

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: US Steel Corp - Keetac  
 Permit Number: 13700063 - 004

**Subject Item: GP 019 Mercury Requirements**

- Associated Items:**
- CE 122 Electrostatic Precipitator - High Efficiency
  - CE 123 Electrostatic Precipitator - High Efficiency
  - CE 124 Electrostatic Precipitator - High Efficiency
  - CE 134 Activated Carbon Adsorption
  - CE 151 Activated Carbon Adsorption
  - EU 068 Grate Kiln - DDD1
  - EU 069 Grate Kiln - DDD2
  - EU 070 Grate Kiln - TPH
  - SV 058 Grate Kiln - DDD1 & Duct Burners
  - SV 059 Grate Kiln - DDD2
  - SV 060 Grate Kiln - TPH

What to do	Why to do it
INSTALLATION OF MERCURY REDUCTION TECHNOLOGY	hdr
Initial Startup: due 365 days after Initial Startup of GP007. The Permittee shall install and begin operation of an activated carbon injection (ACI) system, CE134 and CE151 on EU068 and EU070 for reduction of mercury emissions within 365 days after initial startup of GP007.	Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 2, 14 and 16(J)
If the Permittee is to install a mercury reduction technology other than activated carbon injection, an engineering evaluation showing that the alternative technology will provide at least the same mercury emissions reduction as an activated carbon injection system must be submitted to the MPCA for approval within 6 months prior to start of construction of the mercury reduction technology.	Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subp. 16(L)
MERCURY REDUCTION TECHNOLOGY OPERATION AND MAINTENANCE	hdr
Once installed the Permittee shall operate and maintain CE134 and CE151 any time the associated process equipment is in operation. The Permittee shall document periods of non-operation of the reduction equipment.	Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 2, 4, 14 and 16(J)
Operation and Maintenance of CE134 and CE151: The Permittee shall at all times operate and maintain CE134 and CE151 in accordance to a written O&M Plan. The Permittee shall keep copies of the O&M Plan available onsite and must be available for inspection upon request.	Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 2, 4 and 16(j)
MERCURY EMISSION LIMITS	hdr
<p>Mercury: less than or equal to 75.5 lbs/year using 12-month Rolling Sum . Referred to as the Initial Total Mercury Emission Limit, the combined mercury emissions from GP007 shall be less than or equal to 75.5 lbs/year using a rolling 12 month sum. This limit applies upon initial startup of GP007.</p> <p>For the first 11 months of operation, mercury emissions are limited as determined by the following equation:</p> $Hg = 6.475 + 6.275 * M$ <p>where</p> <p>Hg = mercury emissions in pounds since initial startup of GP007                      M = number of months after initial startup (i.e., for the first month, M = 0)</p> <p>The Initial Total Mercury Emission Limit shall remain in effect until the MPCA issues a permit that incorporates a mercury reduction reasonably expected to be achieved from the demonstration report.</p>	Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 2, 4, 5, and 16(J)
Mercury Emissions Reduction Goal: The mercury emissions reduction goal for EU068 & EU070 is to install, operate and maintain mercury control equipment to remove at least 80% of uncontrolled mercury emissions.	Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 2, 4, 5, and 16(J)
MERCURY REDUCTION TECHNOLOGY DEMONSTRATION	hdr

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<p>Demonstration Completion: due 365 days after Initial Startup of CE134 and CE151. The Permittee shall perform a demonstration of the installed mercury reduction technology in accordance with an approved mercury reduction technology demonstration test plan. The demonstration shall be completed within 365 days after initial startup of CE134 and CE151. The demonstration shall include, at a minimum a sufficient level of monitoring and recordkeeping to report the parameters required in the mercury reduction technology demonstration report that can be found in Table B. The Permittee shall optimize the operation of the equipment installed under an approved mercury reduction technology demonstration test plan to demonstrate the ability to achieve the Mercury Emissions Reduction Goal.</p>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 4 and 16(L)</p>
<p>The mercury reduction technology demonstration report, required in Table B shall propose a reasonably expected mercury reduction, if the demonstration results indicate that the Mercury Emissions Reduction Goal is not achievable.</p>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 2, 6 and 16(L)</p>
<p>MERCURY PERFORMANCE TESTING</p>	<p>hdr</p>
<p>Initial Performance Test: due 180 days after Initial Startup of GP007 to measure mercury emissions from EU068, EU069, and EU070 to demonstrate compliance with the Initial Total Mercury Emission Limit in lbHg/year.</p> <p>The purpose of the initial performance test to measure mercury emissions from EU069 is to determine if mercury is emitted from EU069. If the initial performance test to measure mercury emission determines that mercury is emitted from EU069, subsequent performance testing on EU069 will be required.</p>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 4, 5, and 16(J)</p>
<p>Performance Test: due before end of each year following Initial Performance Test for mercury on EU068, EU069, and EU070. Under this requirement the Permittee shall conduct a minimum of four mercury performance test events per year spaced a minimum of 30 days apart from the previous performance test event. The initial mercury test event shall count toward the four test events required in the first year of mercury testing (i.e. 3 required test events remain in the first year of testing after the initial performance test event has been completed). Notwithstanding, if the initial performance test event for mercury on EU069 determines that no mercury is emitted from EU069, reoccurring mercury performance tests will not be required on EU069 under this requirement.</p> <p>"test event" shall mean a single mobilization of performance tests on each unit; EU068, EU069, and EU070 in which the tests on each of the units be conducted simultaneously to the extent practicable.</p> <p>"year" shall mean a consecutive 365 day period which begins on the date of the initial performance test.</p>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 4, 5, and 16(J)</p>
<p>MERCURY MONITORING, RECORDKEEPING, REPORTING</p>	<p>hdr</p>
<p>The Permittee shall develop and make available for inspection, a site-specific monitoring plan that addresses the following:</p> <ol style="list-style-type: none"> <li>1) Installation of the Continuous Parametric Monitoring System (CPMS) sampling probe or other interface at a measurement location representative of reduction of the exhaust emissions. The CPMS shall be installed and operational prior to startup of the associated mercury reduction technology, CE134 and CE151.</li> <li>2) Performance and equipment specifications for the sample interface, the parametric signal analyzer, and the data collection and reduction system.</li> <li>3) Performance evaluation procedures and acceptance criteria.</li> <li>4) Ongoing operation and maintenance procedures.</li> <li>5) Ongoing data quality assurance procedures.</li> <li>6) Ongoing recordkeeping and reporting procedures.</li> <li>7) Corrective action procedures to be followed in the event an air pollution reduction device exceeds an operating limit.</li> </ol>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 4, 5, 6, 14, and 16(J)</p>
<p>The Permittee shall install, operate, and maintain each CPMS and monitor the daily average of the operating parameter(s) identified in the Mercury Reduction Technology Demonstration Report at all times that the associated mercury reduction technology is in operation. The Permittee shall keep records of the daily average operating parameter(s).</p>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 4, 5, 14, and 16(J)</p>
<p>The Permittee shall install and operate each CPMS such that the CPMS completes a minimum of one cycle of operation for each successive 15-minute period and determines and records valid data for at least 95 percent of every daily averaging period. Each CPMS must also determine and record the daily average of all recorded readings.</p>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 4, 5, 14, and 16(J)</p>
<p>The Permittee shall operate and maintain each CPMS and conduct a performance evaluation of each CPMS in accordance with the site-specific monitoring plan.</p>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 4, 5, 14, and 16(J)</p>

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<p>The Permittee shall establish and maintain the daily average site-specific operating parameters upon MPCA approval of the Mercury Reduction Technology Demonstration Report. The Permittee shall measure and record the parameter(s) specified in the Mercury Reduction Demonstration Report during each of the runs of the mercury performance test. The operating limits are established as the lowest average of the specified parameter(s) corresponding to any of the test runs that demonstrate compliance with the mercury emission limit.</p>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 2, 4, 5, 14, and 16(J)</p>
<p>The Permittee may change the site specific operating limits if the Permittee:                  1) submits a written notification to the MPCA requesting to conduct a new performance test to revise the operating limit.                  2) conduct a performance test to demonstrate compliance with the applicable emission limitation.                  3) establishes revised operating limits according to the method in the previous requirement.</p>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 2, 4, 5, 14, and 16(J)</p>
<p>The Permittee shall maintain a record of the established operating parameter(s) measured during the performance test.</p>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 4, 5</p>
<p>The Permittee shall perform preventative maintenance for the mercury reduction technology.</p>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 14 and 16(J)</p>
<p>The Permittee shall also initiate and complete corrective action as soon as practicable for a CPMS as specified in the site-specific monitoring plan when an established operating limit for the mercury reduction technology is exceeded. The Permittee shall keep records of all information needed to document conformance with these requirements.</p>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 5, 14 and 16(J)</p>
<p>Mercury Calculation and Recordkeeping: By the 15th day of each month, the Permittee shall calculate and record the monthly mercury emissions for the previous 12 calendar months.                   The Permittee shall maintain a written record of the monthly mercury emission calculations.</p>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 2, 4, 5, 14 and 16(J)</p>
<p>The Permittee shall maintain records of the annual pellet production rate (short ton/year) and the annual and monthly mercury emissions from GP007.</p>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subps. 4 and 5</p>
<p>Recordkeeping: The Permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility including; any malfunction or period of non-operation of the air pollution reduction equipment; or any periods during which a CPMS or monitoring device is inoperative.</p>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subp. 5</p>
<p>Recordkeeping: The Permittee shall maintain a file of all measurements, maintenance, reports and records for at least five years.</p>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subp. 5</p>
<p>Reporting: The Permittee shall include the monthly mercury emission calculations in the annual emission inventory report.</p>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subp. 6</p>
<p>Reporting: All deviations, including deviations from the rolling 12 month mercury emission limit shall be reported in the semiannual deviations report.</p>	<p>Minn. Stat. 116.07 subd. 4a(a); Minn. R. 7007.0800, subp. 6</p>