

**PERMIT NO. 66329  
(SIGNIFICANT PERMIT REVISION TO PERMIT NO. 1000042)  
ASARCO LLC – HAYDEN SMELTER**

**SIGNIFICANT PERMIT REVISION DESCRIPTION**

This Significant Permit Revision No. 66329 to Operating Permit No. 1000042 is issued to the ASARCO LLC - Hayden Operations for replacing the existing acid plant pre-heater with a 200 million Btu/hour unit.

**ADDENDA – SIGNIFICANT PERMIT REVISION NO. 66329**

*Section VIII of Permit No. 1000042 is revised and shall read as below:(All the changes from the current permit are in red font)*

**VIII. FUEL BURNING EQUIPMENT**

**A. Anode Steam Boiler/Acid Plant Preheater/Oxygen Plant Boiler**

**1. Fuel Limitation**

The Permittee shall only fire natural gas as fuel in all the affected units under this Section.

[A.A.C. R18-2-306.A.2]

**2. Operational Limitation**

- a. *The Permittee shall not fire natural gas in the acid plant preheater in excess of 460 million standard cubic feet (MMscf) per year based on a 365-day rolling total.*

[A.A.C. R18-2-306.01 and 331.A.3.a]

[Material Permit Conditions are indicated by italics and underline]

- b. The Permittee shall maintain records of the fuel firing rate (cubic feet per hour of natural gas) for each affected facility under this section.

[A.A.C. R18-2-306.A.4]

- c. *The Permittee shall maintain a daily 365 day rolling total of the fuel being combusted in the acid plant preheater in order to demonstrate compliance with the annual fuel limitation requirement in Condition VIII.A.2.a above.*

[A.A.C. R18-2-306.A.4]

**3. Particulate Matter and Opacity**

**a. Emission Standards**

- (1) The Permittee shall not cause, allow or permit the emission of particulate matter, caused by combustion of fuel from operation of the acid plant preheater, the anode steam boiler, and/or the oxygen plant boiler, in excess of the amount calculated by the following equation:

[A.A.C. R18-2-724.C.1]

$$E = 1.02 Q^{0.769}$$

Where:

E= The maximum allowable particulate emissions rate in pounds-mass per hour.

Q= The heat input in million Btu per hour.

- (2) For purposes of this Part, the heat input shall be the aggregate heat content of all fuels whose products of combustion pass through a stack or other outlet. The total heat input of all fuel-burning units on a plant or premises shall be used for determining the maximum allowable amount of particulate matter which may be emitted.

[A.A.C. R18-2-724.B]

- (3) The Permittee shall not cause, allow or permit to be emitted into the atmosphere any plume or effluent from the Acid Plant Preheater, the anode steam boiler, and/or the oxygen plant boiler, the opacity of which exceeds 15 percent.

[A.A.C. R18-2-724.J]

b. Monitoring, Recordkeeping and Reporting Requirements

- (1) A certified EPA Reference Method 9 observer shall conduct a monthly survey of visible emissions emanating from the stacks of the acid plant preheater, the anode steam boiler, and/or the oxygen plant boiler, when in operation. If the opacity of the emissions observed appears to exceed the 15 percent standard specified in VIII.B.1.a, the observer shall conduct a certified EPA Reference Method 9 observation. The results of the Method 9 observation shall be maintained.

[A.A.C. R18-2-306.A.3.c]

- (2) For the purpose of reports under excess emissions reporting required by Section XI.A, Attachment "A" of this permit, The Permittee shall report all six-minute periods in which the opacity of any plume or effluent from the acid plant preheater, the anode steam boiler, and/or the oxygen plant boiler of this section exceeds 15 percent.

[A.A.C. R18-2-724.J]

- (3) The Permittee shall maintain a vendor-provided copy of that part of the Federal Energy Regulatory Commission (FERC) approved Tariff agreement that contains the lower heating value of the natural gas.

[A.A.C. R18-2-306.A.3.c]

4. Sulfur Dioxide (SO<sub>2</sub>)

a. Emission Limitations and Standards

The Permittee shall not emit or cause to emit more than 1.0 pound of sulfur dioxide per million Btu.

[A.A.C. R18-2-724.E]

b. Monitoring, Recordkeeping and Reporting Requirements

Permittee shall maintain a vendor-provided copy of that part of the Federal Energy Regulatory Commission (FERC) approved tariff agreement that contains the sulfur content.

[A.A.C. R18-2-306.A.3.c]

5. Nitrogen Oxides

a. Emission Limitations and Standards

*The Permittee shall not emit or cause to emit more than 0.17 pounds per MMBtu of nitrogen oxides from the acid plant preheater.*

[A.A.C. R18-2-306.01 and 331.A.3.a]

[Material Permit Conditions are indicated by italics and underline]

b. Performance Test Requirements

(1) Within 60 days of achieving the maximum throughput, but not later than 180 days of the startup of the acid plant preheater, unless otherwise required by Condition VIII.A.5.b(2) the Permittee shall conduct a performance test for nitrogen oxides in accordance with EPA reference Method 7 to demonstrate compliance with nitrogen oxides emission standard in VIII.A.5.a. The performance test shall be repeated annually (between 11 and 13 months of the previous performance test).

[A.A.C. R18-2-312]

(2) If during any performance test, the nitrogen oxides emissions exceed 90% of the emission limit in Condition VIII.A.5.a, the Permittee shall conduct a subsequent performance test within six months.

[A.A.C. R18-2-306.A.3.c]

c. Monitoring, Recordkeeping and Reporting Requirements

The Permittee shall record and report to the Director the actual emission increase for NOx resulting from the acid plant preheater. The report shall be done in accordance with R18-2-402.F.3. The report shall be prepared on a calendar year basis for 5 years from the year of installation, and reported by March 1 for each prior calendar year. The first report shall be due March 1, 2019. The Permittee shall calculate and record annual nitrogen oxides emissions based on the daily fuel consumption, and the average emission rate from the three most recent performance tests, if available.

[A.A.C. R18-2-306.A.4, A.5 and R18-2-402.F.3]

6. Permit Shield

Compliance with the conditions of this Part shall be deemed compliance with A.A.C. R18-2-402.F.3, -724.B, 724.C.1, 724.E and 724.J.

[A.A.C. R18-2-325]

**B. Anode Launder Burners and Anode Ladle Burners**

**1. Fuel Limitation**

The Permittee shall only use natural gas as fuel in all the affected units under this Section.

[A.A.C. R18-2-306.A.2]

**2. Particulate Matter**

**a. Emission Standards and Limitations**

- (1) The Permittee shall not cause, allow or permit the discharge of particulate matter into the atmosphere in any 1 hour from any anode launder burners and/or any anode ladle burners under this section in total quantities in excess of the amounts calculated by 1 of the following equations:

[A.A.C. R18-2-730.A.1 and B]

- (a) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$$E = 4.10P^{0.67}$$

Where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

P = the process weight rate in tons-mass per hour.

- (b) For process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$$E = 55.0P^{0.11} - 40$$

Where "E" and "P" are defined as indicated in subsection (A)(1)(a).

- (c) For purposes of this section, the total process weight from all similar units employing a similar type process shall be used in determining the maximum allowable emission of particulate matter.

- (2) The Permittee shall not cause, allow or permit to be emitted into the atmosphere any plume or effluent from the anode launder burners and/or the anode ladle burners, the opacity of which exceeds 20 percent, as determined by Reference Method 9 in 40 CFR 60, Appendix A.

[A.A.C. R18-2-702.B.1]

3. Sulfur Dioxide

The Permittee shall not cause, allow or permit the emission of sulfur dioxide from any anode launder burners and/or any anode ladle burners under this section at rates greater than 600 parts per million.

[A.A.C. R18-2-730.A.2]

4. Nitrogen Oxides

The Permittee shall not cause, allow or permit the emission of nitrogen oxides from any anode launder burners and/or any anode ladle burners under this section at rates greater than 500 parts per million, expressed as NO<sub>2</sub>.

[A.A.C. R18-2-730.A.3]

5. Permit Shield

Compliance with the terms of this Part shall be deemed compliance with A.A.C. R18-2-730.A, 730.B, 702.B.1, 730.A.2 and 730.A.3.

[A.A.C. R18-2-325]

**ATTACHMENT “C”: EQUIPMENT LIST**

**Air Quality Control Permit No. 66329  
 (Significant Permit Revision to Permit No. 1000042)  
 for  
 ASARCO LLC – HAYDEN SMELTER**

**EQUIPMENT LIST**

*Following equipment is added to the equipment list for Permit No. 1000042 as revised by Significant Permit Revision No. 66329:*

<b>EQUIPMENT</b>	<b>CAPACITY</b>	<b>MAKE</b>	<b>MODEL</b>	<b>SERIAL NUMBER</b>	<b>YEAR OF MANUFACTURE</b>
Acid plant preheater (Natural gas fired)	200 MMBtu per hour	TBD	TBD	TBD	TBD