

Utah Department of Environmental Quality  
Division of Air Quality  
FACT SHEET



**Kennecott Utah Copper**  
**Intent to Approve Number DAQE-IN0103460043-09**  
**Dated December 2, 2009**

**Install Slag Granulation Scrubbers**  
**Increase Secondary Ventilation Scrubber Liquid Flow Rate**  
**Add Coherent Jet Lances to the Smelter Anode Refining Furnaces**  
**Replace Power House Super Heater Burner with an Ultra Low NOx Burner**

January 2010

**Regulatory Program**

The Utah Division of Air Quality (DAQ) prepares and issues air quality permits to construct and operate process units and equipment that are sources of air pollution. These permits are called Approval Orders or AOs. Any modification to a facility operation or a process unit requires the company to obtain a new AO to address the changes in operation or emissions.

**Source Description**

Kennecott Utah Copper LLC (KUC) is a leading producer of copper and valuable by-products: gold, silver and molybdenum from the ores of the Bingham Canyon Mine. Copper is refined from the ore by heating and oxidation.

**Intent to Approve**

Intent to Approve DAQE-IN0103460043-09, proposes to incorporate four changes to smelter equipment and operations. DAQ has reviewed these requested changes and determined they will have minimal impact on air quality and continue to meet the permitted levels that are set to protect public health. The emissions, in tons per year (tpy), will change as follows:  $PM_{10} = +0.47$ ,  $CO = +7.13$ ,  $NO_x = -0.51$ , and  $VOC = +0.48$ . The changes are identified below:

**Replace Matte and Slag Granulation Scrubbers**

The current permitted design for these scrubbing systems is a two-staged variable venturi design. These scrubbing systems have not yet been installed and so the matte and slag granulators are currently vented into the secondary gas

system. KUC is proposing to replace the design with a three-stage impingement plate scrubber for both the Matte and the Slag units. **The proposed design would improve the efficiency of particulate collection from the granulation units, reducing particulate emissions to the workspace and the atmosphere.**

**Increase Secondary Ventilation scrubber flow rate**

Currently the Secondary Gas System (SGS) Scrubber pressure drop limit is 3.5 – 12 inches water column. KUC collected and analyzed data during SGS scrubber pump tests and determined that running two scrubber circulation pumps would increase the scrubber recirculation flow rate. **Increasing the flow rate increases the pollution removal efficiency of the SGS and ultimately results in lower sulfur dioxide (SO<sub>2</sub>) emissions from the Smelter main stack.** The upper pressure drop limit in the current AO prohibits the desired flow rate increase. KUC requested that the upper limit be increased from 12” to 24”. DAQ determined that an upper pressure drop limit does not help limit the SO<sub>2</sub> rate or improve the scrubber collection efficiency and removed the upper pressure drop limit from the draft AO.

**Add Coherent Jet lances to the Smelter Anode Refining Furnaces**

Adding Co-Jet lances to the Smelter Anode Refining Furnaces will improve efficiency in the processing of secondary scrap in the anode furnaces, provide additional heating capabilities,

and improved furnace maintenance capabilities. **The addition of Co-Jet technology to the furnaces provides an additional gas injection method and may reduce the natural gas fuel consumption.**

**Telephone: 801-536-4000**

**Replace power house super heater burner with an ultra low NOx burner**

The EPA has determined that low NOx burners meet the Best Available Control Technology (BACT) for natural gas fired heaters. At the KUC Smelter, the existing burner on the Power House natural gas fired super heater will be replaced with an ultra low NOx burner. **This will result in lower NOx emissions from the super heater.** Emissions of PM10, carbon monoxide and volatile organics will slightly increase.

**Public Comment:**

The Intent to Approve is available for public viewing at:

<http://www.airquality.utah.gov/Permits/DOCS/IN010510024-09.pdf>

or at the UDAQ office located at:

Utah Division of Air Quality  
150 North 1950 West  
Salt Lake City, Utah.

The comment period for this action started on December 6, 2009. The comment period is being extended until after the hearing and will close on January 17, 2010.

A public hearing on the Intent to Approve will be held on January 12, 2010 at 6:30 at the Magna Chamber of Commerce, 9145 W 2700 S, Magna, UT.

**Additional Information**

If you would like more detailed information please contact:

**Nando Meli or Martin Gray**