG-6ML-ALMELT.<sup>1</sup> **(R 336.1225)**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

## V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Upon request from the AQD Supervisor, the permittee shall verify emission rates from the holding/charging operating scenario and the fluxing/drossing operating scenario by testing at owner's expense, in accordance with Department requirements. Verification of emission rates includes the submittal of complete report of the test results. **(R 336.1201(3), R 336.2001(a)(e))**
  - a) The permittee shall submit a complete test protocol to the AQD for approval at least 30 days prior to the anticipated test date. **(R 336.1201(3))**
  - b) The permittee shall notify the District Supervisor or the Technical Programs Unit no less than 7 days prior to the anticipated test date. **(R 336.2001(3))**
  - c) The permittee shall submit a complete test report of the test results to the District Supervisor or the Technical Programs Unit within 60 days following the last date of the test. **(R 336.2001(4))**

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall record monthly flux usage and duration in hours (rounded to 1/4 hour) of the fluxing for the aluminum furnaces (EU-6ML-GV-01, EU-6ML-GV-02). Fluxing includes reaction time up to one hour after flux addition begins. **(R 336.1205(3))**
2. The permittee shall record the monthly natural gas usage on the aluminum furnaces (EU-6ML-GV-01, EU-6ML-GV-02). **(R 336.1205(3))**

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SV-6ML-GV-01	60	71	40 CFR 52.21 (c) & (d)
2. SV-6ML-GV-02	60	71	40 CFR 52.21 (c) & (d)

**IX. OTHER REQUIREMENT(S)**

1. Visible emissions from the FG-6ML-ALMELT shall not exceed a 6-minute-average of 10% opacity, except during flux and dross on the two reverberatory furnaces, where opacity may not exceed 20%, except for one 6-minute average of 27%. **(R 336.1301(c))**

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**FG-FACILITYPM  
 FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

Particulate emissions associated with the facility.

**Emission Unit:** EU-6ML-EF-02, EU-6ML-GV-01, EU-6ML-GV-02, EU-PSANDALUMINUM, EU-PSANDPROCESS, EU-PSANDCORERROOM, EU-PSANDCASTLINE, EU-SPMCASTLINE4, EU-PSANDSH, EU-FINISH, EU-SPMALUMINUM, EU-SPMPROCESSAND, EU-SPMCORERROOM, EU-SPMCASTLINE, EU-PREMACHINING, EU-MACHASM

**POLLUTION CONTROL EQUIPMENT**

Various collection and control equipment for each emission unit.

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. PM	128.99 tpy	12-month rolling time period as determined at the end of each calendar month	FG-FACILITYPM	SC VI.1	R 336.1331(1)(c)
2. PM10	132.94 tpy	12-month rolling time period as determined at the end of each calendar month	FG-FACILITYPM	SC VI.1	R 336.2810, 40 CFR 52.21 (c) & (d)
3. PM2.5	132.94 tpy	12-month rolling time period as determined at the end of each calendar month	FG-FACILITYPM	SC VI.1	R 336.2810, 40 CFR 52.21 (c) & (d)

**II. MATERIAL LIMIT(S)**

NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

NA

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

NA

**V. TESTING/SAMPLING**

NA



**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall monitor and record, in a satisfactory manner, all data as specified in the following table. (R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21)

<b>Equipment</b>	<b>Parameter</b>	<b>Time Frame Basis</b>
a) FG-FACILITYPM	PM, PM10, and PM2.5 in tpy	Monthly and 12-month rolling time period as determined at the end of each calendar month

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

NA

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).