Rosemont Copper Company

Amendment to:
Application for a Class II Permit and Emission Inventory Information
Rosemont Copper Project
Southeastern Arizona

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1. INTRODUCTION

On Tuesday, November 15, 2011, Rosemont Copper Company (RCC) submitted to the Arizona Department of Environmental Quality (ADEQ) a Class II Permit Application entitled "*Application for a Class II Permit, Rosemont Copper Project, Southeastern Arizona*" and the associated Emission Inventory Information entitled "*Emission Inventory Information, Years 1, 5, 10, 15, and 20, Volumes I and II, Rosemont Copper Project, Southeastern Arizona*". In the Class II Permit Application, the RCC proposed to construct and operate an open-pit mining, milling, leaching, and solvent extraction/electrowinning facility, known as the Rosemont Copper Project (RCP).

Since submittal of the application, the RCC has made several refinements to the design of the RCP. The refinements can be divided into the following two categories:

a. Refinements to process operations; and

b. Refinements to pollution control devices including replacement of wet scrubbers with cartridge filter dust collectors.

The net effect of the refinements reduces the potential to emit of PM_{10} from 66.81 to 39.03 tons/year. Fugitive emissions are also reduced, but to a much lesser extent.

This document presents the information necessary to identify and describe the refinements in design and amend the affected sections of RCC's Class II Permit Application and the associated Emission Inventory Information. Sections 2 and 3 of this document identify and describe the refinements to process operations and pollution control devices, respectively. Section 4 includes the amended parts of RCC's Class II Permit Application. Section 5 includes the amended parts of RCC's Emission Inventory Information. A certification of truth, accuracy, and completeness is presented in Appendix A.

2. DESCRIPTION OF THE REFINEMENTS TO PROCESS OPERATIONS

Following submittal of the Class II Permit Application, the RCC reviewed all process operations at the RCP and made several refinements in design. Detailed descriptions of each refinement are presented in the following sections. The overall effect of the refinements to process operations is better pollution controls and a reduction in particulate matter and tailpipe emissions. Amendments to RCC's Class II Permit Application and associated Emission Inventory Information are presented in Section 4 and 5, respectively. These sections describe the refinements in design and subsequent change in emissions.

2.1 PAVING

The original road system at the RCP was comprised entirely of unpaved roads. Additional controls to be implemented to this road system include paving the 3.1 mile entrance road leading to the RCP and several other industrial roads within the facility. The bulk of the remaining roads will be used by haul trucks and cannot be paved due to the weight of the trucks destroying the paving.

The types of vehicles to be used at the RCP include the following:

- Haul trucks;
- Bulldozers;
- Graders;
- Water trucks; and
- Support vehicles.

Support vehicles are further divided into drills, loaders, heavy duty diesel trucks, excavators, cranes, forklifts, shipment and delivery vehicles, and personnel pickup trucks and vans. Except for the shipment and delivery vehicles and the personnel pickup trucks and vans, it is assumed as a worst case estimate that all other vehicles will use only the unpaved roads at the RCP. All routes used by the shipment and delivery vehicles will be paved including the entrance road plus the shipment/delivery roads within the facility. Additionally, it is conservatively estimated that the personnel pickup trucks and vans will use the paved roads 90% of the time.

Since the Class II Permit Application and the Emission Inventory Information assumed all unpaved roads at the RCP, emission calculations need to be amended to incorporate the use of paved roads. As mentioned above, only the support vehicles category will be affected by the addition of paving. The emission unit ID for support vehicle use is MN15. To include the affect of paving, the support vehicle use will be broken into two main categories, support vehicle use on unpaved roads (amended Emission Unit ID MN15) and support vehicle use on paved roads (added Emission Unit ID MN16). Amended emission tables for the RCP incorporating the use of paved roads are presented in Appendix F. As a worst case emission estimate, revised emission calculations will not include any reduction to water truck use due to paving.

2.2 HAUL TRUCK ENGINES

Over the life of the mine, the RCP will use a maximum of thirty-one haul trucks for transporting concentrate ore, leach ore, and waste rock out of the mine and to the appropriate processing and storage locations. Twenty-five haul trucks are needed through Year 10 of the life of the mine with the remaining six haul trucks to begin use in Year 11.

The RCC has already purchased twenty-five haul trucks from Empire Southwest LLC. These haul trucks include the use of Tier 2 engines. At the time of the submittal of RCC's Class II Permit Application, it was assumed that the remaining six haul trucks to be purchased would also use Tier 2 engines.

Upon review of the RCP operations, however, the RCC has decided to commit to using Tier 4 engines in the remaining six haul trucks to be purchased. The emission standards for Tier 4 engines are stricter than those for Tier 2 engines. Therefore, the commitment to using Tier 4 engines in six of the thirty-one haul trucks will reduce particulate matter and several gaseous pollutant emissions from the haul truck tailpipes.

The Emission Inventory Information document included tables used to calculate emissions from mobile engines. These tables have been revised to include the use of six Tier 4 haul trucks. The haul truck entry in the emission tables has been broken into two categories, haul trucks with Tier 2 engines and haul trucks with Tier 4 engines, to calculate emissions from each category of haul truck engine. The amended emission tables are presented in Appendix F.

2.3 REPLACEMENT OF STOCKPILE TRIPPER CONVEYOR

The original design of the primary crushing system, as submitted in RCC's Class II Permit Application, included the use of the crusher discharge feeder, stockpile feed conveyor, and stockpile tripper conveyor to convey ore processed by the primary crusher to the coarse ore stockpile (see Figure B.2 of application). The stockpile tripper conveyor received ore from the stockpile feed conveyor within the stockpile building.

The RCC has decided to refine the design of the primary crushing system by replacing the stockpile tripper conveyor with a regular conveyor. In order to avoid potential confusion, this conveyor is named the stockpile feed conveyor No. 2 while the stockpile feed conveyor from the original design is renamed the stockpile feed conveyor No. 1. Additionally, the discharge onto the stockpile feed conveyor No. 2 will now occur outside of the stockpile building.

The redesigned conveying system for primary crushing operation showing the replacement of the stockpile tripper conveyor with stockpile feed conveyor No. 2 is presented in amended Figure B.2 of Appendix D of this document. Although the emission unit descriptions of Emission Unit IDs PC06, PC07, and PC08 are amended, emission calculations are unaffected since the number of material transfer points remains the same and continue to be controlled by a control device.

2.4 LIME SYSTEMS

The RCC's Class II Permit Application identified two separate lime systems. The first system consisted of a bulk pebble lime silo and an enclosed bulk pebble lime silo screw conveyor to load pebble lime directly onto the SAG mill feed conveyor (see Figure B.2 of the application). The second system consisted of a lime storage bin, enclosed lime transfer screw conveyor, and a lime slurry tank (see Figure B.16 of the application).

RCC has decided to refine the design of the lime systems by eliminating the loading of pebble lime directly onto the SAG mill feed conveyor. Instead all lime will be slaked for distribution to the various processes. Lime will be loaded into the lime storage bin (utilizing a bin vent) and conveyed via enclosed lime transfer screw conveyors to two lime slakers. The slaked lime will be transferred to a milk of lime tank prior to distribution into the various processes. Additionally, a lime slaker scrubber will be added to control particulate matter emissions from the lime slaking processes. Emission Unit IDs MS01 through MS04 will be affected by this refinement and will be revised to correspond to the following emission sources:

- Emission Unit ID MS01: Transfer of Lime to the Lime Storage Bin;
- Emission Unit ID MS02: Lime Storage Bin to Lime Transfer Screw Conveyors 1 and 2;
- Emission Unit ID MS03: Lime Transfer Screw Conveyors 1 and 2 to Lime Slakers 1 and 2; and
- Emission Unit ID MS04: Lime Slaking in Lime Slakers 1 and 2.

The redesigned lime system is presented in amended Figure B.16 of Appendix D of this document. There will be no change in lime usage due to the refined design of the lime system. Amended emission tables for the RCP incorporating the refined lime system are presented in Appendix F.

2.5 ELECTROWINNING CELL PROCESS

The electrowinning process at the RCP has the potential to emit H_2SO_4 and cobalt compounds. In the Class II Permit Application, the RCC proposed to control these emissions with the use of six cell ventilation scrubbers (see Figure B.14 of application). During RCC's reevaluation of the design of the electrowinning process, it was determined that the use of six scrubbers was excessive and the use of two scrubbers was more than satisfactory to control H_2SO_4 and cobalt compound emissions from electrowinning. It is expected that the use of two scrubbers will still control emissions from electrowinning with a 99% control efficiency. A third scrubber will be installed to provide redundancy when one of the other two scrubbers is required to be shut down for maintenance activities.

The redesigned cell ventilation system showing the use of two scrubbers (plus one backup) is presented in amended Figure B.14 of Appendix D of this document. There will be no change in emission calculations due to the use of two scrubbers instead of six.

3. DESCRIPTION OF THE REFINEMENTS TO THE POLLUTION CONTROL DEVICES

As identified in the RCC's Application for a Class II Permit, the original design of the RCP (see Table 8.1 of application) included the use of six wet scrubbers (PCL01, PCL02, PCL03, PCL04, PCL05, PCL06), one cyclone scrubber (PCL07), one baghouse (PCL08), and one electrostatic precipitator (PCL07) to control particulate matter emissions from the metallic mineral processing operations. At the time of the submittal of the application, the RCC was investigating the possible replacement of the wet scrubbers with dust collectors or baghouses. At this time, the RCC has decided to refine the design of the pollution control devices used at the RCP and will replace the six wet scrubbers with seven cartridge filter dust collectors. Additionally, it has been decided that the above mentioned baghouse (PCL08) will also be a cartridge filter dust collector. Due to the high control efficiency of the cartridge filter dust collectors and the consequent confidence to accept stricter emission limits, the refinements will reduce potential and actual particulate matter emissions from major metallic mineral processing operations at the RCP.

The following sections present detailed information about the use of cartridge filter dust collectors at the RCP. Amendments to the RCC's Class II Permit Application and associated Emission Inventory Information are presented in Section 4 and 5, respectively, to address the refinements in design and subsequent change in emissions.

3.1 USE OF CARTRIDGE FILTER DUST COLLECTORS

The refined design of the pollution control devices at the RCP will include the use of eight cartridge filter dust collectors to control particulate matter emissions from major metallic mineral processing operations at the RCP. Seven of the cartridge filter dust collectors will be used instead of the following six wet scrubbers:

- Emission Unit ID PCL01: Crushing Area Scrubber;
- Emission Unit ID PCL02: Stockpile Area Scrubber;
- Emission Unit ID PCL03: Reclaim Tunnel Scrubber;
- Emission Unit ID PCL04: Pebble Crusher Area Scrubber;
- Emission Unit ID PCL05: Copper Concentrate Scrubber 1; and
- Emission Unit ID PCL06: Copper Concentrate Scrubber 2.

Four of the cartridge filter dust collectors will directly replace the crushing area scrubber, pebble crusher area scrubber, and copper concentrate scrubbers 1 and 2. This amendment will use similar names and the same emission unit ID as the scrubbers they are replacing. The stockpile area scrubber and reclaim tunnel scrubber will be replaced by a single dust collector, renamed as the stockpile area and reclaim tunnel dust collector, and will retain the emission unit ID of PCL02. Finally, two additional cartridge filter dust collectors will be used during the scrubber replacement process to reduce the burden of the stockpile area and reclaim tunnel dust collector and the pebble crusher area dust collector. These dust collectors are named the stockpile feed conveyor transfer point dust collector and the SAG feed conveyor dust collector and will use emission unit IDs PCL03 and PCL12,

respectively. These dust collectors and emission units being controlled are shown in amended Figures B.2, B.3 and B.8 of Appendix D of this document. The emission unit ID and the name of the seven dust collectors replacing the six wet scrubbers is presented in Table 3.1.

The molybdenum dust collector (Emission Unit ID PCL08) is the eighth cartridge filter dust collector to be used in the refined design of the RCP. Table 3.1 includes the molybdenum dust collector for completeness.

Due to the use of the dry cartridge filter dust collectors, the secondary water spray controls at the discharges to the crusher discharge feeder, stockpile feed conveyor No. 1 (previously the stockpile feed conveyor), stockpile feed conveyor No. 2 (previously the stockpile tripper conveyor), and SAG mill feed conveyor must be eliminated. The water sprays were to be used to control any fugitive emissions not captured by the wet scrubber systems. However, potential emissions were calculated assuming the wet scrubbers would capture emissions with a 100% efficiency and the controls from the water sprays were not considered. Revised emission calculations considering the use of dust collectors instead of scrubbers are calculated similarly (100% capture efficiency of the dust collectors is assumed). Therefore, potential emission calculations will not change with the elimination of the water sprays.

Complete emission tables for the RCP incorporating the use of the eight cartridge filter dust collectors are presented in Appendix F.

3.2 EMISSION UNITS CONTROLLED

As described in Section 3.1, four of the wet scrubbers will be directly replaced by four dust collectors, two of the scrubbers will be replaced by one dust collector, and two additional dust collectors will be used to reduce the burden of the stockpile area and reclaim tunnel dust collector and the pebble crusher area dust collector by controlling emission units previously designed to be controlled by the stockpile area scrubber and the pebble crusher area scrubber. The emissions units controlled by these dust collectors are shown in amended Figures B.2, B.3 and B.8 of Appendix D of this document. Additionally, a description of the emission units controlled by each of the seven dust collectors identified above is presented in Table 3.2.

Please note the several emission units previously controlled by the stockpile area scrubber and the pebble crusher area scrubber now being controlled by the stockpile feed conveyor transfer point dust collector and the SAG feed conveyor dust collector. As shown in Table 3.2, all emissions units previously designed to be controlled by the six wet scrubbers will be controlled by the seven dust collectors.

The emission units to be controlled by the molybdenum dust collector will not change due to the decision to use a cartridge filter dust collector. However, the emission unit information for the molybdenum dust collector is also presented in Table 3.2 for completeness.

3.3 EXHAUST FLOW RATES

As described in Section 3.2, several of the emission units previously controlled by the stockpile area scrubber and the pebble crusher area scrubber will now be controlled by the stockpile feed conveyor transfer point dust collector and the SAG feed conveyor dust collector. Therefore, due to the reduction in emission unit pickup points, the exhaust flow rates of the stockpile area and reclaim tunnel dust collector and the pebble crusher area dust collector will be less than the flow rates previously identified for the associated wet scrubbers being replaced. However, the total flow rate of all pollution control device used at the RCP will remain the same before and after the design refinements. The exhaust flow rate of the molybdenum dust collector does not change due to the decision to use a cartridge filter dust collector.

The exhaust flow rates of all eight dust collectors are presented in Table 3.3.

3.4 EMISSION LIMITS

The control efficiency of cartridge filter dust collectors (99.99% control efficiency down to 0.5 micron particles) is greater than the control efficiency achieved by wet scrubbers (99.0% control efficiency for 2.5 micron particles). Therefore, the voluntarily accepted emission limits for the cartridge filter dust collectors can be stricter than those accepted for the wet scrubbers with the same confidence of compliance with the limit. In order to minimize the potential to emit of the RCP, the RCC has decided to accept stricter emission limits than those previously accepted for the scrubbers. Additionally, the RCC has decided to accept a stricter emission limit for the molybdenum dust collector due to the decision to use a cartridge filter dust collector.

The PM_{10} emission limits to be accepted for the eight cartridge filter dust collectors are presented in Table 3.4. The emission limits are calculated using an outlet grain loading of 0.005 grains/dscf and the exhaust flow rate of the dust collectors in units of dscfm.

Table 3.1 Identification of the Changes to the Design of the Pollution Control Devices

Design from the Class II Permit Application		Refined Design (Cartridge Filter Dust Collectors)	
Emission Unit ID	Air Pollution Control Device	Emission Unit ID	Air Pollution Control Device
PCL01	Crushing Area Scrubber	PCL01	Crushing Area Dust Collector
PCL02	Stockpile Area Scrubber	PCL02	Stockpile Area and Reclaim Tunnel Dust Collector
PCL03	Reclaim Tunnel Scrubber	PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector
PCL04	Pebble Crusher Area Scrubber	PCL04	Pebble Crusher Area Dust Collector
PCL05	Copper Concentrate Scrubber 1	PCL05	Copper Concentrate Dust Collector 1
PCL06	Copper Concentrate Scrubber 2	PCL06	Copper Concentrate Dust Collector 2
PCL08	Molybdenum Dust Collector	PCL08	Molybdenum Dust Collector
		PCL12	SAG Feed Conveyor Dust Collector

Table 3.2 Comparison of the Emission Units Controlled Due to the Changes to the Design of the Pollution Control Devices

Design from the Class II Permit Application		Refined Design	
Air Pollution Control Device	Emission Points Controlled	Air Pollution Control Device	Emission Points Controlled
PCL01: Crushing Area Scrubber	Process Equipment: • Primary Crusher Material Handling Emission Points: • Crusher Discharge Hopper to Crusher Discharge Feeder • Crusher Discharge Feeder to Stockpile Feed Conveyor No. 1	PCL01: Crushing Area Dust Collector	Process Equipment: • Primary Crusher Material Handling Emission Points: • Crusher Discharge Hopper to Crusher Discharge Feeder • Crusher Discharge Feeder to Stockpile Feed Conveyor No. 1
PCL02: Stockpile Area Scrubber	Material Handling Emission Points: • Stockpile Feed Conveyor No. 1 to Stockpile Feed Conveyor No. 2 • Stockpile Feed Conveyor No. 2 to Covered Coarse Ore Stockpile General Ventilation of the Stockpile Building	PCL02: Stockpile Area and Reclaim Tunnel Dust Collector	Material Handling Emission Points: • Stockpile Feed Conveyor No. 2 to Covered Coarse Ore Stockpile • Reclaim Feeders to Reclaim Conveyor General Ventilation of the Stockpile Building
PCL03: Reclaim Tunnel Scrubber	Material Handling Emission Points: • Reclaim Feeders to Reclaim Conveyor	PCL03: Stockpile Feed Conveyor Transfer Point Dust Collector	Material Handling Emission Points: • Stockpile Feed Conveyor No. 1 to Stockpile Feed Conveyor No. 2

Table 3.2 Comparison of the Emission Units Controlled Due to the Changes to the Design of the Pollution Control Devices

Design from the Class II Permit Application		Refined Design	
Air Pollution Control Device	Emission Points Controlled	Air Pollution Control Device	Emission Points Controlled
PCL04: Pebble Crusher Area Scrubber	Process Equipment: • Pebble Crusher Material Handling Emission Points: • Reclaim Conveyor to SAG Mill Feed Conveyor • Pebble Conveyor No. 2 to SAG Oversize Surge Bin • SAG Oversize Surge Bin to Pebble Crusher Feeder • Pebble Crusher to Pebble Conveyor No. 3 • Pebble Conveyor No. 3 to SAG Mill Feed Conveyor	PCL04: Pebble Crusher Area Dust Collector	Process Equipment: • Pebble Crusher Material Handling Emission Points: • Pebble Conveyor No. 2 to SAG Oversize Surge Bin • SAG Oversize Surge Bin to Pebble Crusher Feeder • Pebble Crusher to Pebble Conveyor No. 3
PCL05: Copper Concentrate Scrubber 1	Material Handling Emission Points: • Copper Concentrate Conveyor to Copper Concentrate Loadout Stockpile • Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loader General Ventilation of the Copper Concentrate Loadout Building	PCL05: Copper Concentrate Dust Collector 1	Material Handling Emission Points: • Copper Concentrate Conveyor to Copper Concentrate Loadout Stockpile • Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loader General Ventilation of the Copper Concentrate Loadout Building

Table 3.2 Comparison of the Emission Units Controlled Due to the Changes to the Design of the Pollution Control Devices

Design from the Class II Permit Application		Refined Design	
Air Pollution Control Device	Emission Points Controlled	Air Pollution Control Device	Emission Points Controlled
PCL06: Copper Concentrate Scrubber 2	Process Equipment: • Copper Concentrate Conveyor to Copper Concentrate Loadout Stockpile • Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loader General Ventilation of the Copper Concentrate Loadout Building	PCL06: Copper Concentrate Dust Collector 2	Process Equipment: • Copper Concentrate Conveyor to Copper Concentrate Loadout Stockpile • Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loader General Ventilation of the Copper Concentrate Loadout Building
PCL08: Molybdenum Dust Collector	Material Handling Emission Points: • Molybdenum Concentrate Dryer to Molybdenum Concentrate Bin • Molybdenum Concentrate Conveyor to Molybdenum Packaging and Weigh System	PCL08: Molybdenum Dust Collector	Material Handling Emission Points: • Molybdenum Concentrate Dryer to Molybdenum Concentrate Bin • Molybdenum Concentrate Conveyor to Molybdenum Packaging and Weigh System
		PCL12: SAG Feed Conveyor Dust Collector	Material Handling Emission Points: • Reclaim Conveyor to SAG Mill Feed Conveyor • Pebble Crusher No. 3 to SAG Mill Feed Conveyor

Table 3.3 Comparison of the Exhaust Flow Rates Due to the Changes to the Design of the Pollution Control Devices

Design from the Class II Permit Application			Refined Design		
Emission Unit ID	Air Pollution Control Device	Exhaust Flow Rate	Emission Unit ID	Air Pollution Control Device	Exhaust Flow Rate
PCL01	Crushing Area Scrubber	18,000 acfm	PCL01	Crushing Area Dust Collector	18,000 acfm
PCL02	Stockpile Area Scrubber	36,500 acfm	PCL02	Stockpile Area and Reclaim Tunnel Dust Collector	41,500 acfm
PCL03	Reclaim Tunnel Scrubber	15,000 acfm	PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector	10,000 acfm
PCL04	Pebble Crusher Area Scrubber	22,000 acfm	PCL04	Pebble Crusher Area Dust Collector	9,000 acfm
PCL05	Copper Concentrate Scrubber 1	50,000 acfm	PCL05	Copper Concentrate Dust Collector 1	50,000 acfm
PCL06	Copper Concentrate Scrubber 2	50,000 acfm	PCL06	Copper Concentrate Dust Collector 2	50,000 acfm
PCL08	Molybdenum Dust Collector	1,500 acfm	PCL08	Molybdenum Dust Collector	1,500 acfm
			PCL12	SAG Feed Conveyor Dust Collector	13,000 acfm

Table 3.4 Comparison of the Voluntarily Accepted PM_{10} Emission Limits Due to the Changes to the Design of the Pollution Control Devices

Design from the Class II Permit Application			Refined Design		
Emission Unit ID	Air Pollution Control Device	PM_{10} Emission Limit	Emission Unit ID	Air Pollution Control Device	PM_{10} Emission Limit
PCL01	Crushing Area Scrubber	1.28 lb/hr	PCL01	Crushing Area Dust Collector	0.64 lb/hr
PCL02	Stockpile Area Scrubber	2.59 lb/hr	PCL02	Stockpile Area and Reclaim Tunnel Dust Collector	1.47 lb/hr
PCL03	Reclaim Tunnel Scrubber	1.07 lb/hr	PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector	0.36 lb/hr
PCL04	Pebble Crusher Area Scrubber	1.56 lb/hr	PCL04	Pebble Crusher Area Dust Collector	0.32 lb/hr
PCL05	Copper Concentrate Scrubber 1	3.55 lb/hr	PCL05	Copper Concentrate Dust Collector 1	1.78 lb/hr
PCL06	Copper Concentrate Scrubber 2	3.55 lb/hr	PCL06	Copper Concentrate Dust Collector 2	1.78 lb/hr
PCL08	Molybdenum Dust Collector	0.010 gr/dscf	PCL08	Molybdenum Dust Collector	0.053 lb/hr
			PCL12	SAG Feed Conveyor Dust Collector	0.46 lb/hr

4. AMENDED PARTS OF THE CLASS II PERMIT APPLICATION

The following Sections 4.1 through 4.14 identify the parts of RCC's Class II Permit Application that must be amended to correspond to the refinements to process operations and pollution control devices described in Sections 2 and 3, respectively. Please note that Sections 4.1 through 4.14 include only the amended parts of the application. All other parts, including remaining portions of tables, not identified in Sections 4.1 through 4.14 are not being amended.

4.1 AMENDED SECTION 2.1.4

The second and third paragraphs of Section 2.1.4 are amended as follows to address the renaming of the stockpile feed conveyor, the replacement of the stockpile tripper conveyor, the replacement of the crushing area and stockpile area wet scrubbers with dust collectors, and the addition of the stockpile feed conveyor transfer point dust collector:

> The crusher dump hopper will directly feed the primary gyratory crusher. Primary crushed ore will be withdrawn from the crusher discharge hopper by a crusher discharge feeder. The feeder will discharge to stockpile feed conveyor No. 1 that will in turn feed stockpile feed conveyor No. 2 and will discharge to the coarse ore stockpile. The coarse ore stockpile is enclosed within the stockpile building. A process flow diagram of the primary crushing and coarse ore stockpiling process is presented in Figure B.2 of Appendix B.
>
> The run of mine stockpile, material transfer to the primary crusher, primary crushing, and material transfers from the primary crusher to the coarse ore stockpile have the potential to emit TSP, PM, PM_{10}, and $PM_{2.5}$ emissions. The crushing area dust collector, stockpile feed conveyor transfer point dust collector, and stockpile area and reclaim tunnel dust collector will control the particulate matter emissions from the material transfer points between the primary crusher and the coarse ore stockpile. Since emissions from primary crushing are emitted through the exit of the crusher, the crushing area dust collector will also indirectly control primary crushing emissions at the material transfer point from the primary crusher. Water sprays will be used to control particulate matter emissions from the material transfer to the primary crusher at the dump hopper.

4.2 AMENDED SECTION 2.1.5

The second paragraph of Section 2.1.5 is amended as follows to address the replacement of the reclaim tunnel wet scrubber with a dust collector and the addition of the SAG feed conveyor dust collector:

> The material transfer points from the coarse ore stockpile to the reclaim feeders are located underground and will not produce emissions into the atmosphere. The material transfer points from the reclaim feeders to the SAG mill have the potential to emit TSP, PM, PM_{10}, and $PM_{2.5}$ emissions. Particulate matter emissions due to the material transfers from the reclaim feeders to the SAG mill feed conveyor will be controlled by the stockpile area and reclaim tunnel dust collector and the SAG feed conveyor dust collector. The material transfer point to the SAG mill is controlled by the addition of process water.

4.3 AMENDED SECTION 2.1.6

The fourth paragraph of Section 2.1.6 is amended as follows to address the replacement of the pebble crusher area wet scrubber with a dust collector:

> Pebble conveyor No. 2, which discharges to the SAG oversize surge bin is a long conveyor, such that during the conveying process, the ore may start to dry out. Therefore, the material transfer points from pebble conveyor No. 2 to the pebble crusher feeder, the pebble crushing process, and the material transfer points after pebble crushing have the potential to emit TSP, PM, PM_{10}, and $PM_{2.5}$ emissions. These emissions will be controlled by the pebble crusher area dust collector. The material transfer point from the pebble crusher feeder to the pebble crusher is sealed and enclosed.

4.4 AMENDED SECTION 2.1.7

The second paragraph of Section 2.1.7 is amended as follows to address the replacement of the two copper concentrate wet scrubbers with two dust collectors:

> The copper concentrate dewatering operation will produce a final product with an approximate moisture content of 10%. TSP, PM, PM_{10}, and $PM_{2.5}$ emissions have the potential to be released during material transfer points following processing by the filters where the moisture content is reduced. These emissions will be controlled by two copper concentrate dust collectors. The copper concentrate stockpile is enclosed in a building to prevent the release of wind blown fugitives.

4.5 AMENDED SECTION 2.1.10

The fourth paragraph of Section 2.1.10 is amended as follows to address the reduction in number of electrowinning cell ventilation scrubbers:

> The organic phase solution that will be utilized in the SX process has the potential to emit VOCs and HAPs. The mixers, settlers, and various other tanks used in the SX process that may contain the organic solution will be covered to minimize the evaporative losses. The EW process has the potential to emit H_2SO_4 mist emissions and cobalt compounds entrained in the acid mist. The emissions will be controlled by the use of an acid mist suppressing agent and two electrowinning cell ventilation scrubbers with 99% control efficiencies. A third scrubber will be installed to provide redundancy when one of the other two scrubbers is required to be shut down for maintenance activities.

4.6 AMENDED SECTION 2.1.11

The third paragraph of Section 2.1.11 is amended as follows to address the refined design of the lime system:

> Reagent systems at the RCP include delivery of reagents to the facility, possible mixing and/or preparation of reagents, storage, and distribution to a process stream. Some of the reagents delivered to the facility are in solid form and will either be mixed with water or slaked

at the facility. Other reagents may be delivered in liquid form or may remain in solid form prior to use in a process. The material transfer points of the solid phase reagents have the potential to emit TSP, PM, PM_{10}, and $PM_{2.5}$ emissions. Lime slaking also has the potential to emit TSP, PM, PM_{10}, and $PM_{2.5}$ emissions. The liquid phase reagents stored in tanks prior to use may produce VOC and HAP emissions from breathing and working losses depending on the properties of the reagent. The lime and sodium metasilicate systems utilize passive bin vents (considered inherent to the process) to collect and prevent the loss of material during the filling of the storage vessels. The capture and recovery of material using the bin vents also results in the control of particulate matter emissions from the material transfer process. Hydrogen sulfide formed during the sodium hydrosulfide delivery process and storage will be controlled by the molybdenum cleaner area scrubber. Particulate matter emissions from the lime slaking process will be controlled by the lime slaker scrubber. Process flow diagrams of the reagent systems are presented in Figures B.16, B.17, and B.18 of Appendix B.

The eighth paragraph of Section 2.1.11 is amended as follows to address the paving of the entrance road and additional industrial roads within the RCP facility:

The use of mobile vehicles is an integral part of operations at the RCP. The mobile vehicles include major mine equipment and mining support equipment. The mobile vehicles have the potential to produce particulate matter emissions from traveling on paved and unpaved roads at the facility. Both the entrance road to the RCP facility and some industrial roads within the facility will be paved to reduce potential emissions. Other industrial roads including all roads used by haul trucks will be unpaved. The unpaved road emissions from the mobile vehicles are fugitive emissions and will be controlled by road watering.

4.7 AMENDED TABLE 3.1

Table 3.1 is amended to address all refinements to process operations and pollution control devices described in Sections 2 and 3, respectively, and includes the following changes:

- Revising the emission unit descriptions for MN15, PC06, PC07, PC08, MS01, MS02, MS03, MS04, PCL01, PCL02, PCL03, PCL04, PCL05, and PCL06;
- Adding emission units MN16 and PCL12; and
- Revising the control device information for emission units PC03, PC05, PC06, PC07, PC08, PC11, PC12, PC13, M08, M09, M11, M12, CCD02, CCD04, MS01, MS03, and MS04.

The amended parts of Table 3.1 are presented on pages 4-5 through 4-7 of this document.

4.8 AMENDED TABLE 3.2

Table 3.2 is amended to address the change in calculated total annual emissions due to the refinements to process operations and pollution control devices described in Sections 2 and 3, respectively. Only PM/TSP, PM_{10}, and $PM_{2.5}$ emissions are affected by the refinements. The amended parts of Table 3.2 are presented on page 4-8 of this document. The amendments to the calculation methodology and emission inventory tables are presented in Section 5.

4.9 AMENDED TABLE 4.1

Table 4.1 is amended to address the use of cartridge filter dust collectors and the change in the emission limits. The amendment includes the following changes:

- Revising the emission unit description and PM_{10} emission limits for Items 15 through 19;
- Revising the PM_{10} emission limit for Item 21; and
- Adding the PM_{10} emissions limit requirements for the SAG Feed Conveyor Dust Collector (added Item 25).

The amended parts of Table 4.1 are presented on page 4-9 of this document.

Table 3.1 Identification and Description of Emission Units

Emission Unit ID [a]	Description of Emission Unit / Process	Emission Species	Control Device / ID	Non-Fugitive or Fugitive Emissions [b]
Mining				
MN15	Support Vehicle Use on Unpaved Roads	TSP, PM, PM_{10}, $PM_{2.5}$	Road Watering	Fugitive
MN16	Support Vehicle Use on Paved Roads	TSP, PM, PM_{10}, $PM_{2.5}$	--	Fugitive
Primary Crushing, Conveying, Coarse Ore Storage, and Reclaim Conveying				
PC03	Primary Crusher (PCr)	TSP, PM, PM_{10}, $PM_{2.5}$	Crushing Area Dust Collector / PCL01	Non-Fugitive
PC05	Crusher Discharge Hopper (H-CDs) to Crusher Discharge Feeder (F-CD)	TSP, PM, PM_{10}, $PM_{2.5}$	Crushing Area Dust Collector / PCL01	Non-Fugitive
PC06	Crusher Discharge Feeder (F-CD) to Stockpile Feed Conveyor No. 1 (CV-SF1)	TSP, PM, PM_{10}, $PM_{2.5}$	Crushing Area Dust Collector / PCL01	Non-Fugitive
PC07	Stockpile Feed Conveyor No. 1 (CV-SF1) to Stockpile Feed Conveyor No. 2 (CV-SF2)	TSP, PM, PM_{10}, $PM_{2.5}$	Stockpile Feed Conveyor Transfer Point Dust Collector / PCL03	Non-Fugitive
PC08	Stockpile Feed Conveyor No. 2 (CV-SF2) to Covered Coarse Ore Stockpile	TSP, PM, PM_{10}, $PM_{2.5}$	Stockpile Area and Reclaim Tunnel Dust Collector / PCL02 [c]	Fugitive
PC11	Reclaim Feeders (F-R1/R4) to Reclaim Conveyor (CV-R)	TSP, PM, PM_{10}, $PM_{2.5}$	Stockpile Area and Reclaim Tunnel Dust Collector / PCL02	Non-Fugitive
PC12	Reclaim Conveyor (CV-R) to SAG Mill Feed Conveyor (CV-SMF)	TSP, PM, PM_{10}, $PM_{2.5}$	SAG Feed Conveyor Dust Collector / PCL12	Non-Fugitive
PC13	Pebble Conveyor No. 3 (CV-Pb3) to SAG Mill Feed Conveyor (CV-SMF)	TSP, PM, PM_{10}, $PM_{2.5}$	SAG Feed Conveyor Dust Collector / PCL12	Non-Fugitive

Table 3.1 Identification and Description of Emission Units

Emission Unit ID [a]	Description of Emission Unit / Process	Emission Species	Control Device / ID	Non-Fugitive or Fugitive Emissions [b]
Grinding Mill and Flotation				
M08	Pebble Conveyor No. 2 (CV-Pb2) to SAG Oversize Surge Bin (B-SAGOS)	TSP, PM, PM_{10}, $PM_{2.5}$	Pebble Crusher Area Dust Collector / PCL04	Non-Fugitive
M09	SAG Oversize Surge Bin (B-SAGOS) to Pebble Crusher Feeder (F-PbC)	TSP, PM, PM_{10}, $PM_{2.5}$	Pebble Crusher Area Dust Collector / PCL04	Non-Fugitive
M11	Pebble Crusher (PbC)	TSP, PM, PM_{10}, $PM_{2.5}$	Pebble Crusher Area Dust Collector / PCL04	Non-Fugitive
M12	Pebble Crusher (PbC) to Pebble Conveyor No. 3 (CV-Pb3)	TSP, PM, PM_{10}, $PM_{2.5}$	Pebble Crusher Area Dust Collector / PCL04	Non-Fugitive
Copper Concentrate Dewatering and Stacking				
CCD02	Copper Concentrate Conveyor (CV-CC) to Copper Concentrate Loadout Stockpile	TSP, PM, PM_{10}, $PM_{2.5}$	Copper Concentrate Dust Collectors / PCL05-06	Fugitive
CCD04	Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loaders	TSP, PM, PM_{10}, $PM_{2.5}$	Copper Concentrate Dust Collectors / PCL05-06	Fugitive
Miscellaneous Sources				
MS01	Transfer of Lime to the Lime Storage Bin (B-L)	TSP, PM, PM_{10}, $PM_{2.5}$	Lime Storage Bin Vent	Non-Fugitive
MS02	Lime Storage Bin (B-L) to Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2)	TSP, PM, PM_{10}, $PM_{2.5}$	Enclosed	Non-Fugitive
MS03	Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2) to Lime Slakers 1 and 2 (T-LS1/2)	TSP, PM, PM_{10}, $PM_{2.5}$	Enclosed	Non-Fugitive
MS04	Lime Slaking in Lime Slakers 1 and 2 (T-LS1/2)	TSP, PM, PM_{10}, $PM_{2.5}$	Lime Slaker Scrubber	Non-Fugitive

Table 3.1 Identification and Description of Emission Units

Emission Unit ID [a]	Description of Emission Unit / Process	Emission Species	Control Device / ID	Non-Fugitive or Fugitive Emissions [b]
Particulate Matter Pollution Control Equipment with Limits				
PCL01	Crushing Area Dust Collector (PC-CADC)	TSP, PM, PM_{10}, $PM_{2.5}$	--	Non-Fugitive
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	TSP, PM, PM_{10}, $PM_{2.5}$	--	Non-Fugitive
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	TSP, PM, PM_{10}, $PM_{2.5}$	--	Non-Fugitive
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	TSP, PM, PM_{10}, $PM_{2.5}$	--	Non-Fugitive
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	TSP, PM, PM_{10}, $PM_{2.5}$	--	Non-Fugitive
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	TSP, PM, PM_{10}, $PM_{2.5}$	--	Non-Fugitive
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	TSP, PM, PM_{10}, $PM_{2.5}$	--	Non-Fugitive

[a] If the emission unit is controlled, the control device is listed. If the control device has an emission limit, it is listed as a separate emission unit.

[b] Fugitive emission units for non-HAP species do not contribute to the facility-wide potential to emit.

[c] This emission unit is located within the coarse ore stockpile building in addition to being controlled by the dust collector. Emission calculations in this permit application are based on 100% capture efficiency of the dust collector.

Table 3.2 Maximum Annual Controlled Emission Summary for the RCP [a]		
Emission Type	Category	Annual Emissions (tons)
PM/TSP	Non-Fugitive	78.46
	Fugitive	3,238.04
	Total	3,316.50
PM_{10}	Non-Fugitive	39.03
	Fugitive	874.81
	Total	913.84
$PM_{2.5}$	Non-Fugitive	10.23
	Fugitive	99.24
	Total	109.47

[a] Emission totals shown are from Year 5 and do not include tailpipe emissions.

Table 4.1 Applicable Regulatory Requirements and Methods for Demonstrating Compliance

	Emission Unit	Regulatory Citation for Applicable	Description of Requirements	Methods Used to Demonstrate
15.	Crushing Area Dust Collector	A.A.C. R-18-2-306.01 and P.C.C. Section 17.12.190	$PM_{10} \leq 0.64$ lb/hr	EPA Reference Method 5 or 17 in accordance to 40 CFR 60, Appendix A.
16.	Stockpile Area and Reclaim Tunnel Dust Collector	A.A.C. R-18-2-306.01 and P.C.C. Section 17.12.190	$PM_{10} \leq 1.47$ lb/hr	EPA Reference Method 5 or 17 in accordance to 40 CFR 60, Appendix A.
17.	Stockpile Feed Conveyor Transfer Point Dust Collector	A.A.C. R-18-2-306.01 and P.C.C. Section 17.12.190	$PM_{10} \leq 0.36$ lb/hr	EPA Reference Method 5 or 17 in accordance to 40 CFR 60, Appendix A.
18.	Pebble Crusher Area Dust Collector	A.A.C. R-18-2-306.01 and P.C.C. Section 17.12.190	$PM_{10} \leq 0.32$ lb/hr	EPA Reference Method 5 or 17 in accordance to 40 CFR 60, Appendix A.
19.	Copper Concentrate Dust Collector 1, Copper Concentrate Dust Collector 2	A.A.C. R-18-2-306.01 and P.C.C. Section 17.12.190	$PM_{10} \leq 1.78$ lb/hr	EPA Reference Method 5 or 17 in accordance to 40 CFR 60, Appendix A.
21.	Molybdenum Dust Collector	A.A.C. R-18-2-306.01 and P.C.C. Section 17.12.190	$PM_{10} \leq 0.053$ lb/hr	EPA Reference Method 5 or 17 in accordance to 40 CFR 60, Appendix A.
25.	SAG Feed Conveyor Dust Collector	A.A.C. R-18-2-306.01 and P.C.C. Section 17.12.190	$PM_{10} \leq 0.46$ lb/hr	EPA Reference Method 5 or 17 in accordance to 40 CFR 60, Appendix A.

4.10 AMENDED TABLE 5.1

Table 5.1 is amended to address all refinements to process operations and pollution control devices described in Sections 2 and 3, respectively, and includes the following changes:

- Separating the Support Vehicle Use into the following two main categories and revising the process rates for each category:
    - Support Vehicle Use on Unpaved Roads
    - Support Vehicle Use on Paved Roads;
- Renaming the Stockpile Feed Conveyor to Stockpile Feed Conveyor No. 1;
- Replacing the Stockpile Tripper Conveyor with the Stockpile Feed Conveyor No. 2;
- Updating the SAG Mill Feed Conveyor process rates due to solid pebble lime no longer being conveyed to the SAG Mill;
- Combining the Bulk Pebble Lime Handling and Lime Handling activities and renaming it Lime Handling and Slaking;
- Revising and adding equipment names and process rate information for the wet scrubbers being replaced by dust collectors; and
- Revising the process rate information for the Molybdenum Dust Collector.

The amended parts of Table 5.1 are presented on pages 4-11 through 4-12 of this document.

4.11 AMENDED TABLE 6.1

Table 6.1 is amended to address all refinements to process operations and pollution control devices described in Sections 2 and 3, respectively, and includes the following changes:

- Revising and adding the information for the wet scrubbers being replaced by dust collectors (Equipment, Equipment ID, Manufacturer/Model, Size or Capacity, and Control Device columns);
- Updating the manufacturer/model for the Molybdenum Dust Collector;
- Revising the equipment ID and quantity of Electrowinning Cell Ventilation Scrubbers;
- Renaming the Stockpile Feed Conveyor to Stockpile Feed Conveyor No. 1 and updating the Equipment ID;
- Replacing the Stockpile Tripper Conveyor with the Stockpile Feed Conveyor No. 2 and updating the available equipment descriptions; and
- Deleting the bulk pebble lime equipment (bulk pebble lime silo, bulk pebble lime silo screw conveyor, bulk pebble lime silo bin vent) and adding the additional lime handling and slaking equipment to correspond to the refined lime system.

The amended parts of Table 6.1 are presented on pages 4-13 through 4-16 of this document.

Table 5.1 Summary of Year 5 Maximum Hourly and Annual Process Rates

Equipment / Activity	Process Rates [a]	
	Maximum Hourly	Annual
Mining		
Support Vehicle Use on Unpaved Roads	63 VMT	544,793 VMT
Support Vehicle Use on Paved Roads	174 VMT	582,681 VMT
Primary Crushing, Conveying, Coarse Ore Storage, and Reclaim Conveying		
Primary Crushing and Conveying	6,950 tons	43,362,000 tons
Primary Crusher; Crusher Discharge Hopper; Crusher Discharge Feeder; Stockpile Feed Conveyor No. 1; Stockpile Feed Conveyor No. 2		
SAG Mill Feed Conveyor	8,721 tons	49,631,400 tons
Miscellaneous Sources		
Lime Handling and Slaking	7.77 tons	56,700 tons
Lime Storage Bin, Lime Transfer Screw Conveyor 1, Lime Transfer Screw Conveyor 2, Lime Slaker 1, Lime Slaker 2		
Particulate Matter Pollution Control Equipment with Limits		
Crushing Area Dust Collector	1 hour	8,760 hours
Stockpile Area and Reclaim Tunnel Dust Collector	1 hour	8,760 hours
Stockpile Feed Conveyor Transfer Point Dust Collector	1 hour	8,760 hours
Pebble Crusher Area Dust Collector	1 hour	8,760 hours
Copper Concentrate Dust Collector 1	1 hour	8,760 hours

Table 5.1 Summary of Year 5 Maximum Hourly and Annual Process Rates

Equipment / Activity	Process Rates [a]	
	Maximum Hourly	Annual
Copper Concentrate Dust Collector 2	1 hour	8,760 hours
Molybdenum Dust Collector	1 hour	8,760 hours
SAG Feed Conveyor Dust Collector	1 hour	8,760 hours

[a] VMT = vehicle miles traveled

Table 6.1 Descriptions of Process and Control Equipment Required to be Permitted

Equipment	Equipment ID	Manufacturer / Model [a]	Quantity	Size or Capacity	Emission Status / Control Device	Applicable Regulatory Requirements
Primary Crushing, Conveying, Coarse Ore Storage, and Reclaim Conveying						
Primary Crusher	PCr	Sandvik	1	6,950 tons/hr	Non-Fugitive / Crushing Area Dust Collector	A.A.C. R18-2-901.43, P.C.C. Section 17.16.490.A.43, and 40 CFR 60, Subpart LL
Crusher Discharge Feeder	F-CD	na	1	25' L X 96" W	Non-Fugitive / Crushing Area Dust Collector	A.A.C. R18-2-901.43, P.C.C. Section 17.16.490.A.43, and 40 CFR 60, Subpart LL
Stockpile Feed Conveyor No. 1	CV-SF1	na	1	2,690' L X 60" W	Non-Fugitive / Crushing Area Dust Collector	A.A.C. R18-2-901.43, P.C.C. Section 17.16.490.A.43, and 40 CFR 60, Subpart LL
Crushing Area Dust Collector	PC-CADC	Cartridge Filter	1	18,000 acfm	Non-Fugitive	A.A.C. R18-2-901.43, P.C.C. Section 17.16.490.A.43, and 40 CFR 60, Subpart LL
Stockpile Feed Conveyor No. 2	CV-SF2	na	1	na	Non-Fugitive / Stockpile Feed Conveyor Transfer Point Dust Collector	A.A.C. R18-2-901.43, P.C.C. Section 17.16.490.A.43, and 40 CFR 60, Subpart LL
Stockpile Feed Conveyor Transfer Point Dust Collector	PC-SFCDC	Cartridge Filter	1	10,000 acfm	Non-Fugitive	A.A.C. R18-2-901.43, P.C.C. Section 17.16.490.A.43, and 40 CFR 60, Subpart LL

Table 6.1 Descriptions of Process and Control Equipment Required to be Permitted

Equipment	Equipment ID	Manufacturer / Model [a]	Quantity	Size or Capacity	Emission Status / Control Device	Applicable Regulatory Requirements
Stockpile Area and Reclaim Tunnel Dust Collector	PC-SARTDC	Cartridge Filter	1	41,500 acfm	Non-Fugitive	A.A.C. R18-2-901.43, P.C.C. Section 17.16.490.A.43, and 40 CFR 60, Subpart LL
Reclaim Conveyor	CV-R	na	1	932' L X 60" W	Non-Fugitive / Stockpile Area and Reclaim Tunnel Dust Collector	A.A.C. R18-2-901.43, P.C.C. Section 17.16.490.A.43, and 40 CFR 60, Subpart LL
SAG Mill Feed Conveyor	CV-SMF	na	1	660' L X 60" W	Non-Fugitive / SAG Feed Conveyor Dust Collector	A.A.C. R18-2-901.43, P.C.C. Section 17.16.490.A.43, and 40 CFR 60, Subpart LL
SAG Feed Conveyor Dust Collector	PC-SFDC	Cartridge Filter	1	13,000 acfm	Non-Fugitive	A.A.C. R18-2-901.43, P.C.C. Section 17.16.490.A.43, and 40 CFR 60, Subpart LL
Milling						
SAG Oversize Surge Bin	B-SAGOS	na	1	500 tons	Non-Fugitive / Pebble Crusher Area Dust Collector	A.A.C. R18-2-901.43, P.C.C. Section 17.16.490.A.43, and 40 CFR 60, Subpart LL
Pebble Crusher Feeder	F-PbC	na	1	31.5' L X 48" W	Non-Fugitive / Pebble Crusher Area Dust Collector	A.A.C. R18-2-901.43, P.C.C. Section 17.16.490.A.43, and 40 CFR 60, Subpart LL

Table 6.1 Descriptions of Process and Control Equipment Required to be Permitted

Equipment	Equipment ID	Manufacturer / Model [a]	Quantity	Size or Capacity	Emission Status / Control Device	Applicable Regulatory Requirements
Pebble Crusher	PbC	na	1	1,771 tons/hr	Non-Fugitive / Pebble Crusher Area Dust Collector	A.A.C. R18-2-901.43, P.C.C. Section 17.16.490.A.43, and 40 CFR 60, Subpart LL
Pebble Conveyor No. 3	CV-Pb3	na	1	170.5' X 36" W	Non-Fugitive / Pebble Crusher Area Dust Collector	A.A.C. R18-2-901.43, P.C.C. Section 17.16.490.A.43, and 40 CFR 60, Subpart LL
Pebble Crusher Area Dust Collector	PC-PCADC	Cartridge Filter	1	9,000 acfm	Non-Fugitive	A.A.C. R18-2-901.43, P.C.C. Section 17.16.490.A.43, and 40 CFR 60, Subpart LL
Copper Concentrate Dewatering and Stacking						
Copper Concentrate Dust Collectors	PC-CCDC1/ CCDC2	Cartridge Filter	2	50,000 acfm each	Non-Fugitive	A.A.C. R18-2-901.43, P.C.C. Section 17.16.490.A.43, and 40 CFR 60, Subpart LL
Molybdenum Dewatering and Packaging						
Molybdenum Dust Collector	PC-MDC	Cartridge Filter	1	1,500 acfm	Non-Fugitive	A.A.C. R18-2-901.43, P.C.C. Section 17.16.490.A.43, and 40 CFR 60, Subpart LL

Table 6.1 Descriptions of Process and Control Equipment Required to be Permitted

Equipment	Equipment ID	Manufacturer / Model [a]	Quantity	Size or Capacity	Emission Status / Control Device	Applicable Regulatory Requirements
Solvent Extraction and Electrowinning						
Cell Ventilation Wet Scrubbers	PC-EWCVS1/ EWCVS3	na	3	5,000 acfm each	Non-Fugitive	A.A.C. R18-2-730 and P.C.C. Section 17.16.430
Miscellaneous Sources						
Lime Transfer Screw Conveyors	CV-LTS1/2	na	2	na	No Emissions (Enclosed Process)	A.A.C. R18-2-730 and P.C.C. Section 17.16.430
Lime Slakers	T-LS1/2	na	2	na	Non-Fugitive / Lime Slaker Scrubber	A.A.C. R18-2-730 and P.C.C. Section 17.16.430
Lime Slaker Scrubber	PC-LSS	na	1	500 acfm	Non-Fugitive	A.A.C. R18-2-730 and P.C.C. Section 17.16.430

[a] na = not available at this time

4.12 AMENDED TABLE 8.1

Table 8.1 is amended to address all refinements to process operations and pollution control devices described in Sections 2 and 3, respectively, and includes the following changes:

- Revising and adding the air pollution control device names, controlled emission points, exhaust flow rates, and PM_{10} emission limits for the wet scrubbers being replaced by dust collectors;
- Revising the PM_{10} emission limit for the Molybdenum Dust Collector;
- Deleting the water sprays at the dust collector pick-up points;
- Revising the number of Electrowinning Cell Ventilation Scrubbers;
- Renaming the Stockpile Feed Conveyor to Stockpile Feed Conveyor No. 1;
- Replacing the Stockpile Tripper Conveyor with the Stockpile Feed Conveyor No. 2;
- Deleting the Bulk Pebble Lime Silo Bin Vent; and
- Adding the Lime Slaker Scrubber and including the necessary pollution control device information.

The amended parts of Table 8.1 are presented on pages 4-18 through 4-20 of this document.

Table 8.1 Air Pollution Control Equipment at the RCP

Emission Unit ID	Air Pollution Control Device	Emission Points Controlled	Pollutants Controlled	PM_{10} Control Efficiency (Rated and Operating)	Exhaust Flow Rate	PM_{10} Grain Loading / Limit
--	Water Sprays	Material Handling Emission Point: • Unloading to Primary Crusher Dump Hopper from Haul Trucks or Run of Mine Stockpile	Particulates	82.5%	--	--
PCL01	Crushing Area Dust Collector	Process Equipment: • Primary Crusher Material Handling Emission Points: • Crusher Discharge Hopper to Crusher Discharge Feeder • Crusher Discharge Feeder to Stockpile Feed Conveyor No. 1	Particulates	99.99%	18,000 acfm	0.64 lb/hr
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector	Material Handling Emission Points: • Stockpile Feed Conveyor No. 2 to Covered Coarse Ore Stockpile • Reclaim Feeders to Reclaim Conveyor General Ventilation of the Stockpile Building	Particulates	99.99%	41,500 acfm	1.47 lb/hr
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector	Material Handling Emission Point: • Stockpile Feed Conveyor No. 1 to Stockpile Feed Conveyor No. 2	Particulates	99.99%	10,000 acfm	0.36 lb/hr

Table 8.1 Air Pollution Control Equipment at the RCP

Emission Unit ID	Air Pollution Control Device	Emission Points Controlled	Pollutants Controlled	PM_{10} Control Efficiency (Rated and Operating)	Exhaust Flow Rate	PM_{10} Grain Loading / Limit
PCL04	Pebble Crusher Area Dust Collector	Process Equipment: • Pebble Crusher Material Handling Emission Points: • Pebble Conveyor No. 2 to SAG Oversize Surge Bin • SAG Oversize Surge Bin to Pebble Crusher Feeder • Pebble Crusher to Pebble Conveyor No.3	Particulates	99.99%	9,000 acfm	0.32 lb/hr
PCL05	Copper Concentrate Dust Collector 1	Material Handling Emission Points: • Copper Concentrate Conveyor to Copper Concentrate Loadout Stockpile • Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loader General Ventilation of the Copper Concentrate Loadout Building	Particulates	99.99%	50,000 acfm	1.78 lb/hr
PCL06	Copper Concentrate Dust Collector 2	Process Equipment: • Copper Concentrate Conveyor to Copper Concentrate Loadout Stockpile • Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loader General Ventilation of the Copper Concentrate Loadout Building	Particulates	99.99%	50,000 acfm	1.78 lb/hr

Table 8.1 Air Pollution Control Equipment at the RCP

Emission Unit ID	Air Pollution Control Device	Emission Points Controlled	Pollutants Controlled	PM_{10} Control Efficiency (Rated and Operating)	Exhaust Flow Rate	PM_{10} Grain Loading / Limit
PCL08	Molybdenum Dust Collector	Material Handling Emission Points: • Molybdenum Concentrate Dryer to Molybdenum Concentrate Bin • Molybdenum Concentrate Conveyor to Molybdenum Packaging and Weigh System	Particulates	99.99%	1,500 acfm	0.053 lb/hr
PCL12	SAG Feed Conveyor Dust Collector	Material Handling Emission Points: • Reclaim Conveyor to SAG Mill Feed Conveyor • Pebble Crusher No. 3 to SAG Mill Feed Conveyor	Particulates	99.99%	13,000 acfm	0.46 lb/hr
--	Lime Slaker Scrubber	Process: • Lime Slaking	Particulates	99%	500 acfm	--
--	3 EW Cell Ventilation Scrubbers (2 in use and 1 backup)	Process Equipment: • Electrowinning Cells	H_2SO_4, Cobalt Compounds	99%	5,000 acfm each	--

4.13 AMENDED APPENDIX A

The Emission Source Form and Equipment List presented in Appendix A are amended to address all refinements to process operations and pollution control devices described in Sections 2 and 3, respectively. The amended Emission Source Form includes the following changes:

- Revising emission rate information for Emission Units MN15a and MN15b;
- Revising and adding the equipment point description, emission rate information, and emission point discharge parameters for the wet scrubbers being replaced by dust collectors (PCL01 through PCL06 and PCL12) (not all discharge parameters are available at this time);
- Revising the emission rate information and emission point discharge parameters for the Molybdenum Dust Collector (PCL08);
- Adding Emission Units MN16a, MN16b, and MN16c and including the available emission rate and discharge parameter information; and
- Revising Emission Units MS01 and MS04 including the emission rate information to correspond to the refined lime system.

The amended Equipment List includes the following changes:

- Revising and adding information for the wet scrubbers being replaced by dust collectors (Equipment, Capacity, Model, and Equipment ID columns);
- Updating the model type of the Molybdenum Dust Collector;
- Revising the equipment ID for Electrowinning Cell Ventilation Wet Scrubbers;
- Renaming the Stockpile Feed Conveyor to Stockpile Feed Conveyor No. 1 and updating the Equipment ID;
- Replacing the Stockpile Tripper Conveyor with the Stockpile Feed Conveyor No. 2 and updating the available equipment descriptions; and
- Deleting the bulk pebble lime equipment (bulk pebble lime silo, bulk pebble lime silo screw conveyor, bulk pebble lime silo bin vent) and adding the additional lime handling and slaking equipment to correspond to the refined lime system.

The amended parts of the Emission Source Form and Equipment List are presented in Appendix B and C of this document, respectively.

4.14 AMENDED APPENDIX B

The processes flow diagrams presented in Figures B.2, B.3, B.8, B.14, and B.16 of Appendix B are amended to address all refinements to process operations and pollution control devices described in Sections 2 and 3, respectively.. The amended process flow diagrams are presented in Appendix D of this document.

5. AMENDED PARTS OF THE EMISSION INVENTORY INFORMATION

The following Sections 5.1 through 5.20 identify the parts of RCC's Emission Inventory Information that must be amended to correspond to the refinements to process operations and pollution control devices described in Sections 2 and 3, respectively. Please note that Sections 5.1 through 5.20 include only the amended parts of the Emission Inventory Information. All other parts not identified in Sections 5.1 through 5.20 are not being amended.

5.1 AMENDED TABLE 1.1

Table 1.1 is amended to address the change in calculated total controlled emissions due to the refinements to process operations and pollution control devices described in Sections 2 and 3, respectively. Since tailpipe emissions are not included in Table 1.1, only PM/TSP, PM_{10}, and $PM_{2.5}$ emissions in the table are affected by the refinements. The amended parts of Table 1.1 are presented on page 5-2 of this document.

Table 1.1 Summary of Total Controlled Emissions at the RCP [a]

Pollutant	Period	Year 1	Year 5	Year 10	Year 15	Year 20
PM/TSP	lb/hr	1,220.34	1,492.13	1,323.84	1,309.12	956.52
	tpd	9.35	12.61	10.59	10.42	6.18
	tpy	2,869.68	3,316.50	2,805.25	2,733.95	1,605.13
PM_{10}	lb/hr	420.12	490.10	446.83	441.52	348.41
	tpd	2.61	3.45	2.93	2.87	1.75
	tpy	804.23	913.84	782.30	754.04	447.81
$PM_{2.5}$	lb/hr	44.94	52.05	47.73	46.91	36.71
	tpd	0.34	0.42	0.37	0.36	0.24
	tpy	98.55	109.47	96.34	92.59	58.63

[a] Emission totals do not include tailpipe emissions.

5.2 AMENDED SECTION 2.9

Due to addition of paving at the RCP, the title of Section 2.9 is amended to *Support Vehicle Use on Unpaved Roads (Unit ID: MN15)* in order to separate emissions from support vehicles into those from use on unpaved roads and those from use on paved roads (addressed in the added Sections 2.10 and 2.11). The process rate information of Section 2.9 is amended as follows to include only the support vehicles use on unpaved roads at the RCP:

> The annual, maximum daily, and hourly process rates for support vehicle use on the unpaved roads are calculated by summing the annual, maximum daily, and hourly amount of VMT for each type of support vehicle. Total support vehicle use on unpaved roads is assumed to be equally divided into support vehicle use on unpaved roads inside the pit and support vehicle use on unpaved roads outside the pit.
>
> The type of support vehicles that will use the unpaved roads at the RCP include drills, loaders, heavy duty diesel trucks, excavators, cranes, and forklifts. Additionally, personnel pickup trucks and vans will occasionally use the unpaved roads (estimated at 10% of their total use).
>
> Except for the drills, the annual amount of VMT for each type of support vehicle used on unpaved roads is based on usage determinations, which are anticipated to be consistent throughout the life of the mine. The maximum daily amount of VMT on unpaved roads for each support vehicle is determined by dividing the annual VMT by 365, the quantity of days per year the support vehicle will be used. The hourly process rate is determined by dividing the maximum daily rate of support vehicle use on unpaved roads by 24 hours/day.
>
> For the drills, the annual, maximum daily, and hourly amounts of VMT on unpaved roads is determined by the distance traveled to prepare for a blast and the maximum number of blasts per year, day, or hour (see Section 2.2).
>
> The annual, maximum daily, and hourly VMT on unpaved roads, the support vehicle fleet size, and the support vehicle weight are presented in Tables B.1 through B.5 in Appendix B for Years 1, 5, 10, 15, and 20 in the life of the mine, respectively.

The second paragraph of the emission factor information of Section 2.9 is amended as follows to revise the calculation of the mean vehicle weight to include only those vehicles using the unpaved roads at the RCP:

> The mean vehicle weight (W, tons) is the weighted average value for the support vehicles at the RCP that will use unpaved roads and is based upon the weight and total vehicle miles traveled on unpaved roads for each vehicle. Since equal scaling does not occur for all vehicles in the calculation of annual, maximum daily, and hourly vehicle miles traveled, the mean vehicle weight will vary for these time periods. The mean vehicle weight values for vehicles using unpaved roads at the RCP in Years 1, 5, 10, 15, and 20 are presented in Tables B.1 through B.5 in Appendix B.

The control efficiency information of Section 2.9 is amended as follows to clarify that all unpaved roads at the RCP will be watered to control particulate matter emissions:

> Emissions of particulate matter resulting from support vehicle use on unpaved roads at the RCP will be controlled by the application of water to the road surface. Based on the EPA document, "Control of Open Fugitive Dust Sources" from September 1988, sufficient watering of unpaved roads can result in a control efficiency up to 95%. At the RCP, the roads will be watered sufficiently to achieve a 90% control efficiency.

5.3 ADDED SECTION 2.10

Due to the addition of paving at the RCP, Section 2.10 is added to the Emission Inventory Information in order to separate emissions from support vehicles into those from use on unpaved roads (addressed in Section 2.9) and those from use on the different paved roads. Section 2.10 is entitled *Support Vehicle Use on the Paved Entrance Road (Unit IDs: MN16a and MN16b)* and includes the following information:

> Process Rate
>
> The annual, maximum daily, and hourly process rates for support vehicle use on the paved entrance road are calculated by summing the annual, maximum daily, and hourly amount of VMT for each type of support vehicle.
>
> The types of support vehicles that will use the paved entrance road at the RCP include shipment and delivery vehicles and personnel pickup trucks and vans. It is estimated that 90% of the total use of the personnel pickup trucks and vans will be on the paved roads at the RCP (including both the entrance road and the industrial roads).
>
> The annual amount of VMT on the paved entrance road for the personnel pickup trucks and vans is based on usage determinations, which are anticipated to be consistent throughout the life of the mine. The maximum daily amount of VMT on the paved entrance road for personnel pickup trucks and vans is determined by dividing the annual VMT by 365, the quantity of days per year the trucks and vans will be used. The hourly process rate is determined by dividing the maximum daily use rate by 24 hours/day.
>
> For the shipment and delivery trucks, the annual, maximum daily, and hourly amounts of VMT on the paved entrance road are calculated by multiplying the amount of shipments and deliveries in any given year, day, or hour by the distance the shipment and delivery trucks travel on the paved entrance road (estimated at 6.2 VMT). The entrance road is 3.1 miles in length and the shipment and delivery vehicles must travel on it twice per shipment or delivery (once to enter into the facility and once to travel out of the facility).
>
> The annual and daily amount of shipments and deliveries are calculated by dividing the quantity of the material being shipped or delivered by the capacity of the shipment or delivery truck. The quantities of material being shipped are assumed to be equal throughout the life of the mine. The hourly amounts of shipments and deliveries are based on the maximum

amount of shipments or deliveries the RCP can accommodate in any one hour for each material.

The annual, maximum daily, and hourly VMT on the paved entrance road, the support vehicle fleet size, and the support vehicle weight are presented in Tables B.6 through B.10 in Appendix B for Years 1, 5, 10, 15, and 20 in the life of the mine, respectively.

The process area boundary of the RCP during Year 5 cuts through the paved entrance road. Therefore, emissions from support vehicle use on the paved entrance road are divided into those within the process area boundary (MN16a) and those outside the process area boundary (MN16b). 18.74% and 81.26% of total VMT on the paved entrance road is considered within and outside the process area boundary, respectively. The fractions are determined based on the length of the paved entrance road within the process area boundary (approximately 935 meters) and the total length of the paved entrance road (3.1 miles).

Emission Factor

Uncontrolled hourly and daily PM, PM_{10}, and $PM_{2.5}$ emissions resulting from support vehicle travel on the paved entrance road are calculated using emission factor expression 1 from AP-42, Section 13.2.1 (01/11) (Equation A below). Uncontrolled annual PM, PM_{10}, and $PM_{2.5}$ emissions are calculated using emission factor expression 2 from AP-42, Section 13.2.1 (01/11), which accounts for days when the roads are wet, and emissions are reduced (Equation B below). Input parameters from AP-42, Tables 13.2.1-1 and 13.2.1-2 (01/11) are also used to calculate emission factors for vehicle travel on paved roads.

The expressions from AP-42, Section 13.2.1 used to calculate the uncontrolled emission factors are as follows:

$$EF_{HD} = (k) \times (sL)^{0.91} \times (W)^{1.02} \qquad \text{Equation A}$$

$$EF_{A} = \left[(k) \times (sL)^{0.91} \times (W)^{1.02}\right] \times \left(1 - \frac{P}{4N}\right) \qquad \text{Equation B}$$

where:

EF_{HD} = hourly/daily emission factor (lb/VMT);

EF_{A} = annual emission factor (lb/VMT);

k = particle size multiplier (0.011 for PM, 0.0022 for PM_{10}, and 0.00054 for $PM_{2.5}$ from AP-42, Table 13.2.1-1);

sL = road surface silt loading (0.2 g/m^2, since there will be no copper processing in the near vicinity of the paved entrance road to cause an increased silt loading and the road will be well maintained by the RCP, the silt loading for the paved entrance

road is estimated to be equal to the silt loading of a public road with an average daily traffic rate between 500 and 5,000 vehicles);

W = mean vehicle weight of all support vehicles traveling on the paved entrance road (tons, presented in Tables B.6 through B.10 in Appendix B for annual, daily, and hourly time periods during Years 1, 5, 10, 15, and 20);

P = number of days during the averaging period with at least 0.01 inches of precipitation (61 days/year, average data from 1950 – 2008 from the Western Region Climate Center, Santa Rita Experimental Range weather station located 8 miles southwest of the RCP at 4,300 feet above mean sea level);

N = number of days in the averaging period (365 days for an averaging period of 1 year);

The emission factor for support vehicle use on paved roads is determined on an annual, daily, and hourly basis due to the mean vehicle weight (W) varying for those time periods and the incorporation of "wet days" to the annual emission factor.

Control Efficiency

Besides good operating practices, other pollution control methods are not implemented during support vehicle use on the paved entrance road.

5.4 ADDED SECTION 2.11

Due to the addition of paving at the RCP, Section 2.11 is added to the Emission Inventory Information in order to separate emissions from support vehicles into those from use on unpaved roads (addressed in Section 2.9) and those from use on the different paved roads. Section 2.11 is entitled *Support Vehicle Use on Paved Industrial Roads (Unit ID: MN16c)* and includes the following information:

Process Rate

The annual, maximum daily, and hourly process rates for support vehicle use on the paved industrial roads are calculated by summing the annual, maximum daily, and hourly amount of VMT for each type of support vehicle.

The types of support vehicles that will use the paved industrial roads at the RCP include shipment and delivery vehicles and personnel pickup trucks and vans. It is estimated that 90% of the total use of the personnel pickup trucks and vans will be on the paved roads at the RCP (including both the entrance road and the industrial roads).

The annual amount of VMT on the paved industrial roads for the personnel pickup trucks and vans is based on usage determinations, which are anticipated to be consistent throughout the life of the mine. The maximum daily amount of VMT on paved industrial roads for personnel pickup trucks and vans is determined by dividing the annual VMT by 365, the quantity of days per year the trucks and vans will be used. The hourly process rate is determined by dividing the maximum daily use rate by 24 hours/day.

For the shipment and delivery trucks, the annual, maximum daily, and hourly amounts of VMT on the paved industrial roads are calculated by multiplying the amount of shipments and deliveries in any given year, day, or hour by the distance the shipment and delivery trucks travel on the paved industrial roads (estimated at 1.2 VMT). It is estimated that after using the paved entrance road, the shipment and delivery vehicles will travel an additional 0.6 miles into the facility on the paved industrial roads to reach their destination. The shipment and delivery trucks are expected to then travel the same 0.6 miles to get back to the paved entrance road to leave the facility.

The annual and daily amount of shipments and deliveries are calculated by dividing the quantity of the material being shipped or delivered by the capacity of the shipment or delivery truck. The quantities of material being shipped are assumed to be equal throughout the life of the mine. The hourly amounts of shipments and deliveries are based on the maximum amount of shipments or deliveries the RCP can accommodate in any one hour for each material.

The annual, maximum daily, and hourly VMT on paved industrial roads, the support vehicle fleet size, and the support vehicle weight are presented in Tables B.11 through B.15 in Appendix B for Years 1, 5, 10, 15, and 20 in the life of the mine, respectively.

Emission Factor

Uncontrolled hourly and daily PM, PM_{10}, and $PM_{2.5}$ emissions resulting from support vehicle travel on paved industrial roads are calculated using Equations A and B. The number of days during the averaging period with greater than 0.01 inch of precipitation (P, 61 days/year) and the number of days in the averaging period (N, 365 days) are equal to the values used to calculate the emission factor in Section 2.10. Explanations for how these values are determined are presented in Section 2.10.

The paved industrial roads within the RCP facility are estimated to have a road silt loading (sL, g/m^2) equal to the mean value for quarry facilities (8.2 g/m^2), as listed in AP-42, Table 13.2.1-3 (01/11). Quarry facilities have similar processing characteristics to the RCP and are assumed to have similar paved road silt loadings.

The mean vehicle weight (W, tons) of all support vehicles traveling on the paved industrial roads are presented in Tables B.11 through B.15 in Appendix B for annual, daily, and hourly time periods during Years 1, 5, 10, 15, and 20.

Control Efficiency

Besides good operating practices, other pollution control methods are not implemented during support vehicle use on the paved industrial roads.

5.5 AMENDED SECTION 3.3

The control efficiency information of Section 3.3 is amended as follows to address the replacement of the crushing area scrubber with the crushing area dust collector:

Emissions of particulate matter resulting from primary crushing are controlled indirectly by the crushing area dust collector system. The primary crusher is designed in a conical shape such that crushing and particulate matter generation occurs near the bottom of the crusher and is emitted through the exit of the crusher. This point is controlled by the crushing area dust collector system (see Section 3.4). The dust collector system has a 100% capture efficiency and picks up and delivers the particulate matter entrained air to the dust collector for processing. Emission calculations for the dust collector system are presented in Section 10.

5.6 AMENDED SECTION 3.4 INCLUDING TABLE 3.1

The control efficiency information of Section 3.4 including Table 3.1 is amended as follows to address the replacement of the crushing area, stockpile area, and reclaim tunnel wet scrubbers with dust collectors, the renaming of the stockpile feed conveyor, the replacement of the stockpile tripper conveyor, and the addition of the stockpile feed conveyor transfer point and SAG feed conveyor dust collectors:

Emissions of particulate matter resulting from the material transfers from the primary crusher to the coarse ore stockpile and from the coarse ore stockpile to the SAG mill feed conveyor are controlled by either being in an enclosed area, underground, or collected by dust collector systems. When process material is transferred to an enclosed piece of equipment or the equipment is located underground, particulate emissions are controlled due to the emissions not being able to escape and a 100% control efficiency is assumed. Since this control is inherent to the process, the control efficiency is applied during both uncontrolled and controlled emission calculations. The dust collector systems used at the material transfer points have a 100% capture efficiency and pick up and deliver the particulate matter entrained air to the dust collectors for processing. The particulate matter control method used at each material transfer point from the primary crusher to the coarse ore stockpile and from the coarse ore stockpile to the SAG mill feed conveyor is presented in Table 3.1. Emission calculations for the dust collector systems are presented in Section 10.

Table 3.1 Wind Speeds and Control Methods for the Material Transfers from the Primary Crusher to the Coarse Ore Stockpile and from the Coarse Ore Stockpile to the SAG Mill Feed Conveyor

Unit ID	Unit Description	Wind Speed	Control Method
PC04	Primary Crusher (PCr) to Crusher Discharge Hopper (H-CDs)	1.3 mph	Enclosed
PC05	Crusher Discharge Hopper (H-CDs) to Crusher Discharge Feeder (F-CD)	1.3 mph	Crushing Area Dust Collector (PC-CADC)
PC06	Crusher Discharge Feeder (F-CD) to Stockpile Feed Conveyor No. 1 (CV-SF1)	1.3 mph	Crushing Area Dust Collector (PC-CADC)
PC07	Stockpile Feed Conveyor No. 1 (CV-SF1) to Stockpile Feed Conveyor No. 2 (CV-SF2)	1.3 mph	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)
PC08	Stockpile Feed Conveyor No. 2 (CV-SF2) to Covered Coarse Ore Stockpile	1.3 mph	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC) [a]
PC10	Coarse Ore Stockpile to Reclaim Feeders (F-R1/R4)	1.3 mph	Underground
PC11	Reclaim Feeders (F-R1/R4) to Reclaim Conveyor (CV-R)	1.3 mph	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC) [a]
PC12	Reclaim Conveyor (CV-R) to SAG Mill Feed Conveyor (CV-SMF)	1.3 mph	SAG Feed Conveyor Dust Collector (PC-SFDC)

[a] This emission unit is located within the coarse ore stockpile building in addition to being controlled by the dust collector. Emission calculations are based on 100% capture efficiency of the dust collector.

The stockpile area and reclaim tunnel dust collector system controls particulate emissions within the stockpile building. Since the material transfer point from the stockpile feed conveyor No. 2 to the coarse ore stockpile occurs within the stockpile building, the particulate matter emissions resulting from the transfer are indirectly controlled by the stockpile area and reclaim tunnel dust collector system.

5.7 AMENDED SECTION 3.6

The second paragraph of the process rate information of Section 3.6 is amended as follows to account for bulk pebble lime no longer being transferred onto the SAG Mill Feed Conveyor:

The annual, maximum daily, and hourly process rate for the material transfer from the SAG mill feed conveyor to the SAG mill is equal to the sum of the process rates of the two conveyors feeing the SAG mill feed conveyor, the reclaim conveyor (see Section 3.4), and Pebble Crusher No. 3 (described above).

The control efficiency information of Section 3.6 is amended as follows to address the addition of the SAG feed conveyor dust collector:

Emissions of particulate matter resulting from the material transfers from pebble conveyor No. 3 to the SAG mill feed conveyor and from the SAG mill feed conveyor to the SAG mill are controlled by the SAG feed conveyor dust collector system and the addition of process water, respectively. The dust collector system has a 100% capture efficiency and picks up and delivers the particulate matter entrained air to the dust collector for processing. Emission calculations for the dust collector system are presented in Section 10. Additionally, when process material is transferred to a piece of equipment along with the addition of process water, particulate emissions are controlled due to the moisture that has been added and a 100% control efficiency is assumed. Since this control is inherent to the process, the control efficiency is applied during both uncontrolled and controlled emission calculations.

5.8 AMENDED SECTION 4.1

The process rate information of Section 4.1 is amended as follows to address the removal of the bulk pebble lime system by eliminating reference to Section 3.6, which is amended above:

The annual process rate for the SAG mill (which processes ore and additives such as milk of lime) is based on the maximum capacity of the mill (5,670 tons/hour) as limited on an annual basis by the filter system designed to remove water from the molybdenum concentrate, copper concentrate, and tailings and continuous operation (5,670 tons/hour * 8,760 hour/year = 49,669,200 tons/year). The hourly and maximum daily process rates are based on the maximum capacity of the mill (8,726.33 tons/hour) and continuous operation (8,726.33 tons/hour * 24 hours/day = 209,432 tpd).

5.9 AMENDED SECTION 4.2

The first paragraph of the process rate information of Section 4.2 is amended as follows to address the removal of the bulk pebble lime system by referencing Section 4.1 instead of Section 3.6:

The annual, daily, and hourly process rates for the trommel screen are equal to the process rates of the SAG mill (see Section 4.1).

5.10 AMENDED SECTION 4.3

The control efficiency information of Section 4.3 is amended as follows to address the replacement of the pebble crusher area scrubber with the pebble crusher area dust collector:

Emissions of particulate matter resulting from pebble crushing are indirectly controlled by the pebble crusher area dust collector system. The pebble crusher is designed such that crushing and particulate matter generation that occurs within the crusher will be emitted through either the top entrance or bottom exit of the crusher. The bottom exit is controlled by the pebble crusher area dust collector system while the top entrance is enclosed by the pebble crusher feeder (the entrance to the pebble crusher feeder is controlled by the pebble crusher area dust collector). The dust collector system has a 100% capture efficiency and picks up and delivers the particulate matter entrained air to the dust collector for processing. Emission calculations for the dust collector system are presented in Section 10.

5.11 AMENDED SECTION 4.4 INCLUDING TABLE 4.1

The process rate information of Section 4.4 is amended as follows to address the removal of the bulk pebble lime system by referencing Section 4.1 instead of Section 3.6:

> The annual, daily, and hourly process rates for the material transfer from the SAG mill to the trommel screen are equal to the process rates of the SAG mill, as described in Section 4.1. The annual, daily, and hourly process rates for the material transfer from the trommel screen to the pebble wash screen are equal to the process rates of the pebble wash screen, as described in Section 4.2. The annual, daily, and hourly process rates for the material transfers from the pebble wash screen to the pebble crusher and from the pebble crusher to pebble conveyor No. 3 are equal to the process rates of the pebble crusher, as described in Section 4.3.

The control efficiency information of Section 4.4 including Table 4.1 is amended as follows to address the replacement of the pebble crusher area scrubber with the pebble crusher area dust collector:

> Emissions of particulate matter resulting from the material transfers during the milling process are controlled by including only clean, wet ore, being in an enclosed system, or collected by the pebble crusher area dust collector system. The wet processes before the material transfer points during milling contain sufficient amount of moisture such that some fine particles agglomerate and all others are washed away. Therefore, at the material transfer points following the wet processes, the ore is considered cleaned and wet and no potential particulate emissions are formed. However, pebble conveyor No. 2 is a long transfer conveyor and the ore has the potential to dry before being discharged into the SAG oversize surge bin. Therefore, the material transfer points after pebble conveyor No. 2 have the potential to emit particulate emissions and are controlled by the pebble crusher area dust collector system. When process material is transferred to an enclosed piece of equipment, particulate emissions are controlled due to the emissions not being able to escape and a 100% control efficiency is assumed. Since this control is inherent to the process, the control efficiency is applied during both uncontrolled and controlled emission calculations. The dust collector system used at the material transfer points has a 100% capture efficiency and picks up and delivers the particulate matter entrained air to the dust collector for processing. Emission calculations for the dust collector system are presented in Section 10. The particulate matter control method used at each material transfer point during milling is presented in Table 4.1.

Table 4.1 Wind Speeds and Control Methods for the Material Transfers from the SAG Mill to the Trommel Screen, from the Trommel Screen to the Pebble Wash Screen, from the Pebble Wash Screen to the Pebble Crusher, and from the Pebble Crusher to Pebble Conveyor No. 3

Unit ID	Unit Description	Wind Speed	Control Method
M02	SAG Mill (M-SAG) to Trommel Screen (Sn-T)	1.3 mph	Enclosed
M04	Trommel Screen (Sn-T) to Pebble Conveyor No. 1 (CV-Pb1)	1.3 mph	Clean, Wet Ore
M05	Pebble Conveyor No. 1 (CV-Pb1) to Pebble Wash Screen (Sn-PbW)	1.3 mph	Clean, Wet Ore
M07	Pebble Wash Screen (Sn-PbW) to Pebble Conveyor No. 2	1.3 mph	Clean, Wet Ore
M08	Pebble Conveyor No. 2 (CV-Pb2) to SAG Oversize Surge Bin (B-SAGOS)	1.3 mph	Pebble Crusher Area Dust Collector (PC-PCADC)
M09	SAG Oversize Surge Bin (B-SAGOS) to Pebble Crusher Feeder (F-PbC)	1.3 mph	Pebble Crusher Area Dust Collector (PC-PCADC)
M10	Pebble Crusher Feeder (F-PbC) to Pebble Crusher (PbC)	1.3 mph	Enclosed
M12	Pebble Crusher (PbC) to Pebble Conveyor No. 3 (CV-Pb3)	1.3 mph	Pebble Crusher Area Dust Collector (PC-PCADC)

5.12 AMENDED SECTION 5.1 INCLUDING TABLE 5.1

The control efficiency information of Section 5.1 including Table 5.1 is amended as follows to address the replacement of the copper concentrate scrubbers with the copper concentrate dust collectors:

> Emissions of particulate matter resulting from the material transfers from the copper concentrate filters to the copper concentrate loadout stockpile and from the copper concentrate loadout stockpile to the copper concentrate shipment trucks are controlled by either being in an enclosed system or indirectly collected by the copper concentrate dust collector systems. When process material is transferred to an enclosed piece of equipment, particulate emissions are controlled due to the emissions not being able to escape and a 100% control efficiency is assumed. Since this control is inherent to the process, the control efficiency is applied during both uncontrolled and controlled emission calculations. The dust collector systems used at the material transfer points have a 100% capture efficiency and pick up and deliver the particulate matter entrained air to the dust collectors for processing. Emission calculations for the dust collector systems are presented in Section 10. The particulate matter control method used at each material transfer point from the copper concentrate filters to the copper concentrate loadout stockpile and from the copper concentrate loadout stockpile to the copper concentrate shipment trucks is presented in Table 5.1.

Table 5.1 Wind Speeds and Control Methods for the Material Transfers from the Copper Concentrate Filters to the Copper Concentrate Loadout Stockpile and from the Copper Concentrate Loadout Stockpile to the Copper Concentrate Shipment Trucks

Unit ID	Unit Description	Wind Speed	Control Method
CCD01	Copper Concentrate Filters (Ft-CC1/CC4) to Copper Concentrate Conveyor (CV-CC)	1.3 mph	Enclosed
CCD02	Copper Concentrate Conveyor (CV-CC) to Copper Concentrate Loadout Stockpile	1.3 mph	Copper Concentrate Dust Collectors (PC-CCDC1/PC-CCDC2)
CCD04	Copper Concentrate Loadout Stockpile to Shipment Trucks via Front End Loaders	1.3 mph	Copper Concentrate Dust Collectors (PC-CCDC1/PC-CCDC2)

The copper concentrate dust collector systems control particulate emissions within the copper concentrate loadout building. Since the material transfer points from the copper concentrate conveyor to the copper concentrate loadout stockpile and from the copper concentrate loadout stockpile to the copper concentrate shipment trucks occur within the copper concentrate loadout building, the particulate matter emissions resulting from the transfer are indirectly controlled by the copper concentrate dust collector systems.

5.13 AMENDED SECTION 9.1

The title of Section 9.1 is amended to *Lime Loading (Unit ID: MS01)* due to the removal of lime loading to the bulk pebble lime silo (previously Unit ID: MS01) and renaming MS01 as lime transfer to the lime storage bin. The process rate information of Section 9.1 is amended as follows to address the lime systems being combined and all lime being slaked:

The annual process rate for lime loading is based on a facility-wide annual lime usage rate of 56,700 tons. The usage rate is assumed consistent throughout the life of the mine. The maximum daily process rate is calculated from the annual usage rate divided by 365 days/year, the quantity of days per year lime will be used at the RCP and adding a 20% maximum capacity factor. The hourly process rate is determined by dividing the maximum daily usage rate by 24 hours/day.

The control efficiency information of Section 9.1 is amended as follows to eliminate the use of the bulk pebble lime silo bin vent:

Emissions of particulate matter resulting from loading lime into the lime storage bin are controlled by the lime storage bin vent system. The bin vent system is designed to be used as a collector to prevent the loss of material, but also treats the dust entrained displacement air generated during the loading process. The bin vent system has a pick up efficiency of 100% (it is located directly on the bin) and a 90% control efficiency, as determined by the bin vent vendor. Since this control is inherent to the process, the control efficiency is applied during both uncontrolled and controlled emission calculations.

5.14 AMENDED SECTION 9.2 INCLUDING TABLE 9.2

The second paragraph of the process rate information of Section 9.2 is deleted to eliminate reference to the two separate lime systems. The design of the systems has been refined and only one lime system will be used and all lime will be slaked.

Table 9.2 of the control efficiency information of Section 9.2 is amended as follows to address the new processes and controls associated with MS02 and MS03:

Table 9.2 Control Methods for the Reagent Material Transfer Points

Unit ID	Unit Description	Control Method
MS02	Lime Storage Bin (B-L) to Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2)	Enclosed
MS03	Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2) to Lime Slakers 1 and 2 (T-LS1/2)	Enclosed

5.15 ADDED SECTION 9.3

Section 9.3 is added to the Emission Inventory Information and details the calculation of emissions from lime slaking at the RCP facility. Section 9.3 is entitled *Lime Slaking (Unit ID: MS04)* and includes the following information:

Process Rate

The annual process rate for the lime slaking is based on a facility-wide annual lime usage rate of 56,700 tons. The usage rate is assumed consistent throughout the life of the mine. The maximum daily process rate is calculated from the annual usage rate divided by 365 days/year, the quantity of days per year lime will be used at the RCP and adding a 20% maximum capacity factor. The hourly process rate is determined by dividing the maximum daily usage rate by 24 hours/day.

Emission Factor

Controlled filterable PM and condensable PM emissions from lime slaking are calculated using the emission factors of 0.067 lb/ton and 0.013 lb/ton, respectively, from AP-42, Table 11.17-2 (02/98) for atmospheric hydrators with wet scrubbers. The total controlled PM emission factor is calculated by summing the filterable and condensable emission factors. PM_{10} and $PM_{2.5}$ emissions from slaking are assumed to equal PM emissions as a worst case estimate.

Control Efficiency

Emissions of particulate matter resulting from lime slaking are controlled by the lime slaker scrubber. The lime slaker scrubber has a 100% capture efficiency and picks up and delivers

the particulate matter entrained air to the scrubber for processing. The scrubber is estimated to have a control efficiency of 99% from AP-42, Table B.2-3 (09/96) for high efficiency scrubbers. Since the emission factor for lime slaking includes the use of a scrubber, the 99% control efficiency is used to back calculate the uncontrolled emission factor for lime slaking.

5.16 AMENDED SECTION 10 INCLUDING TABLE 10.1, TABLE 10.2, AND TABLE 10.3

The title of Section 10 is amended to *Particulate Matter Pollution Control Equipment with Emission Limits (Unit IDs: PCL01 through PCL12)* due to the replacement of the wet scrubbers with cartridge filter dust collectors.

Table 10.1 of the process rate information in Section 10 is amended as follows to address the replacement of the wet scrubbers PCL01 through PCL06 with cartridge filter dust collectors:

Table 10.1 Process Rates for Particulate Matter Pollution Control Equipment

Unit ID	Pollution Control Equipment	Exhaust Flow Rate	Operating Hours	
			Annual	Daily
PCL01	Crushing Area Dust Collector (PC-CADC)	18,000 acfm	8,760	24
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	41,500 acfm	8,760	24
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	10,000 acfm	8,760	24
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	9,000 acfm	8,760	24
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	50,000 acfm	8,760	24
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	50,000 acfm	8,760	24
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	13,000 acfm	8,760	24

Table 10.2 of the emission factor information in Section 10 is amended as follows to address the replacement of the wet scrubbers PCL01 through PCL06 with dust collectors, the consequent revision of the stack height and PM_{10} emission limits, and the revised stack height and emission limit of the Molybdenum Dust Collector:

Table 10.2 Voluntarily Accepted PM_{10} Emission Limits and Outlet Grain Loadings and Particulate Matter Pollution Control Equipment Properties

Unit ID	Pollution Control Equipment	PM_{10} Outlet Grain Loading / Emission Limit	Exhaust Temperature (°F)	Stack Height (ft)
PCL01	Crushing Area Dust Collector (PC-CADC)	0.64 lb/hr	Ambient [a]	20.53
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	1.47 lb/hr	Ambient [a]	19.19
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	0.36 lb/hr	Ambient [a]	17.33
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	0.32 lb/hr	Ambient [a]	17.33
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	1.78 lb/hr	Ambient [a]	20.95
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	1.78 lb/hr	Ambient [a]	20.95
PCL08	Molybdenum Dust Collector (PC-MDC)	0.053 lb/hr	Ambient [a]	5.55
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	0.46 lb/hr	Ambient [a]	17.25

[a] The average ambient temperature at the RCP is 62.43 °F (calculated from hourly data collected at the meteorological station at the RCP from April 2006 through May 2009).

Table 10.3 of the emission factor information in Section 10 is amended as follows to address the replacement of the wet scrubbers PCL01 through PCL06 with dust collectors and the consequent revision of PM and $PM_{2.5}$ fractions of PM_{10} emissions (the PM and $PM_{2.5}$ fractions of PM_{10} emissions do not change for the Molybdenum Dust Collector):

Table 10.3 PM and $PM_{2.5}$ Fractions of PM_{10} Emissions from the Particulate Matter Pollution Control Equipment

Unit ID	Pollution Control Equipment	PM Fraction	$PM_{2.5}$ Fraction
PCL01	Crushing Area Dust Collector (PC-CADC)	2.22	0.18
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	2.11	0.15
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	2.11	0.15
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	2.99	0.18
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	2.11	0.15
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	2.11	0.15
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	2.11	0.15

5.17 AMENDED SECTION 11.2

The control efficiency information of Section 11.2 is amended as follows to address the reduction in the number of electrowinning cell ventilation scrubbers:

> Emissions of H_2SO_4 and cobalt compounds resulting from electrowinning are controlled by two cell ventilation scrubber systems. A third scrubber will be used to provide redundancy when one of the other two scrubbers is required to be shut down for maintenance activities. The scrubber systems have a 100% capture efficiency and control the H_2SO_4 and cobalt compound emissions with a 99% efficiency.

5.18 AMENDED SECTION 13

The first paragraph of the Nonroad Engine Emission Standards part of the emission factor information of Section 13 is amended as follows to address the use of six Tier 4 haul trucks and twenty-five Tier 2 haul trucks:

> The RCP has committed to using Tier 4 engines in all nonroad vehicles except twenty-five of the thirty-one haul trucks and the 2,000 hp front end loaders, which will use Tier 2 engines.

5.19 AMENDED APPENDIX B

Tables B.1 through B.5 of Appendix B are amended and Tables B.6 though B.15 are added in order to separate support vehicle information into the following categories:

- Information for support vehicle use on unpaved roads;
- Information for support vehicle use on the paved entrance road; and
- Information for support vehicle use on the paved industrial roads.

The amended Tables B.1 through B.5 are presented in Appendix E of this document and include fleet size, vehicle weight, VMT, and weight * VMT calculations for each support vehicle used on unpaved roads in Years 1, 5, 10, 15, and 20 of the RCP. The added Tables B.6 through B.15 present similar information for each support vehicle used on the different paved roads at the RCP and are also shown in Appendix E of this document. Appendix E of this document presents the amended and added Tables B.1 through B.15 in their entirety to accurately show total VMT and weighted average calculations for the entire support vehicle fleet.

5.20 AMENDED APPENDIX H

Emission Tables H.1 through H.95 are amended to address all refinements to process operations and pollution control devices described in Sections 2 and 3, respectively. The amended Tables H.1 through H.95 are presented in Appendix F of this document. Due to the numerous changes to emission calculations (all changes are discussed in Section 5), Tables H.1 through H.95 are presented in their entirety to completely show how the revised emissions are calculated and totaled.

APPENDIX A

CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS

CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief.

Typed Company Name: Rosemont Copper Company

Official Title of Signer: Vice President, Environmental and Regulatory Affairs

Typed Name of Signer: Katherine Ann Arnold

Signature of Responsible Official: Katherine Ann Arnold

Date: March 19, 2012

APPENDIX B

AMENDED EMISSION SOURCE FORM

EMISSION SOURCES

Estimated "Potential to Emit" per R18-2-101.
Review of applications and issuance of permits will be expedited by supplying all necessary information on this Table.

Date 03/19/2012

REGULATED AIR POLLUTANT DATA					EMISSION POINT DISCHARGE PARAMETERS									
EMISSION POINT (1)		CHEMICAL COMPOSITION OF TOTAL STREAM	R. AIR POLLUTANT EMISSION RATE		UTM COORDINATES OF EMISSION PT. (5)			STACK SOURCES (6)					NONPOINT SOURCES (7)	
								HEIGHT ABOVE GROUND	HEIGHT ABOVE STRUC.	EXIT DATA				
NUMBER	NAME	REGULATED AIR POLLUTANT NAME (2)	#/ HR. (3)	TONS/ YEAR (4)	ZONE	EAST (Mtrs)	NORTH (Mtrs)	(feet)	(feet)	DIA. (ft.)	VEL. (fps.)	TEMP. (°F)	LENGTH (ft.)	WIDTH (ft.)
MN15a	Support Vehicle Use on Unpaved Roads (Inside the Pit)	PM/TSP	27.97	99.55	12	522319.9	3521271.1	--	--	--	--	--	*	*
		PM_{10}	7.19	25.58										
		$PM_{2.5}$	0.72	2.56										
MN15b	Support Vehicle Use on Unpaved Roads (Outside the Pit)	PM/TSP	27.97	99.55	12	523554.6	3520843.0	--	--	--	--	--	53.4	53.4
		PM_{10}	7.19	25.58										
		$PM_{2.5}$	0.72	2.56										
M16a	Support Vehicle Use on the Paved Entrance Road (within the process area boundary)	PM/TSP	1.35	1.58	12	na	na	--	--	--	--	--	53.4	53.4
		PM_{10}	0.27	0.32										
		$PM_{2.5}$	0.07	0.08										
M16b	Support Vehicle Use on the Paved Entrance Road (outside of the process area boundary)	PM/TSP	5.87	6.84	12	na	na	--	--	--	--	--	53.4	53.4
		PM_{10}	1.17	1.37										
		$PM_{2.5}$	0.29	0.34										
M16c	Support Vehicle Use on Paved Industrial Roads	PM/TSP	47.33	74.37	12	na	na	--	--	--	--	--	53.4	53.4
		PM_{10}	9.47	14.87										
		$PM_{2.5}$	2.32	3.65										
MS01	Transfer of Lime to the Lime Storage Bin (B-L)	PM/TSP	0.47	1.73	12	na	na	na	na	na	na	na	--	--
		PM_{10}	0.22	0.82										
		$PM_{2.5}$	0.03	0.12										
MS04	Lime Slaking in Lime Slakers 1 and 2 (T-LS1/2)	PM/TSP	0.62	2.27	12	na	na	na	na	na	na	na	--	--
		PM_{10}	0.62	2.27										
		$PM_{2.5}$	0.62	2.27										
PCL01	Crushing Area Dust Collector (PC-CADC)	PM/TSP	1.42	6.22	12	na	na	na	20.53	2.9	42.1	62.43	--	--
		PM_{10}	0.64	2.80										
		$PM_{2.5}$	0.12	0.52										
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	PM/TSP	3.11	13.61	12	na	na	na	19.19	3.7	59.3	62.43	--	--
		PM_{10}	1.47	6.44										
		$PM_{2.5}$	0.22	0.97										
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	PM/TSP	0.76	3.33	12	na	na	na	17.33	1.8	60.0	62.43	--	--
		PM_{10}	0.36	1.58										
		$PM_{2.5}$	0.05	0.24										
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	PM/TSP	0.96	4.19	12	na	na	na	17.33	1.8	56.2	62.43	--	--
		PM_{10}	0.32	1.40										
		$PM_{2.5}$	0.06	0.26										
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	PM/TSP	3.76	16.48	12	na	na	na	20.95	4.1	59.7	62.43	--	--
		PM_{10}	1.78	7.80										
		$PM_{2.5}$	0.27	1.18										

EMISSION SOURCES

Estimated "Potential to Emit" per R18-2-101.
Review of applications and issuance of permits will be expedited by supplying all necessary information on this Table.

Date 03/19/2012

REGULATED AIR POLLUTANT DATA					EMISSION POINT DISCHARGE PARAMETERS									
EMISSION POINT (1)		CHEMICAL COMPOSITION OF TOTAL STREAM	R. AIR POLLUTANT EMISSION RATE		UTM COORDINATES OF EMISSION PT. (5)			STACK SOURCES (6)					NONPOINT SOURCES (7)	
NUMBER	NAME	REGULATED AIR POLLUTANT NAME (2)	#/ HR. (3)	TONS/ YEAR (4)	ZONE	EAST (Mtrs)	NORTH (Mtrs)	HEIGHT ABOVE GROUND (feet)	HEIGHT ABOVE STRUC. (feet)	EXIT DATA DIA. (ft.)	EXIT DATA VEL. (fps.)	EXIT DATA TEMP. (°F)	LENGTH (ft.)	WIDTH (ft.)
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	PM/TSP	3.76	16.48	12	na	na	na	20.95	4.1	59.7	62.43	--	--
		PM_{10}	1.78	7.80										
		$PM_{2.5}$	0.27	1.18										
PCL08	Molybdenum Dust Collector (PC-MDC)	PM/TSP	0.11	0.49	12	na	na	na	5.55	0.9	39.7	62.43	--	--
		PM_{10}	0.05	0.23										
		$PM_{2.5}$	0.008	0.04										
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	PM/TSP	0.97	4.26	12	na	na	na	17.25	1.9	71.3	62.43	--	--
		PM_{10}	0.46	2.01										
		$PM_{2.5}$	0.07	0.31										

GROUND ELEVATION OF FACILITY ABOVE MEAN SEA LEVEL 5,350 feet

ADEQ STANDARD CONDITIONS ARE 293K AND 101.3 KILOPASCALS (A.A.C. R18-2-101)

General Instructions:

1. Identify each emission point with a unique number for this plant site, consistent with emission point identification used on plot plan, previous permits, and Emissions Inventory Questionnaire. Include fugitive emissions. Limit emission point number to eight (8) character spaces. For each emission point use as many lines as necessary to list regulated air pollutant data. Typical emission point names are: heater, vent, boiler, tank, reactor, separator, baghouse, fugitive, etc. Abbreviations are O.K.

2. Components to be listed include regulated air pollutants as defined in R18-2-101. Examples of typical component names are: Carbon Monoxide (CO), Nitrogen Oxides (NO_x), Sulfur Dioxide (SO_2), Volatile Organic Compounds (VOC), particulate matter (PM), particulate less than 10 microns (PM_{10}), etc. Abbreviations are O.K.

3. Pounds per hour (#/HR) is maximum potential emission rate expected by applicant.

4. Tons per year is annual maximum potential emission expected by applicant, which takes into account process operating schedule.

5. As a minimum applicant shall furnish a facility plot plan as described in the filing instructions. UTM coordinates are required only if the source is major source or is required to perform refined modeling for the purposes of demonstrating compliance with ambient air quality guidelines.

6. Supply additional information as follows if appropriate:

   (a) Stack exit configuration other than a round vertical stack. Show length and width for a rectangular stack. Indicate if horizontal discharge with a note.

   (b) Stack's height above supporting or adjacent structures if structure is within 3 "stack height above ground" of stack.

7. Dimensions of nonpoint sources as defined in R18-2-101.

* Emissions were grouped into the Open Pit Source with a length of 3,280 feet and width of 2,297 feet.
na = not available

APPENDIX C

AMENDED EQUIPMENT LIST

EQUIPMENT LIST [a]

The following table should include all equipment utilized at the facility and be complete with all data requested. Be sure to notate the units (tons/hour, horsepower, etc.) when recording the Maximum Rated Capacity information. Be sure to notate the Serial Number and/or the Equipment ID Number. The date of manufacture must be included in order to determine if portions of the facility are NSPS applicable. Make additional copies of this form if necessary.

Type of Equipment	Maximum Rated Capacity	Make	Model	Serial Number	Date of Manufacturer	Equipment ID
Stockpile Feed Conveyor No. 1	2,690' L X 60" W	na [b]	na	na	New Source	CV-SF1
Crushing Area Dust Collector	18,000 acfm	na	Cartridge Filter	na	New Source	PC-CADC
Stockpile Feed Conveyor No. 2	6,950 tons/hr	na	na	na	New Source	CV-SF2
Stockpile Feed Conveyor Transfer Point Dust Collector	10,000 acfm	na	Cartridge Filter	na	New Source	PC-SFCDC
Stockpile Area and Reclaim Tunnel Dust Collector	41,500 acfm	na	Cartridge Filter	na	New Source	PC-SARTDC
SAG Feed Conveyor Dust Collector	13,000 acfm	na	Cartridge Filter	na	New Source	PC-SFDC
Pebble Crusher Area Dust Collector	9,000 acfm	na	Cartridge Filter	na	New Source	PC-PCADC
Copper Concentrate Dust Collectors	50,000 acfm each	na	Cartridge Filter	na	New Source	PC-CCDC1/ CCDC2
Molybdenum Dust Collector	1,500 acfm	na	Cartridge Filter	na	New Source	PC-MDC
Cell Ventilation Wet Scrubbers	5,000 acfm each	na	na	na	New Source	PC-EWCVS1/ EWCV3

Type of Equipment	Maximum Rated Capacity	Make	Model	Serial Number	Date of Manufacturer	Equipment ID
Lime Transfer Screw Conveyors	na	na	na	na	New Source	CV-LTS1/2
Lime Slakers	na	na	na	na	New Source	T-LS1/2
Lime Slaker Scrubber	500 acfm	na	na	na	New Source	PC-LSS

[a] Equipment List includes only affected equipment (i.e. subject to applicable regulations).

[b] na = not available

APPENDIX D

AMENDED PROCESS FLOW DIAGRAMS
FIGURES B.2, B.3, B.8, B.14, AND B.16

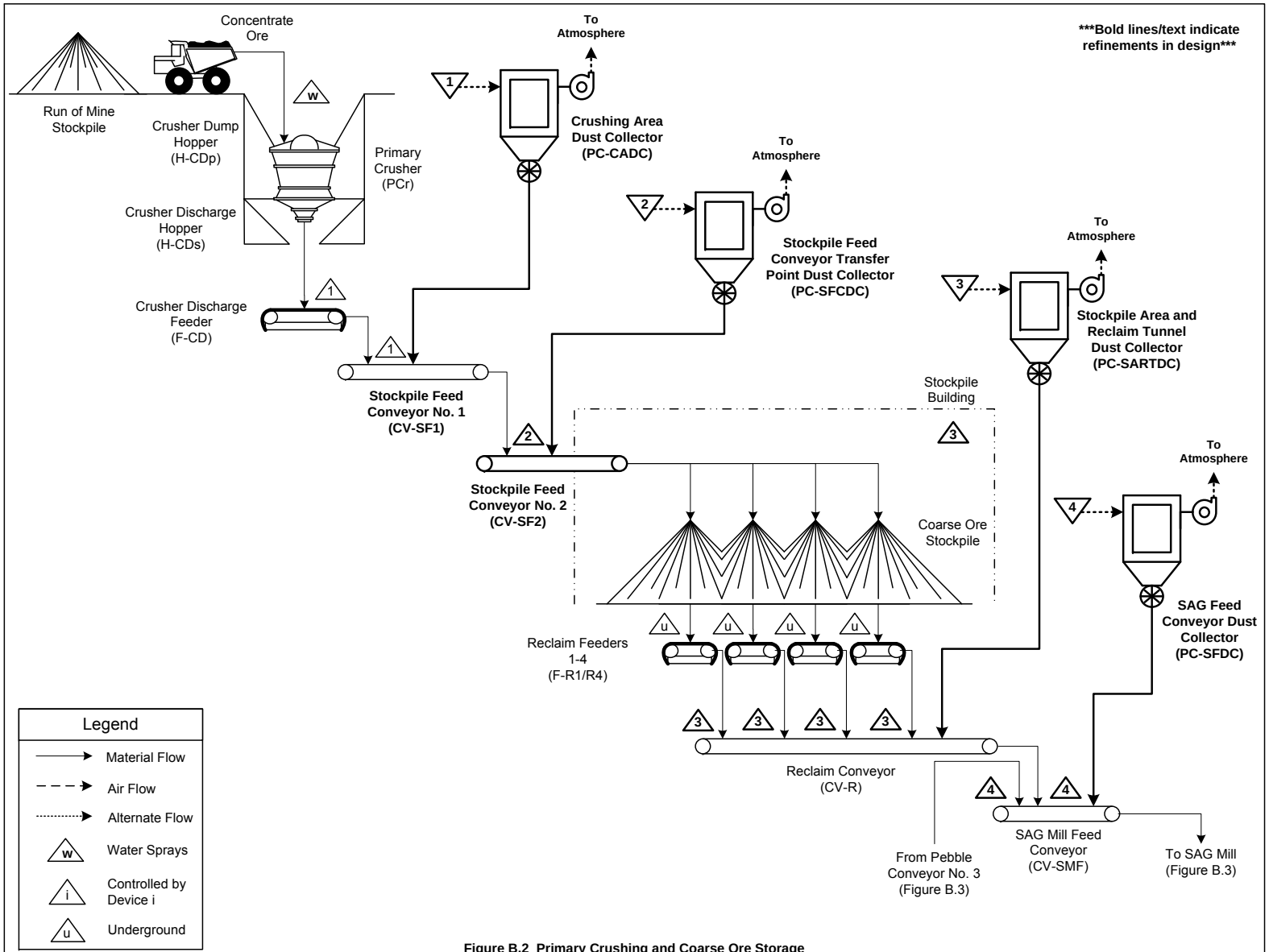


Figure B.2 Primary Crushing and Coarse Ore Storage

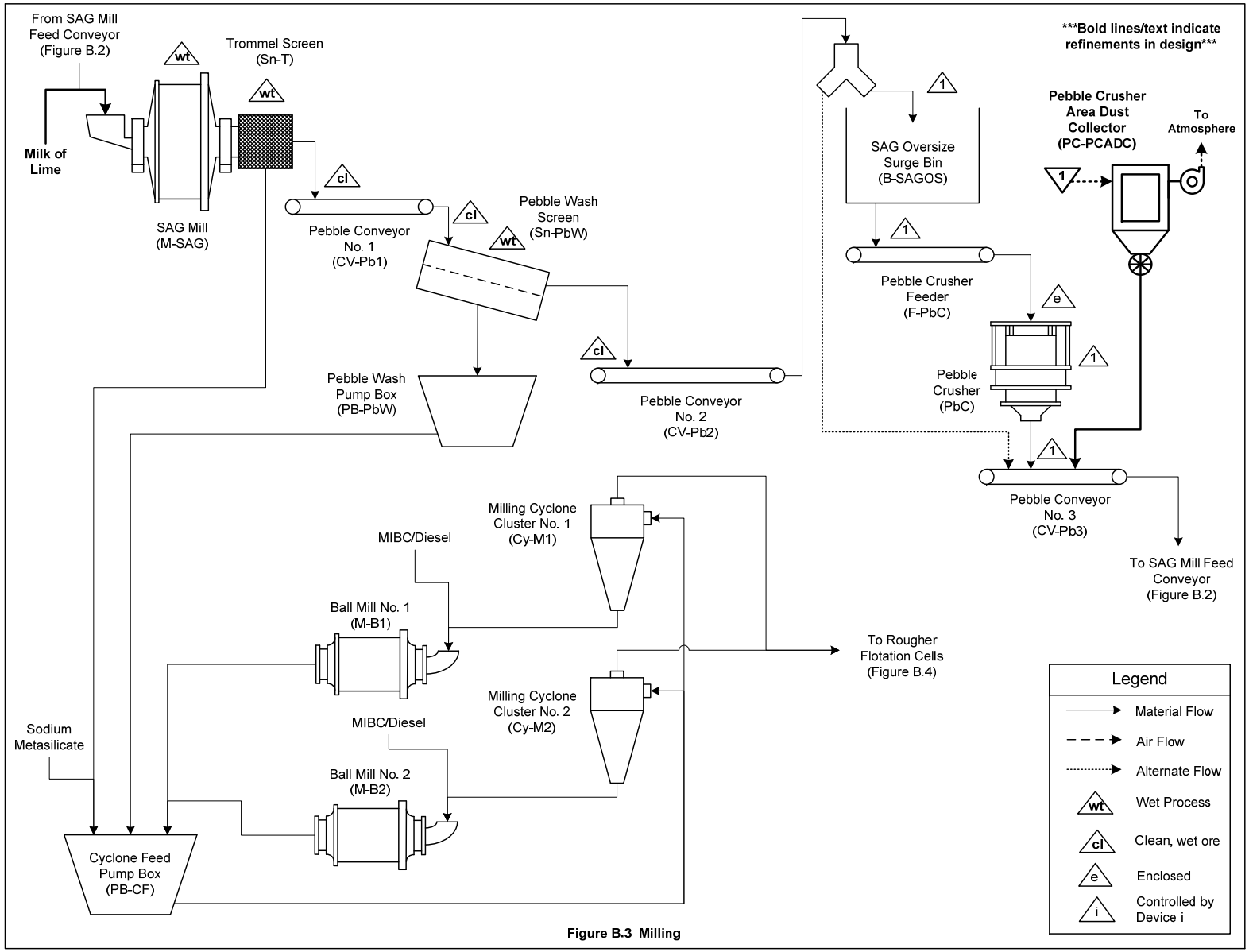


Figure B.3 Milling

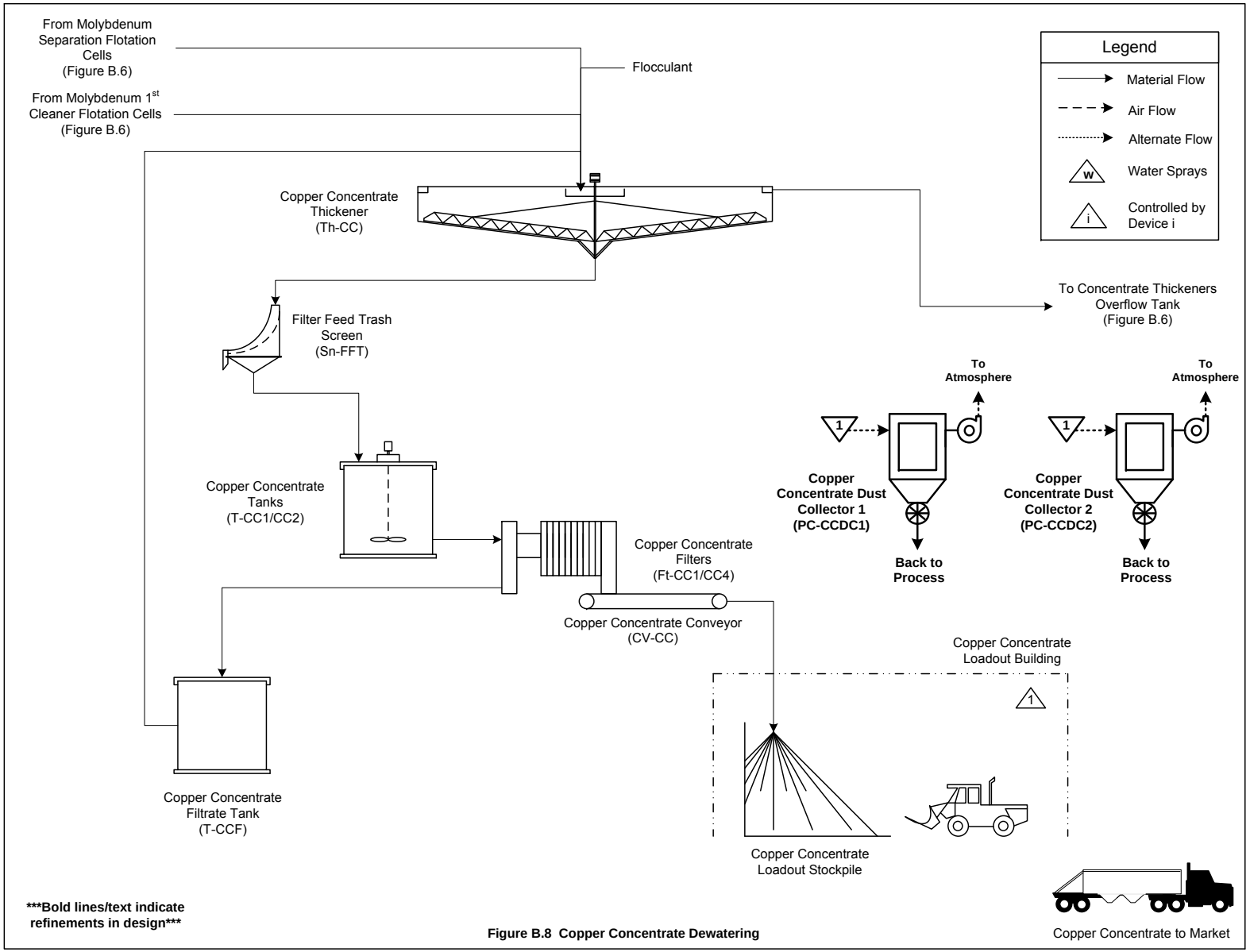
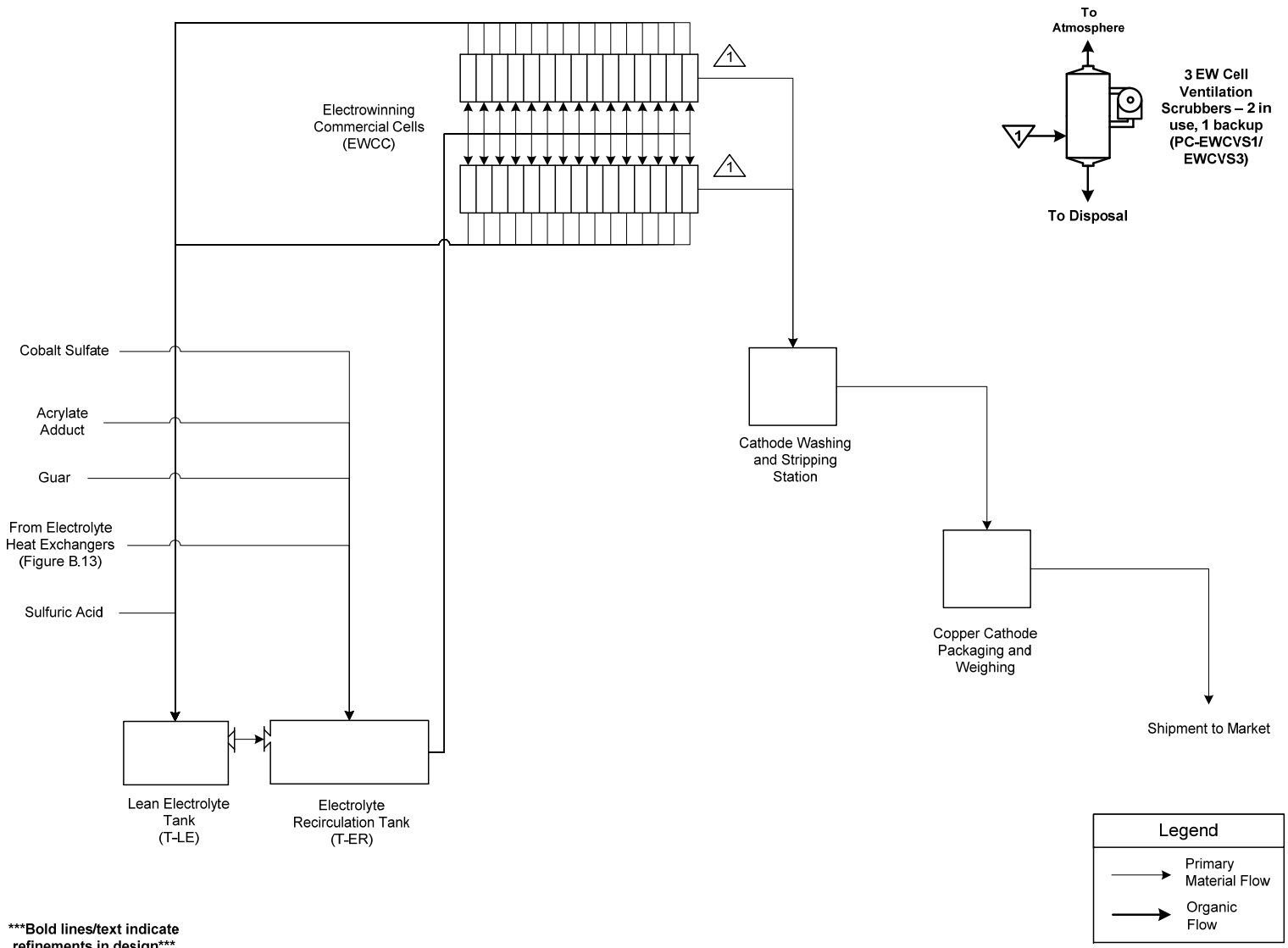


Figure B.8 Copper Concentrate Dewatering



Bold lines/text indicate refinements in design

Figure B.14 Electrowinning and Cathode Handling

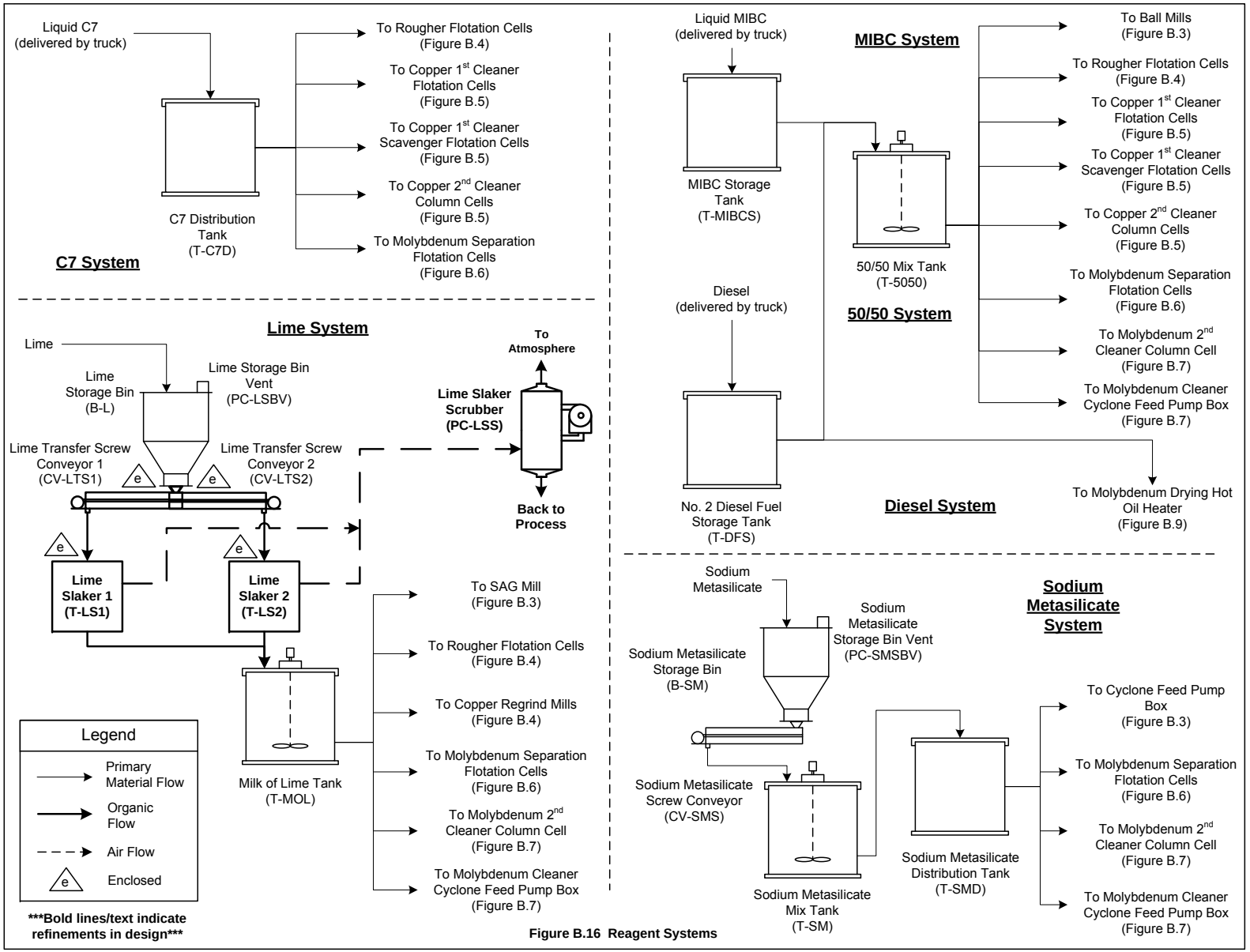


Figure B.16 Reagent Systems

APPENDIX E

AMENDED AND ADDED SUPPORT VEHICLE INFORMATION TABLES B.1 THROUGH B.15

SUPPORT VEHICLE USE ON UNPAVED ROADS
AMENDED TABLES B.1 THROUGH B.5

Table B.1 Support Vehicle Use on Unpaved Roads - Total VMT and Weighted Average - Year 1								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 1**			**Weight * VMT Traveled (total) - Year 1**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Diesel Blasthole Drill, 12.25 inches	2	190.0	133	0.37	0.37	25,363	69.49	69.49
Electric Blasthole Drill, 12.25 inches	1	200.0	67	0.18	0.18	13,349	36.57	36.57
Hydraulic DML 45 Drill	1	50.0	67	0.18	0.18	3,337	9.14	9.14
Front End Loaders	2	253.0	41,391	113.40	4.73	10,471,923	28,690.20	1,195.43
Stemming Truck	2	20.0	5,000	13.70	0.57	100,000	273.97	11.42
ANFO/Slurry Truck, 20 tons	2	20.0	5,000	13.70	0.57	100,000	273.97	11.42
Powder Truck, 2 tons	2	10.0	5,000	13.70	0.57	50,000	136.99	5.71
Front End Loaders, 8 yd^3	2	26.1	8,000	21.92	0.91	209,016	572.65	23.86
Hydraulic Excavator, 385 Cat CL	2	93.7	22,075	60.48	2.52	2,068,005	5,665.77	236.07
Backhoe/Loader, 2 yd^3	1	12.1	1,500	4.11	0.17	18,106	49.60	2.07
All-Terrain Crane, 75 tons	1	36.0	2,000	5.48	0.23	72,000	197.26	8.22
Transporter with Tractor, 200 tons	1	98.4	2,000	5.48	0.23	196,800	539.18	22.47
Fuel/Lube Trucks, 6,000 gallons	2	73.1	30,000	82.19	3.42	2,193,990	6,010.93	250.46
Mechanic Field Service Trucks	5	9.8	75,000	205.48	8.56	731,250	2,003.42	83.48

Table B.1 Support Vehicle Use on Unpaved Roads - Total VMT and Weighted Average - Year 1								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 1**			**Weight * VMT Traveled (total) - Year 1**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Tire Handler	1	8.0	1,000	2.74	0.11	8,000	21.92	0.91
Shop Forklift, 12,000 lbs	1	8.0	1,000	2.74	0.11	8,000	21.92	0.91
Integrated Tool Carrier, 140 hp	1	16.0	3,000	8.22	0.34	48,000	131.51	5.48
Primary Crushing Mobile Crane - 400 tons	1	225.0	92	0.25	0.01	20,700	56.71	2.36
Copper Concentrate Area Front End Loader - Cat 930	1	14.4	11,680	32.00	1.33	168,192	460.80	19.20
Molybdenum Packaging Forklift, 7,000 lbs	1	5.8	3,000	8.22	0.34	17,340	47.51	1.98
Copper Cathode Forklift	1	11.0	3,000	8.22	0.34	33,000	90.41	3.77
Boom Trucks 10 tons, 45 foot boom	1	13.0	3,000	8.22	0.34	39,000	106.85	4.45
Boom Trucks 15 tons, 60 foot boom	1	16.5	3,000	8.22	0.34	49,500	135.62	5.65
Front End Loader, 6 yd^3	1	33.6	6,000	16.44	0.68	201,882	553.10	23.05
Front End Loader, 5 yd^3	1	14.4	3,500	9.59	0.40	50,269	137.72	5.74
Bob Cats, 2,400 lbs	2	1.2	7,000	19.18	0.80	8,400	23.01	0.96
Fork Lift, 2,000 lbs	1	3.0	3,000	8.22	0.34	9,000	24.66	1.03
Fork Lift, 5,000 lbs	1	4.0	3,000	8.22	0.34	12,000	32.88	1.37

Table B.1 Support Vehicle Use on Unpaved Roads - Total VMT and Weighted Average - Year 1								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 1**			**Weight * VMT Traveled (total) - Year 1**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Fork Lift, 3,000 lbs	2	3.0	6,000	16.44	0.68	18,000	49.32	2.05
Flat Bed Trucks, 10 tons	2	13.0	6,000	16.44	0.68	77,700	212.88	8.87
Dump Truck, 10 tons	1	25.7	3,000	8.22	0.34	77,220	211.56	8.82
Mobile Hydraulic Crane, 60 tons	1	47.9	2,000	5.48	0.23	95,800	262.47	10.94
CS683 Soil Compactor / Roller	2	20.4	60,000	164.38	6.85	1,223,550	3,352.19	139.67
246C Skid Steer Loader	2	3.7	131,400	360.00	15.00	491,436	1,346.40	56.10
Off-Road Tire Handling Truck	1	54.6	7,500	20.55	0.86	409,500	1,121.92	46.75
Contractor Haul Trucks, 25 tons	2	78.5	48,000	131.51	5.48	3,768,000	10,323.29	430.14
Pickup Trucks	20	7.5	24,000	65.75	2.74	180,000	493.15	20.55
Crew Van	3	4.4	2,400	6.58	0.27	10,560	28.93	1.21
Lot Pick-Up Trucks	20	3.0	6,000	16.44	0.68	18,000	49.32	2.05
Total:	--	--	**544,805**	**1,492.62**	**62.89**	23,296,187	63,825	2,770
Weighted Average:						**42.76**	**42.76**	**44.04**

Table B.2 Support Vehicle Use on Unpaved Roads - Total VMT and Weighted Average - Year 5								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 5**			**Weight * VMT Traveled (total) - Year 5**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Diesel Blasthole Drill, 12.25 inches	2	190.0	127	0.37	0.37	24,181	69.49	69.49
Electric Blasthole Drill, 12.25 inches	1	200.0	64	0.18	0.18	12,727	36.57	36.57
Hydraulic DML 45 Drill	1	50.0	64	0.18	0.18	3,182	9.14	9.14
Front End Loaders	2	253.0	41,391	113.40	4.73	10,471,923	28,690.20	1,195.43
Stemming Truck	2	20.0	5,000	13.70	0.57	100,000	273.97	11.42
ANFO/Slurry Truck, 20 tons	2	20.0	5,000	13.70	0.57	100,000	273.97	11.42
Powder Truck, 2 tons	2	10.0	5,000	13.70	0.57	50,000	136.99	5.71
Front End Loaders, 8 yd^3	2	26.1	8,000	21.92	0.91	209,016	572.65	23.86
Hydraulic Excavator, 385 Cat CL	2	93.7	22,075	60.48	2.52	2,068,005	5,665.77	236.07
Backhoe/Loader, 2 yd^3	1	12.1	1,500	4.11	0.17	18,106	49.60	2.07
All-Terrain Crane, 75 tons	1	36.0	2,000	5.48	0.23	72,000	197.26	8.22
Transporter with Tractor, 200 tons	1	98.4	2,000	5.48	0.23	196,800	539.18	22.47
Fuel/Lube Trucks, 6,000 gallons	2	73.1	30,000	82.19	3.42	2,193,990	6,010.93	250.46
Mechanic Field Service Trucks	5	9.8	75,000	205.48	8.56	731,250	2,003.42	83.48

Table B.2 Support Vehicle Use on Unpaved Roads - Total VMT and Weighted Average - Year 5								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 5**			**Weight * VMT Traveled (total) - Year 5**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Tire Handler	1	8.0	1,000	2.74	0.11	8,000	21.92	0.91
Shop Forklift, 12,000 lbs	1	8.0	1,000	2.74	0.11	8,000	21.92	0.91
Integrated Tool Carrier, 140 hp	1	16.0	3,000	8.22	0.34	48,000	131.51	5.48
Primary Crushing Mobile Crane - 400 tons	1	225.0	92	0.25	0.01	20,700	56.71	2.36
Copper Concentrate Area Front End Loader - Cat 930	1	14.4	11,680	32.00	1.33	168,192	460.80	19.20
Molybdenum Packaging Forklift, 7,000 lbs	1	5.8	3,000	8.22	0.34	17,340	47.51	1.98
Copper Cathode Forklift	1	11.0	3,000	8.22	0.34	33,000	90.41	3.77
Boom Trucks 10 tons, 45 foot boom	1	13.0	3,000	8.22	0.34	39,000	106.85	4.45
Boom Trucks 15 tons, 60 foot boom	1	16.5	3,000	8.22	0.34	49,500	135.62	5.65
Front End Loader, 6 yd^3	1	33.6	6,000	16.44	0.68	201,882	553.10	23.05
Front End Loader, 5 yd^3	1	14.4	3,500	9.59	0.40	50,269	137.72	5.74
Bob Cats, 2,400 lbs	2	1.2	7,000	19.18	0.80	8,400	23.01	0.96
Fork Lift, 2,000 lbs	1	3.0	3,000	8.22	0.34	9,000	24.66	1.03
Fork Lift, 5,000 lbs	1	4.0	3,000	8.22	0.34	12,000	32.88	1.37

Table B.2 Support Vehicle Use on Unpaved Roads - Total VMT and Weighted Average - Year 5								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 5**			**Weight * VMT Traveled (total) - Year 5**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Fork Lift, 3,000 lbs	2	3.0	6,000	16.44	0.68	18,000	49.32	2.05
Flat Bed Trucks, 10 tons	2	13.0	6,000	16.44	0.68	77,700	212.88	8.87
Dump Truck, 10 tons	1	25.7	3,000	8.22	0.34	77,220	211.56	8.82
Mobile Hydraulic Crane, 60 tons	1	47.9	2,000	5.48	0.23	95,800	262.47	10.94
CS683 Soil Compactor / Roller	2	20.4	60,000	164.38	6.85	1,223,550	3,352.19	139.67
246C Skid Steer Loader	2	3.7	131,400	360.00	15.00	491,436	1,346.40	56.10
Off-Road Tire Handling Truck	1	54.6	7,500	20.55	0.86	409,500	1,121.92	46.75
Contractor Haul Trucks, 25 tons	2	78.5	48,000	131.51	5.48	3,768,000	10,323.29	430.14
Pickup Trucks	20	7.5	24,000	65.75	2.74	180,000	493.15	20.55
Crew Van	3	4.4	2,400	6.58	0.27	10,560	28.93	1.21
Lot Pick-Up Trucks	20	3.0	6,000	16.44	0.68	18,000	49.32	2.05
Total:	--	--	**544,793**	**1,492.62**	**62.89**	23,294,228	63,825	2,770
Weighted Average:						**42.76**	**42.76**	**44.04**

Table B.3 Support Vehicle Use on Unpaved Roads - Total VMT and Weighted Average - Year 10								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 10**			**Weight * VMT Traveled (total) - Year 10**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Diesel Blasthole Drill, 12.25 inches	2	190.0	127	0.37	0.37	24,042	69.49	69.49
Electric Blasthole Drill, 12.25 inches	1	200.0	63	0.18	0.18	12,654	36.57	36.57
Hydraulic DML 45 Drill	1	50.0	63	0.18	0.18	3,163	9.14	9.14
Front End Loaders	2	253.0	41,391	113.40	4.73	10,471,923	28,690.20	1,195.43
Stemming Truck	2	20.0	5,000	13.70	0.57	100,000	273.97	11.42
ANFO/Slurry Truck, 20 tons	2	20.0	5,000	13.70	0.57	100,000	273.97	11.42
Powder Truck, 2 tons	2	10.0	5,000	13.70	0.57	50,000	136.99	5.71
Front End Loaders, 8 yd^3	2	26.1	8,000	21.92	0.91	209,016	572.65	23.86
Hydraulic Excavator, 385 Cat CL	2	93.7	22,075	60.48	2.52	2,068,005	5,665.77	236.07
Backhoe/Loader, 2 yd^3	1	12.1	1,500	4.11	0.17	18,106	49.60	2.07
All-Terrain Crane, 75 tons	1	36.0	2,000	5.48	0.23	72,000	197.26	8.22
Transporter with Tractor, 200 tons	1	98.4	2,000	5.48	0.23	196,800	539.18	22.47
Fuel/Lube Trucks, 6,000 gallons	2	73.1	30,000	82.19	3.42	2,193,990	6,010.93	250.46
Mechanic Field Service Trucks	5	9.8	75,000	205.48	8.56	731,250	2,003.42	83.48

Table B.3 Support Vehicle Use on Unpaved Roads - Total VMT and Weighted Average - Year 10								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 10**			**Weight * VMT Traveled (total) - Year 10**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Tire Handler	1	8.0	1,000	2.74	0.11	8,000	21.92	0.91
Shop Forklift, 12,000 lbs	1	8.0	1,000	2.74	0.11	8,000	21.92	0.91
Integrated Tool Carrier, 140 hp	1	16.0	3,000	8.22	0.34	48,000	131.51	5.48
Primary Crushing Mobile Crane - 400 tons	1	225.0	92	0.25	0.01	20,700	56.71	2.36
Copper Concentrate Area Front End Loader - Cat 930	1	14.4	11,680	32.00	1.33	168,192	460.80	19.20
Molybdenum Packaging Forklift, 7,000 lbs	1	5.8	3,000	8.22	0.34	17,340	47.51	1.98
Copper Cathode Forklift	1	11.0	3,000	8.22	0.34	33,000	90.41	3.77
Boom Trucks 10 tons, 45 foot boom	1	13.0	3,000	8.22	0.34	39,000	106.85	4.45
Boom Trucks 15 tons, 60 foot boom	1	16.5	3,000	8.22	0.34	49,500	135.62	5.65
Front End Loader, 6 yd^3	1	33.6	6,000	16.44	0.68	201,882	553.10	23.05
Front End Loader, 5 yd^3	1	14.4	3,500	9.59	0.40	50,269	137.72	5.74
Bob Cats, 2,400 lbs	2	1.2	7,000	19.18	0.80	8,400	23.01	0.96
Fork Lift, 2,000 lbs	1	3.0	3,000	8.22	0.34	9,000	24.66	1.03
Fork Lift, 5,000 lbs	1	4.0	3,000	8.22	0.34	12,000	32.88	1.37

Table B.3 Support Vehicle Use on Unpaved Roads - Total VMT and Weighted Average - Year 10								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 10**			**Weight * VMT Traveled (total) - Year 10**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Fork Lift, 3,000 lbs	2	3.0	6,000	16.44	0.68	18,000	49.32	2.05
Flat Bed Trucks, 10 tons	2	13.0	6,000	16.44	0.68	77,700	212.88	8.87
Dump Truck, 10 tons	1	25.7	3,000	8.22	0.34	77,220	211.56	8.82
Mobile Hydraulic Crane, 60 tons	1	47.9	2,000	5.48	0.23	95,800	262.47	10.94
CS683 Soil Compactor / Roller	2	20.4	60,000	164.38	6.85	1,223,550	3,352.19	139.67
246C Skid Steer Loader	2	3.7	131,400	360.00	15.00	491,436	1,346.40	56.10
Off-Road Tire Handling Truck	1	54.6	7,500	20.55	0.86	409,500	1,121.92	46.75
Contractor Haul Trucks, 25 tons	2	78.5	48,000	131.51	5.48	3,768,000	10,323.29	430.14
Pickup Trucks	20	7.5	24,000	65.75	2.74	180,000	493.15	20.55
Crew Van	3	4.4	2,400	6.58	0.27	10,560	28.93	1.21
Lot Pick-Up Trucks	20	3.0	6,000	16.44	0.68	18,000	49.32	2.05
Total:	--	--	**544,791**	**1,492.62**	**62.89**	23,293,998	63,825	2,770
Weighted Average:						**42.76**	**42.76**	**44.04**

Table B.4 Support Vehicle Use on Unpaved Roads - Total VMT and Weighted Average - Year 15								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 15**			**Weight * VMT Traveled (total) - Year 15**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Diesel Blasthole Drill, 12.25 inches	2	190.0	92	0.37	0.37	17,511	69.49	69.49
Electric Blasthole Drill, 12.25 inches	1	200.0	46	0.18	0.18	9,216	36.57	36.57
Hydraulic DML 45 Drill	1	50.0	46	0.18	0.18	2,304	9.14	9.14
Front End Loaders	2	253.0	41,391	113.40	4.73	10,471,923	28,690.20	1,195.43
Stemming Truck	2	20.0	5,000	13.70	0.57	100,000	273.97	11.42
ANFO/Slurry Truck, 20 tons	2	20.0	5,000	13.70	0.57	100,000	273.97	11.42
Powder Truck, 2 tons	2	10.0	5,000	13.70	0.57	50,000	136.99	5.71
Front End Loaders, 8 yd^3	2	26.1	8,000	21.92	0.91	209,016	572.65	23.86
Hydraulic Excavator, 385 Cat CL	2	93.7	22,075	60.48	2.52	2,068,005	5,665.77	236.07
Backhoe/Loader, 2 yd^3	1	12.1	1,500	4.11	0.17	18,106	49.60	2.07
All-Terrain Crane, 75 tons	1	36.0	2,000	5.48	0.23	72,000	197.26	8.22
Transporter with Tractor, 200 tons	1	98.4	2,000	5.48	0.23	196,800	539.18	22.47
Fuel/Lube Trucks, 6,000 gallons	2	73.1	30,000	82.19	3.42	2,193,990	6,010.93	250.46
Mechanic Field Service Trucks	5	9.8	75,000	205.48	8.56	731,250	2,003.42	83.48

Table B.4 Support Vehicle Use on Unpaved Roads - Total VMT and Weighted Average - Year 15								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 15**			**Weight * VMT Traveled (total) - Year 15**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Tire Handler	1	8.0	1,000	2.74	0.11	8,000	21.92	0.91
Shop Forklift, 12,000 lbs	1	8.0	1,000	2.74	0.11	8,000	21.92	0.91
Integrated Tool Carrier, 140 hp	1	16.0	3,000	8.22	0.34	48,000	131.51	5.48
Primary Crushing Mobile Crane - 400 tons	1	225.0	92	0.25	0.01	20,700	56.71	2.36
Copper Concentrate Area Front End Loader - Cat 930	1	14.4	11,680	32.00	1.33	168,192	460.80	19.20
Molybdenum Packaging Forklift, 7,000 lbs	1	5.8	3,000	8.22	0.34	17,340	47.51	1.98
Copper Cathode Forklift	1	11.0	3,000	8.22	0.34	33,000	90.41	3.77
Boom Trucks 10 tons, 45 foot boom	1	13.0	3,000	8.22	0.34	39,000	106.85	4.45
Boom Trucks 15 tons, 60 foot boom	1	16.5	3,000	8.22	0.34	49,500	135.62	5.65
Front End Loader, 6 yd^3	1	33.6	6,000	16.44	0.68	201,882	553.10	23.05
Front End Loader, 5 yd^3	1	14.4	3,500	9.59	0.40	50,269	137.72	5.74
Bob Cats, 2,400 lbs	2	1.2	7,000	19.18	0.80	8,400	23.01	0.96
Fork Lift, 2,000 lbs	1	3.0	3,000	8.22	0.34	9,000	24.66	1.03
Fork Lift, 5,000 lbs	1	4.0	3,000	8.22	0.34	12,000	32.88	1.37

Table B.4 Support Vehicle Use on Unpaved Roads - Total VMT and Weighted Average - Year 15								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 15**			**Weight * VMT Traveled (total) - Year 15**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Fork Lift, 3,000 lbs	2	3.0	6,000	16.44	0.68	18,000	49.32	2.05
Flat Bed Trucks, 10 tons	2	13.0	6,000	16.44	0.68	77,700	212.88	8.87
Dump Truck, 10 tons	1	25.7	3,000	8.22	0.34	77,220	211.56	8.82
Mobile Hydraulic Crane, 60 tons	1	47.9	2,000	5.48	0.23	95,800	262.47	10.94
CS683 Soil Compactor / Roller	2	20.4	60,000	164.38	6.85	1,223,550	3,352.19	139.67
246C Skid Steer Loader	2	3.7	131,400	360.00	15.00	491,436	1,346.40	56.10
Off-Road Tire Handling Truck	1	54.6	7,500	20.55	0.86	409,500	1,121.92	46.75
Contractor Haul Trucks, 25 tons	2	78.5	48,000	131.51	5.48	3,768,000	10,323.29	430.14
Pickup Trucks	20	7.5	24,000	65.75	2.74	180,000	493.15	20.55
Crew Van	3	4.4	2,400	6.58	0.27	10,560	28.93	1.21
Lot Pick-Up Trucks	20	3.0	6,000	16.44	0.68	18,000	49.32	2.05
Total:	--	--	**544,723**	**1,492.62**	**62.89**	23,283,169	63,825	2,770
Weighted Average:						**42.74**	**42.76**	**44.04**

Table B.5 Support Vehicle Use on Unpaved Roads - Total VMT and Weighted Average - Year 20								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 20**			**Weight * VMT Traveled (total) - Year 20**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Diesel Blasthole Drill, 12.25 inches	2	190.0	37	0.37	0.37	7,018	69.49	69.49
Electric Blasthole Drill, 12.25 inches	1	200.0	18	0.18	0.18	3,694	36.57	36.57
Hydraulic DML 45 Drill	1	50.0	18	0.18	0.18	923	9.14	9.14
Front End Loaders	2	253.0	41,391	113.40	4.73	10,471,923	28,690.20	1,195.43
Stemming Truck	2	20.0	5,000	13.70	0.57	100,000	273.97	11.42
ANFO/Slurry Truck, 20 tons	2	20.0	5,000	13.70	0.57	100,000	273.97	11.42
Powder Truck, 2 tons	2	10.0	5,000	13.70	0.57	50,000	136.99	5.71
Front End Loaders, 8 yd^3	2	26.1	8,000	21.92	0.91	209,016	572.65	23.86
Hydraulic Excavator, 385 Cat CL	2	93.7	22,075	60.48	2.52	2,068,005	5,665.77	236.07
Backhoe/Loader, 2 yd^3	1	12.1	1,500	4.11	0.17	18,106	49.60	2.07
All-Terrain Crane, 75 tons	1	36.0	2,000	5.48	0.23	72,000	197.26	8.22
Transporter with Tractor, 200 tons	1	98.4	2,000	5.48	0.23	196,800	539.18	22.47
Fuel/Lube Trucks, 6,000 gallons	2	73.1	30,000	82.19	3.42	2,193,990	6,010.93	250.46
Mechanic Field Service Trucks	5	9.8	75,000	205.48	8.56	731,250	2,003.42	83.48

Table B.5 Support Vehicle Use on Unpaved Roads - Total VMT and Weighted Average - Year 20								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 20**			**Weight * VMT Traveled (total) - Year 20**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Tire Handler	1	8.0	1,000	2.74	0.11	8,000	21.92	0.91
Shop Forklift, 12,000 lbs	1	8.0	1,000	2.74	0.11	8,000	21.92	0.91
Integrated Tool Carrier, 140 hp	1	16.0	3,000	8.22	0.34	48,000	131.51	5.48
Primary Crushing Mobile Crane - 400 tons	1	225.0	92	0.25	0.01	20,700	56.71	2.36
Copper Concentrate Area Front End Loader - Cat 930	1	14.4	11,680	32.00	1.33	168,192	460.80	19.20
Molybdenum Packaging Forklift, 7,000 lbs	1	5.8	3,000	8.22	0.34	17,340	47.51	1.98
Copper Cathode Forklift	1	11.0	3,000	8.22	0.34	33,000	90.41	3.77
Boom Trucks 10 tons, 45 foot boom	1	13.0	3,000	8.22	0.34	39,000	106.85	4.45
Boom Trucks 15 tons, 60 foot boom	1	16.5	3,000	8.22	0.34	49,500	135.62	5.65
Front End Loader, 6 yd^3	1	33.6	6,000	16.44	0.68	201,882	553.10	23.05
Front End Loader, 5 yd^3	1	14.4	3,500	9.59	0.40	50,269	137.72	5.74
Bob Cats, 2,400 lbs	2	1.2	7,000	19.18	0.80	8,400	23.01	0.96
Fork Lift, 2,000 lbs	1	3.0	3,000	8.22	0.34	9,000	24.66	1.03
Fork Lift, 5,000 lbs	1	4.0	3,000	8.22	0.34	12,000	32.88	1.37

Table B.5 Support Vehicle Use on Unpaved Roads - Total VMT and Weighted Average - Year 20								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 20**			**Weight * VMT Traveled (total) - Year 20**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Fork Lift, 3,000 lbs	2	3.0	6,000	16.44	0.68	18,000	49.32	2.05
Flat Bed Trucks, 10 tons	2	13.0	6,000	16.44	0.68	77,700	212.88	8.87
Dump Truck, 10 tons	1	25.7	3,000	8.22	0.34	77,220	211.56	8.82
Mobile Hydraulic Crane, 60 tons	1	47.9	2,000	5.48	0.23	95,800	262.47	10.94
CS683 Soil Compactor / Roller	2	20.4	60,000	164.38	6.85	1,223,550	3,352.19	139.67
246C Skid Steer Loader	2	3.7	131,400	360.00	15.00	491,436	1,346.40	56.10
Off-Road Tire Handling Truck	1	54.6	7,500	20.55	0.86	409,500	1,121.92	46.75
Contractor Haul Trucks, 25 tons	2	78.5	48,000	131.51	5.48	3,768,000	10,323.29	430.14
Pickup Trucks	20	7.5	24,000	65.75	2.74	180,000	493.15	20.55
Crew Van	3	4.4	2,400	6.58	0.27	10,560	28.93	1.21
Lot Pick-Up Trucks	20	3.0	6,000	16.44	0.68	18,000	49.32	2.05
Total:	--	--	**544,612**	**1,492.62**	**62.89**	23,265,774	63,825	2,770
Weighted Average:						**42.72**	**42.76**	**44.04**

SUPPORT VEHICLE USE ON THE PAVED ENTRANCE ROAD
ADDED TABLES B.6 THROUGH B.10

Table B.6 Support Vehicle Use on the Paved Entrance Road - Total VMT and Weighted Average - Year 1								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 1**			**Weight * VMT Traveled (total) - Year 1**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Copper Concentrate Shipment Vehicles	--	24.0	142,325	855.60	24.80	3,415,805	20,534.40	595.20
Molybdenum Concentrate Shipment Vehicles	--	19.0	1,797	12.85	6.20	34,144	244.17	117.80
Sulfuric Acid Delivery Vehicles	--	22.0	43,585	119.41	18.60	958,867	2,627.03	409.20
Lime Delivery Vehicles	--	22.0	15,979	43.78	12.40	351,540	963.12	272.80
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	24.0	4,908	18.88	12.40	117,800	453.08	297.60
Diesel Fuel Delivery Vehicles	--	25.0	14,357	39.33	12.40	358,928	983.36	310.00
Copper Cathode Shipment Vehicles	--	22.0	4,187	35.33	12.40	92,105	777.30	272.80
Ammonium Nitrate Delivery Vehicles	--	22.0	5,349	20.57	6.20	117,676	452.60	136.40
Miscellaneous Consumables Delivery Vehicles	--	10.0	10,461	40.24	6.20	104,613	402.36	62.00
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	15.0	930	6.20	6.20	13,950	93.00	93.00
Pickup Trucks	20	7.5	108,000	295.89	12.33	810,000	2,219.18	92.47
Crew Van	3	4.4	18,097	49.58	2.07	79,628	218.16	9.09
Lot Pick-Up Trucks	20	3.0	27,000	73.97	3.08	81,000	221.92	9.25

Table B.6 Support Vehicle Use on the Paved Entrance Road - Total VMT and Weighted Average - Year 1								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 1**			**Weight * VMT Traveled (total) - Year 1**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Total:	--	--	**396,976**	**1,611.64**	**135.28**	6,536,055	30,190	2,678
Weighted Average:						**16.46**	**18.73**	**19.79**

Table B.7 Support Vehicle Use on the Paved Entrance Road - Total VMT and Weighted Average - Year 5								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 5**			**Weight * VMT Traveled (total) - Year 5**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Copper Concentrate Shipment Vehicles	--	24.0	142,325	855.60	24.80	3,415,805	20,534.40	595.20
Molybdenum Concentrate Shipment Vehicles	--	19.0	1,797	12.85	6.20	34,144	244.17	117.80
Sulfuric Acid Delivery Vehicles	--	22.0	43,585	119.41	18.60	958,867	2,627.03	409.20
Lime Delivery Vehicles	--	22.0	15,979	43.78	12.40	351,540	963.12	272.80
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	24.0	4,908	18.88	12.40	117,800	453.08	297.60
Diesel Fuel Delivery Vehicles	--	25.0	14,357	39.33	12.40	358,928	983.36	310.00
Copper Cathode Shipment Vehicles	--	22.0	4,187	35.33	12.40	92,105	777.30	272.80
Ammonium Nitrate Delivery Vehicles	--	22.0	5,349	20.57	6.20	117,676	452.60	136.40
Miscellaneous Consumables Delivery Vehicles	--	10.0	10,461	40.24	6.20	104,613	402.36	62.00
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	15.0	930	6.20	6.20	13,950	93.00	93.00
Pickup Trucks	20	7.5	108,000	295.89	12.33	810,000	2,219.18	92.47
Crew Van	3	4.4	18,097	49.58	2.07	79,628	218.16	9.09
Lot Pick-Up Trucks	20	3.0	27,000	73.97	3.08	81,000	221.92	9.25

Table B.7 Support Vehicle Use on the Paved Entrance Road - Total VMT and Weighted Average - Year 5								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 5**			**Weight * VMT Traveled (total) - Year 5**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Total:	--	--	**396,976**	**1,611.64**	**135.28**	6,536,055	30,190	2,678
Weighted Average:						**16.46**	**18.73**	**19.79**

Table B.8 Support Vehicle Use on the Paved Entrance Road - Total VMT and Weighted Average - Year 10								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 10**			**Weight * VMT Traveled (total) - Year 10**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Copper Concentrate Shipment Vehicles	--	24.0	142,325	855.60	24.80	3,415,805	20,534.40	595.20
Molybdenum Concentrate Shipment Vehicles	--	19.0	1,797	12.85	6.20	34,144	244.17	117.80
Sulfuric Acid Delivery Vehicles	--	22.0	43,585	119.41	18.60	958,867	2,627.03	409.20
Lime Delivery Vehicles	--	22.0	15,979	43.78	12.40	351,540	963.12	272.80
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	24.0	4,908	18.88	12.40	117,800	453.08	297.60
Diesel Fuel Delivery Vehicles	--	25.0	14,357	39.33	12.40	358,928	983.36	310.00
Copper Cathode Shipment Vehicles	--	22.0	4,187	35.33	12.40	92,105	777.30	272.80
Ammonium Nitrate Delivery Vehicles	--	22.0	5,349	20.57	6.20	117,676	452.60	136.40
Miscellaneous Consumables Delivery Vehicles	--	10.0	10,461	40.24	6.20	104,613	402.36	62.00
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	15.0	930	6.20	6.20	13,950	93.00	93.00
Pickup Trucks	20	7.5	108,000	295.89	12.33	810,000	2,219.18	92.47
Crew Van	3	4.4	18,097	49.58	2.07	79,628	218.16	9.09
Lot Pick-Up Trucks	20	3.0	27,000	73.97	3.08	81,000	221.92	9.25

Table B.8 Support Vehicle Use on the Paved Entrance Road - Total VMT and Weighted Average - Year 10								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 10**			**Weight * VMT Traveled (total) - Year 10**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Total:	--	--	**396,976**	**1,611.64**	**135.28**	6,536,055	30,190	2,678
Weighted Average:						**16.46**	**18.73**	**19.79**

Table B.9 Support Vehicle Use on the Paved Entrance Road - Total VMT and Weighted Average - Year 15								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 15**			**Weight * VMT Traveled (total) - Year 15**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Copper Concentrate Shipment Vehicles	--	24.0	142,325	855.60	24.80	3,415,805	20,534.40	595.20
Molybdenum Concentrate Shipment Vehicles	--	19.0	1,797	12.85	6.20	34,144	244.17	117.80
Sulfuric Acid Delivery Vehicles	--	22.0	43,585	119.41	18.60	958,867	2,627.03	409.20
Lime Delivery Vehicles	--	22.0	15,979	43.78	12.40	351,540	963.12	272.80
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	24.0	4,908	18.88	12.40	117,800	453.08	297.60
Diesel Fuel Delivery Vehicles	--	25.0	14,357	39.33	12.40	358,928	983.36	310.00
Copper Cathode Shipment Vehicles	--	22.0	4,187	35.33	12.40	92,105	777.30	272.80
Ammonium Nitrate Delivery Vehicles	--	22.0	5,349	20.57	6.20	117,676	452.60	136.40
Miscellaneous Consumables Delivery Vehicles	--	10.0	10,461	40.24	6.20	104,613	402.36	62.00
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	15.0	930	6.20	6.20	13,950	93.00	93.00
Pickup Trucks	20	7.5	108,000	295.89	12.33	810,000	2,219.18	92.47
Crew Van	3	4.4	18,097	49.58	2.07	79,628	218.16	9.09
Lot Pick-Up Trucks	20	3.0	27,000	73.97	3.08	81,000	221.92	9.25

Table B.9 Support Vehicle Use on the Paved Entrance Road - Total VMT and Weighted Average - Year 15								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 15**			**Weight * VMT Traveled (total) - Year 15**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Total:	--	--	**396,976**	**1,611.64**	**135.28**	6,536,055	30,190	2,678
Weighted Average:						**16.46**	**18.73**	**19.79**

Table B.10 Support Vehicle Use on the Paved Entrance Road - Total VMT and Weighted Average - Year 20								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 20**			**Weight * VMT Traveled (total) - Year 20**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Copper Concentrate Shipment Vehicles	--	24.0	142,325	855.60	24.80	3,415,805	20,534.40	595.20
Molybdenum Concentrate Shipment Vehicles	--	19.0	1,797	12.85	6.20	34,144	244.17	117.80
Sulfuric Acid Delivery Vehicles	--	22.0	43,585	119.41	18.60	958,867	2,627.03	409.20
Lime Delivery Vehicles	--	22.0	15,979	43.78	12.40	351,540	963.12	272.80
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	24.0	4,908	18.88	12.40	117,800	453.08	297.60
Diesel Fuel Delivery Vehicles	--	25.0	14,357	39.33	12.40	358,928	983.36	310.00
Copper Cathode Shipment Vehicles	--	22.0	4,187	35.33	12.40	92,105	777.30	272.80
Ammonium Nitrate Delivery Vehicles	--	22.0	5,349	20.57	6.20	117,676	452.60	136.40
Miscellaneous Consumables Delivery Vehicles	--	10.0	10,461	40.24	6.20	104,613	402.36	62.00
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	15.0	930	6.20	6.20	13,950	93.00	93.00
Pickup Trucks	20	7.5	108,000	295.89	12.33	810,000	2,219.18	92.47
Crew Van	3	4.4	18,097	49.58	2.07	79,628	218.16	9.09
Lot Pick-Up Trucks	20	3.0	27,000	73.97	3.08	81,000	221.92	9.25

Table B.10 Support Vehicle Use on the Paved Entrance Road - Total VMT and Weighted Average - Year 20								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 20**			**Weight * VMT Traveled (total) - Year 20**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Total:	--	--	**396,976**	**1,611.64**	**135.28**	6,536,055	30,190	2,678
Weighted Average:						**16.46**	**18.73**	**19.79**

SUPPORT VEHICLE USE ON PAVED INDUSTRIAL ROADS
ADDED TABLES B.11 THROUGH B.15

Table B.11 Support Vehicle Use on Paved Industrial Roads - Total VMT and Weighted Average - Year 1								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 1**			**Weight * VMT Traveled (total) - Year 1**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Copper Concentrate Shipment Vehicles	--	24.0	27,547	165.60	4.80	661,124	3,974.40	115.20
Molybdenum Concentrate Shipment Vehicles	--	19.0	348	2.49	1.20	6,608	47.26	22.80
Sulfuric Acid Delivery Vehicles	--	22.0	8,436	23.11	3.60	185,587	508.46	79.20
Lime Delivery Vehicles	--	22.0	3,093	8.47	2.40	68,040	186.41	52.80
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	24.0	950	3.65	2.40	22,800	87.69	57.60
Diesel Fuel Delivery Vehicles	--	25.0	2,779	7.61	2.40	69,470	190.33	60.00
Copper Cathode Shipment Vehicles	--	22.0	810	6.84	2.40	17,827	150.45	52.80
Ammonium Nitrate Delivery Vehicles	--	22.0	1,035	3.98	1.20	22,776	87.60	26.40
Miscellaneous Consumables Delivery Vehicles	--	10.0	2,025	7.79	1.20	20,248	77.88	12.00
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	15.0	180	1.20	1.20	2,700	18.00	18.00
Pickup Trucks	20	7.5	108,000	295.89	12.33	810,000	2,219.18	92.47
Crew Van	3	4.4	3,503	9.60	0.40	15,412	42.22	1.76
Lot Pick-Up Trucks	20	3.0	27,000	73.97	3.08	81,000	221.92	9.25

Table B.11 Support Vehicle Use on Paved Industrial Roads - Total VMT and Weighted Average - Year 1								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 1**			**Weight * VMT Traveled (total) - Year 1**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Total:	--	--	**185,705**	**610.21**	**38.61**	1,983,591	7,812	600
Weighted Average:						**10.68**	**12.80**	**15.55**

Table B.12 Support Vehicle Use on Paved Industrial Roads - Total VMT and Weighted Average - Year 5								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 5**			**Weight * VMT Traveled (total) - Year 5**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Copper Concentrate Shipment Vehicles	--	24.0	27,547	165.60	4.80	661,124	3,974.40	115.20
Molybdenum Concentrate Shipment Vehicles	--	19.0	348	2.49	1.20	6,608	47.26	22.80
Sulfuric Acid Delivery Vehicles	--	22.0	8,436	23.11	3.60	185,587	508.46	79.20
Lime Delivery Vehicles	--	22.0	3,093	8.47	2.40	68,040	186.41	52.80
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	24.0	950	3.65	2.40	22,800	87.69	57.60
Diesel Fuel Delivery Vehicles	--	25.0	2,779	7.61	2.40	69,470	190.33	60.00
Copper Cathode Shipment Vehicles	--	22.0	810	6.84	2.40	17,827	150.45	52.80
Ammonium Nitrate Delivery Vehicles	--	22.0	1,035	3.98	1.20	22,776	87.60	26.40
Miscellaneous Consumables Delivery Vehicles	--	10.0	2,025	7.79	1.20	20,248	77.88	12.00
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	15.0	180	1.20	1.20	2,700	18.00	18.00
Pickup Trucks	20	7.5	108,000	295.89	12.33	810,000	2,219.18	92.47
Crew Van	3	4.4	3,503	9.60	0.40	15,412	42.22	1.76
Lot Pick-Up Trucks	20	3.0	27,000	73.97	3.08	81,000	221.92	9.25

Table B.12 Support Vehicle Use on Paved Industrial Roads - Total VMT and Weighted Average - Year 5								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 5**			**Weight * VMT Traveled (total) - Year 5**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Total:	--	--	**185,705**	**610.21**	**38.61**	1,983,591	7,812	600
Weighted Average:						**10.68**	**12.80**	**15.55**

Table B.13 Support Vehicle Use on Paved Industrial Roads - Total VMT and Weighted Average - Year 10								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 10**			**Weight * VMT Traveled (total) - Year 10**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Copper Concentrate Shipment Vehicles	--	24.0	27,547	165.60	4.80	661,124	3,974.40	115.20
Molybdenum Concentrate Shipment Vehicles	--	19.0	348	2.49	1.20	6,608	47.26	22.80
Sulfuric Acid Delivery Vehicles	--	22.0	8,436	23.11	3.60	185,587	508.46	79.20
Lime Delivery Vehicles	--	22.0	3,093	8.47	2.40	68,040	186.41	52.80
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	24.0	950	3.65	2.40	22,800	87.69	57.60
Diesel Fuel Delivery Vehicles	--	25.0	2,779	7.61	2.40	69,470	190.33	60.00
Copper Cathode Shipment Vehicles	--	22.0	810	6.84	2.40	17,827	150.45	52.80
Ammonium Nitrate Delivery Vehicles	--	22.0	1,035	3.98	1.20	22,776	87.60	26.40
Miscellaneous Consumables Delivery Vehicles	--	10.0	2,025	7.79	1.20	20,248	77.88	12.00
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	15.0	180	1.20	1.20	2,700	18.00	18.00
Pickup Trucks	20	7.5	108,000	295.89	12.33	810,000	2,219.18	92.47
Crew Van	3	4.4	3,503	9.60	0.40	15,412	42.22	1.76
Lot Pick-Up Trucks	20	3.0	27,000	73.97	3.08	81,000	221.92	9.25

Table B.13 Support Vehicle Use on Paved Industrial Roads - Total VMT and Weighted Average - Year 10								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 10**			**Weight * VMT Traveled (total) - Year 10**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Total:	--	--	**185,705**	**610.21**	**38.61**	1,983,591	7,812	600
Weighted Average:						**10.68**	**12.80**	**15.55**

Table B.14 Support Vehicle Use on Paved Industrial Roads - Total VMT and Weighted Average - Year 15								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 15**			**Weight * VMT Traveled (total) - Year 15**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Copper Concentrate Shipment Vehicles	--	24.0	27,547	165.60	4.80	661,124	3,974.40	115.20
Molybdenum Concentrate Shipment Vehicles	--	19.0	348	2.49	1.20	6,608	47.26	22.80
Sulfuric Acid Delivery Vehicles	--	22.0	8,436	23.11	3.60	185,587	508.46	79.20
Lime Delivery Vehicles	--	22.0	3,093	8.47	2.40	68,040	186.41	52.80
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	24.0	950	3.65	2.40	22,800	87.69	57.60
Diesel Fuel Delivery Vehicles	--	25.0	2,779	7.61	2.40	69,470	190.33	60.00
Copper Cathode Shipment Vehicles	--	22.0	810	6.84	2.40	17,827	150.45	52.80
Ammonium Nitrate Delivery Vehicles	--	22.0	1,035	3.98	1.20	22,776	87.60	26.40
Miscellaneous Consumables Delivery Vehicles	--	10.0	2,025	7.79	1.20	20,248	77.88	12.00
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	15.0	180	1.20	1.20	2,700	18.00	18.00
Pickup Trucks	20	7.5	108,000	295.89	12.33	810,000	2,219.18	92.47
Crew Van	3	4.4	3,503	9.60	0.40	15,412	42.22	1.76
Lot Pick-Up Trucks	20	3.0	27,000	73.97	3.08	81,000	221.92	9.25

Table B.14 Support Vehicle Use on Paved Industrial Roads - Total VMT and Weighted Average - Year 15								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 15**			**Weight * VMT Traveled (total) - Year 15**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Total:	--	--	**185,705**	**610.21**	**38.61**	1,983,591	7,812	600
Weighted Average:						**10.68**	**12.80**	**15.55**

Table B.15 Support Vehicle Use on Paved Industrial Roads - Total VMT and Weighted Average - Year 20								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 20**			**Weight * VMT Traveled (total) - Year 20**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Copper Concentrate Shipment Vehicles	--	24.0	27,547	165.60	4.80	661,124	3,974.40	115.20
Molybdenum Concentrate Shipment Vehicles	--	19.0	348	2.49	1.20	6,608	47.26	22.80
Sulfuric Acid Delivery Vehicles	--	22.0	8,436	23.11	3.60	185,587	508.46	79.20
Lime Delivery Vehicles	--	22.0	3,093	8.47	2.40	68,040	186.41	52.80
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	24.0	950	3.65	2.40	22,800	87.69	57.60
Diesel Fuel Delivery Vehicles	--	25.0	2,779	7.61	2.40	69,470	190.33	60.00
Copper Cathode Shipment Vehicles	--	22.0	810	6.84	2.40	17,827	150.45	52.80
Ammonium Nitrate Delivery Vehicles	--	22.0	1,035	3.98	1.20	22,776	87.60	26.40
Miscellaneous Consumables Delivery Vehicles	--	10.0	2,025	7.79	1.20	20,248	77.88	12.00
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	15.0	180	1.20	1.20	2,700	18.00	18.00
Pickup Trucks	20	7.5	108,000	295.89	12.33	810,000	2,219.18	92.47
Crew Van	3	4.4	3,503	9.60	0.40	15,412	42.22	1.76
Lot Pick-Up Trucks	20	3.0	27,000	73.97	3.08	81,000	221.92	9.25

Table B.15 Support Vehicle Use on Paved Industrial Roads - Total VMT and Weighted Average - Year 20								
Support Vehicle Description	**Fleet Size**	**Vehicle Weight (tons)**	**VMT Traveled (total) - Year 20**			**Weight * VMT Traveled (total) - Year 20**		
			Annual	**Daily**	**Hourly**	**Annual**	**Daily**	**Hourly**
Total:	--	--	**185,705**	**610.21**	**38.61**	1,983,591	7,812	600
Weighted Average:						**10.68**	**12.80**	**15.55**

APPENDIX F

AMENDED EMISSION INVENTORY TABLES
TABLES H.1 – H.95

YEAR 1

Table H.1 Particulate Matter Emission Factors - Year 1

Process Code	Process Description	SCC Code	Emission Factors				Prod. Rate Units	Particulate Matter Emission Factor Inputs [a]																							Reference
			PM/TSP	PM_{10}	$PM_{2.5}$	Units		k (PM/TSP)	k (PM_{10})	k ($PM_{2.5}$)	A (ft^2)	U (mph)	M (%)	W (tons)	s (%)	sL (g/m^2)	S (mph)	P (days/yr)	a (PM/TSP)	a (PM_{10})	a ($PM_{2.5}$)	b (PM/TSP)	b (PM_{10})	b ($PM_{2.5}$)	u^*	u_t^*	e	f (%)	PE	
Drilling	Drilling	3-05-020-10	1.30	0.43	0.08	lb/hole	holes	1	0.33	0.06																					AP-42, Section 11.9, Table 11.9-4 (10/98)
Blast	Blasting	3-05-020-09	328.26	170.69	9.85	lb/blast	blasts	1	0.52	0.03	81,920																				AP-42, Section 11.9, Table 11.9-1 (10/98)
Loading	Loading	3-03-024-08	0.0007	0.0003	0.00005	lb/ton	tons	0.74	0.35	0.053		4.14	4																		AP-42, Section 13.2.4, Expression 1 (11/06)
HaulingHD	Haul Trucks - Hourly/Daily	3-05-020-11	21.25	5.46	0.55	lb/VMT	VMT	4.9	1.5	0.15				305	5.0				0.7	0.9	0.9	0.45	0.45	0.45						AP-42, Section 13.2.2, Expression 1a (11/06)
HaulingA	Haul Trucks - Annual	3-05-020-11	17.70	4.55	0.45	lb/VMT	VMT	4.9	1.5	0.15				305	5.0			61	0.7	0.9	0.9	0.45	0.45	0.45						AP-42, Section 13.2.2, Expressions 1a and 2 (11/06)
Bldzrs	Bulldozers	3-05-020-99	2.82	0.43	0.30	lb/hr	hrs	5.7	0.75	0.60			4		2.5				1.2	1.5	1.2	1.3	1.4	1.3						AP-42, Section 11.9, Table 11.9-1 (10/98)
SupVehUY1H	Support Vehicular Traffic on Unpaved Roads - Year 1 Hourly	3-03-999-99	8.89	2.29	0.23	lb/VMT	VMT	4.9	1.5	0.15				44.0	5.0				0.7	0.9	0.9	0.45	0.45	0.45						AP-42, Section 13.2.2, Expression 1a (11/06)
SupVehUY1D	Support Vehicular Traffic on Unpaved Roads - Year 1 Daily	3-03-999-99	8.78	2.26	0.23	lb/VMT	VMT	4.9	1.5	0.15				42.8	5.0				0.7	0.9	0.9	0.45	0.45	0.45						AP-42, Section 13.2.2, Expression 1a (11/06)
SupVehUY1A	Support Vehicular Traffic on Unpaved Roads - Year 1 Annual	3-03-999-99	7.31	1.88	0.19	lb/VMT	VMT	4.9	1.5	0.15				42.8	5.0			61	0.7	0.9	0.9	0.45	0.45	0.45						AP-42, Section 13.2.2, Expressions 1a and 2 (11/06)
SupVehPEY1H	Support Vehicular Traffic on Paved Entrance Road - Year 1 Hourly	3-03-999-99	0.05	0.01	0.003	lb/VMT	VMT	0.011	0.0022	0.00054				19.8		0.2														AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPEY1D	Support Vehicular Traffic on Paved Entrance Road - Year 1 Daily	3-03-999-99	0.05	0.01	0.002	lb/VMT	VMT	0.011	0.0022	0.00054				18.7		0.2														AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPEY1A	Support Vehicular Traffic on Paved Entrance Road - Year 1 Annual	3-03-999-99	0.04	0.008	0.002	lb/VMT	VMT	0.011	0.0022	0.00054				16.5		0.2		61												AP-42, Section 13.2.1, Expression 2 (01/11)
SupVehPIY1H	Support Vehicular Traffic on Paved Industrial Roads - Year 1 Hourly	3-03-999-99	1.23	0.25	0.06	lb/VMT	VMT	0.011	0.0022	0.00054				15.5		8.2														AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPIY1D	Support Vehicular Traffic on Paved Industrial Roads - Year 1 Daily	3-03-999-99	1.01	0.20	0.05	lb/VMT	VMT	0.011	0.0022	0.00054				12.8		8.2														AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPIY1A	Support Vehicular Traffic on Paved Industrial Roads - Year 1 Annual	3-03-999-99	0.80	0.16	0.04	lb/VMT	VMT	0.011	0.0022	0.00054				10.7		8.2		61												AP-42, Section 13.2.1, Expression 2 (01/11)
WtrTrksHD	Water Trucks - Hourly/Daily	3-05-020-99	17.06	4.38	0.44	lb/VMT	VMT	4.9	1.5	0.15				187.4	5.0				0.7	0.9	0.9	0.45	0.45	0.45						AP-42, Section 13.2.2, Expression 1a (11/06)
WtrTrksA	Water Trucks - Annual	3-05-020-99	14.21	3.65	0.37	lb/VMT	VMT	4.9	1.5	0.15				187.4	5.0			61	0.7	0.9	0.9	0.45	0.45	0.45						AP-42, Section 13.2.2, Expressions 1a and 2 (11/06)
GradersY1	Graders - Year 1	3-05-020-99	2.05	0.71	0.06	lb/VMT	VMT	1	0.60	0.031							4.83		0.040	0.051	0.040	2.5	2.0	2.5						AP-42, Section 11.9, Table 11.9-1 (10/98)
TrMlyCncPrt	Molybdnum Concentrate Transfer (Protected)	3-03-024-08	0.00002	0.00001	0.000002	lb/ton	tons	0.74	0.35	0.053		1.3	15																	AP-42, Section 13.2.4, Expression 1 (11/06)
DTrMlyCncPrt	Dried Molybdenum Concentrate Transfer (Protected)	3-03-024-08	0.00004	0.00002	0.000003	lb/ton	tons	0.74	0.35	0.053		1.3	10																	AP-42, Section 13.2.4, Expression 1 (11/06)
DTrMlyCnc	Dried Molybdenum Concentrate Transfer (Unprotected)	3-03-024-08	0.0003	0.0002	0.00002	lb/ton	tons	0.74	0.35	0.053		6.21	10																	AP-42, Section 13.2.4, Expression 1 (11/06)
TrCuCncPrt	Copper Concentrate Transfer (Protected)	3-03-024-08	0.00004	0.00002	0.000003	lb/ton	tons	0.74	0.35	0.053		1.3	10																	AP-42, Section 13.2.4, Expression 1 (11/06)
TrCuCnc	Copper Concentrate Loadout	3-03-024-08	0.0003	0.0002	0.00002	lb/ton	tons	0.74	0.35	0.053		6.21	10																	AP-42, Section 13.2.4, Expression 1 (11/06)
FiltTailPrt	Filtered Tailings Transfer (Protected)	3-03-024-08	0.00002	0.00001	0.000002	lb/ton	tons	0.74	0.35	0.053		1.3	15																	AP-42, Section 13.2.4, Expression 1 (11/06)
FiltTail	Filtered Tailings Transfer (Unprotected)	3-03-024-08	0.0002	0.00009	0.00001	lb/ton	tons	0.74	0.35	0.053		6.21	15																	AP-42, Section 13.2.4, Expression 1 (11/06)
CrushP	Primary Crushing - High Moisture Ore	3-03-024-05	0.02	0.009	0.002	lb/ton	tons			0.185																				AP-42, Section 11.24, Table 11.24-2 (08/82) and 11.19.2-2 (08/04)
CrushS	Secondary Crushing - High Moisture Ore	3-03-024-06	0.05	0.02	0.004	lb/ton	tons			0.185																				AP-42, Section 11.24, Table 11.24-2 (08/82) and 11.19.2-2 (08/04)
CrushT	Tertiary Crushing - High Moisture Ore	3-03-024-07	0.06	0.02	0.004	lb/ton	tons			0.185																				AP-42, Section 11.24, Table 11.24-2 (08/82) and 11.19.2-2 (08/04)
Screen	Screening	3-05-020-02	0.025	0.0087	0.0006	lb/ton	tons			0.068																				AP-42, Section 11.19, Table 11.19.2-2 (08/04)
MolyDry	Drying of High Moisture Ore	3-03-024-11	19.70	12.00	5.91	lb/ton	tons			0.30																				AP-42, Section 11.24, Table 11.24-2 (08/82) and Appendix B.2 (09/96)

Table H.1 Particulate Matter Emission Factors - Year 1

Process Code	Process Description	SCC Code	Emission Factors				Prod. Rate Units	Particulate Matter Emission Factor Inputs [a]																						Reference
			PM/TSP	PM_{10}	$PM_{2.5}$	Units		k (PM/TSP)	k (PM_{10})	k ($PM_{2.5}$)	A (ft^2)	U (mph)	M (%)	W (tons)	s (%)	sL (g/m^2)	S (mph)	P (days/yr)	a (PM/TSP)	a (PM_{10})	a ($PM_{2.5}$)	b (PM/TSP)	b (PM_{10})	b ($PM_{2.5}$)	u^*	u_t^*	e	f (%)	PE	
TrStnPrt	Material Transfer (Protected)	3-03-024-08	0.0002	0.00007	0.00001	lb/ton	tons	0.74	0.35	0.053		1.3	4																	AP-42, Section 13.2.4, Expression 1 (11/06)
TrStnUnp	Material Transfer (Unprotected)	3-03-024-08	0.001	0.0006	0.00009	lb/ton	tons	0.74	0.35	0.053		6.21	4																	AP-42, Section 13.2.4, Expression 1 (11/06)
LimeLd	Lime Product Loading, Enclosed Truck	3-05-016-26	0.61	0.29	0.04	lb/ton	tons	1	0.47	0.07																				AP-42, Section 11.17, Table 11.17-4 (02/98) and AP-42, Section 13.2.4 (11/06)
LimeSlk	Lime Slaking	3-05-016-09	8.00	8.00	8.00	lb/ton	tons																							AP-42, Section 11.17, Table 11.17-2 (02/98), Scrubber CE = 99%
ReagTr	Miscellaneous Reagent Material Transfer	3-03-024-04	0.008	0.004	0.0006	lb/ton	tons	0.74	0.35	0.053		6.21	1																	AP-42, Section 13.2.4, Expression 1 (11/06)
ICDE1	Internal Combustion Diesel Engine 37 ≤ kW > 75	2-02-001-02	0.40	0.40	0.40	g/kW-hr	hours	1	1	1																				NSPS Emission Standard
ICDE2	Internal Combustion Diesel Engine 225 ≤ kW > 450	2-02-001-02	0.20	0.20	0.20	g/kW-hr	hours	1	1	1																				NSPS Emission Standard
ICDE3	Internal Combustion Diesel Engine > 560 kW	2-02-001-02	0.20	0.20	0.20	g/kW-hr	hours	1	1	1																				NSPS Emission Standard
DFB	Diesel (Distillate Oil) Fired Boiler <100 MMBtu/hr	1-02-005-03	3.30	2.30	1.54	lb/1000 gal	hours	1	0.5	0.12																				AP-42, Section 1.3, Tables 1.3-1, 1.3-2 and 1.3-6 (09/98)
CADC	Crushing Area Dust Collector	none	1.42	0.64	0.12	lb/hr	hours	2.22	1.00	0.18																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
SARTDC	Stockpile Area and Reclaim Tunnel Dust Collector	none	3.11	1.47	0.22	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
SFCDC	Stockpile Feed Conveyor Transfer Point Dust Collector	none	0.76	0.36	0.05	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
PCADC	Pebble Crusher Area Dust Collector	none	0.96	0.32	0.06	lb/hr	hours	2.99	1.00	0.18																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
CCDC	Copper Concentrate Dust Collectors	none	3.76	1.78	0.27	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
MS/EP	Molybdenum Scrubber / Electrostatic Precipitator	none	0.015	0.014	0.013	lb/hr	hours	1.10	1.00	0.94																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
MDC	Molybdenum Dust Collector	none	0.112	0.053	0.008	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
LDC	Laboratory Dust Collectors	none	0.008	0.005	0.002	gr/dscf	dscf	1.65	1.00	0.49																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
SFDC	SAG Feed Conveyor Dust Collector	none	0.97	0.46	0.07	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
WindROM	Wind Erosion - Run of Mine Stockpile	3-03-888-01	0.21	0.11	0.02	ton/acre-yr	acres	1	0.5	0.075					2.5												38	4.77	22	FDEMI[b] (07/83), p. 51-57, MRI Equation, AP-42, Section 13.2.5 (11/06) and Table 13.2.4-1 (11/06)
WindCvd	Wind Erosion - Covered Stockpile	3-03-888-01	0	0	0	ton/acre-yr	acres																							Assumed
TailStrg	Wind Erosion - Tailings Storage	3-03-888-01	0.02	0.01	0.002	ton/acre-yr	acres	1	0.5	0.075															0.57	0.43				AP-42, Section 13.2.5 (11/06)

[a] k = particle size multiplier, A = horizonal area of blasting surface, U = mean wind speed, M = material moisture content, W = mean vehicle weight, s = surface material silt content, sL = road surface silt loading, S = mean vehicle speed, P = number of days per year with at least 0.01 inches of precipitation, a = constant based on particle size, b = constant based on particle size, u^* = friction velocity, u_t^* = threshold friction velocity, e = surface erodibility, f = percentage of time the wind speed exceeds 12 mph, PE = Thornthwaite's Precipitation-Evaporation Index

[b] FDEMI = *Fugitive Dust Emission Factors for the Mining Industry*

Table H.2 Gaseous Emission Factors - Year 1

Process Code	Process Description	SCC Code	Emission Factor									Prod. Rate Units	Reference
			CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	Units		
Blast	Blasting	3-05-020-09	67.00	17.00	2.00	0	0	566	0.02	0.005	lb/tons ANFO	tons ANFO	AP-42 Section 13.3, Table 13.3-1 (02/80) and 40 CFR 98, Tables C-1 and C-2[a]
SX	Solvent Extraction Mixers and Settlers	4-90-001-99	0	0	0	9.43E-05	0	0	0	0	lb/hr-ft^2	hours	Hydrometallurgy of Copper (Control Efficiency of 66%)
EW	Electrowining Tankhouse	none	0	0	0	0	1.57E-04	0	0	0	lb/hr-ft^2	hours	Applied Environmental Consultants - Report[b]
ICDE1	Internal Combustion Diesel Engine 37 ≤ kW > 75	2-02-001-02	5.0	4.4	0.0066	0.3	0	694	0.03	0.006	g/kW-hr	hours	NSPS Emission Standard, Complete Sulfur Conversion[c], and 40 CFR 98, Tables C-1 and C-2
ICDE2	Internal Combustion Diesel Engine 225 ≤ kW > 450	2-02-001-02	3.5	3.7	0.0066	0.3	0	694	0.03	0.006	g/kW-hr	hours	NSPS Emission Standard, Complete Sulfur Conversion[c], and 40 CFR 98, Tables C-1 and C-2
ICDE3	Internal Combustion Diesel Engine > 560 kW	2-02-001-02	3.5	6.0	0.0066	0.40	0	694	0.03	0.006	g/kW-hr	hours	NSPS Emission Standard, Complete Sulfur Conversion[c], and 40 CFR 98, Tables C-1 and C-2
DFB	Diesel (Distillate Oil) Fired Boiler <100 MMBtu/hr	1-02-005-03	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	lb/1000 gal	hours	AP-42 Section 1.3, Tables 1.3-1 and 1.3-3 (05/10)[c] and 40 CFR 98, Tables C-1 and C-2
C7DT	C7 Distribution Tank	4-03-010-19	0	0	0	1.08E-01	0	0	0	0	lb/hr	hours	EPA Tanks Program 4.0[d]
MST	MIBC Storage Tank	4-90-999-98	0	0	0	3.53E-03	0	0	0	0	lb/hr	hours	EPA Tanks Program 4.0[d]
DFSTHV	Diesel Fuel Storage Tank - Heavy Vehicles	4-03-010-19	0	0	0	1.39E-02	0	0	0	0	lb/hr	hours	EPA Tanks Program 4.0[d]

[a] Assumes a fuel oil to ammonium nitrate ratio of 9.0%.

[b] "Measurement of Sulfuric Acid Mist Emissions from the Cyprus Twin Buttes Copper Company Electrowinning Tankhouse" (02/93).

[c] SO_2 emissions are calculated using a sulfur content of 0.0015% for diesel fuel.

[d] Assumes continuous operation.

Table H.3 Particulate Matter Control Efficiencies - Year 1

Control Code	Control Description	Pick-up Efficiency (%)	Control Efficiency (%)	Reference
CADC	Crushing Area Dust Collector (PC-CADC)	100%	--	Assumed
SARTDC	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	100%	--	Assumed
SFCDC	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	100%	--	Assumed
PCADC	Pebble Crusher Area Dust Collector (PC-PCADC)	100%	--	Assumed
CCDC	Copper Concentrate Dust Collectors (PC-CCDC1/CCDC2)	100%	--	Assumed
MS/EP	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	100%	--	Assumed
LSV	Lime Storage Bin Vent (PC-LSBV)	100%	90%	Vendor Specification
LSS	Lime Slaker Scrubber (PC-LSS)	100%	99%	AP-42, Table B.2-3 (09/96)
SMSV	Sodium Metasilicate Storage Bin Vent (PC-SMSBV)	100%	90%	Vendor Specification
CVS	EW Cell Ventilation Scrubbers (PC-CVS)	100%	99%	Engineering Design
MDC	Molybdenum Dust Collector (PC-MDC)	100%	--	Assumed
SFDC	SAG Feed Conveyor Dust Collector (PC-SFDC)	100%	--	Assumed
HaulRdUI	Road Watering (Inside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
HaulRdUO	Road Watering (Outside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
HaulRdWTI	Road Watering - Water Trucks (Inside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
HaulRdWTO	Road Watering - Water Trucks (Outside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
Water	Addition of Process Water	N/A	100%	Assumed
WSpry	Water Spray at Unprotected Points	N/A	82.5%	Average Value of AP-42, p. 11.19.1-5 (11/95)
Wet	Wet Process	N/A	100%	Assumed
Clean	Wet, Cleaned Ore (no fines)	N/A	100%	Assumed
Enclosed	Totally Enclosed Transfer Point	N/A	100%	Assumed
UndrGrd	Underground Transfer Point	N/A	100%	Assumed
None	No Pollution Controls	0%	0%	Assumed

[a] EPA Document gives methods for calculating efficiencies - pages 5-9 to 5-14

Table H.4 Annual Particulate Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 1	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 1		PM_{10} Emissions (tpy) - Year 1		$PM_{2.5}$ Emissions (tpy) - Year 1	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Mining																		
MN01	Drilling	Drilling	3-05-020-10	F	29,200	holes	1.30	0.43	0.08	lb/hole	None	0%	18.98	18.98	6.33	6.33	1.17	1.17
MN02	Blasting	Blast	3-05-020-09	F	365	blasts	328.26	170.69	9.85	lb/blast	None	0%	59.91	59.91	31.15	31.15	1.80	1.80
MN03	Loading Concentrate Ore	Loading	3-03-024-08	F	21,535,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	7.55	7.55	3.57	3.57	0.54	0.54
MN04	Loading Leach Ore	Loading	3-03-024-08	F	20,805,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	7.30	7.30	3.45	3.45	0.52	0.52
MN05	Loading Waste Rock	Loading	3-03-024-08	F	73,000,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	25.60	25.60	12.11	12.11	1.83	1.83
MN06a	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Inside the Pit)	HaulingA	3-05-020-11	F	118,116	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUI	90%	1,045.05	104.51	268.53	26.85	26.85	2.69
MN06b	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Outside the Pit)	HaulingA	3-05-020-11	F	196,849	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUO	90%	1,741.66	174.17	447.52	44.75	44.75	4.48
MN07a	Hauling Leach Ore to Leach Pad (Inside the Pit)	HaulingA	3-05-020-11	F	87,854	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUI	90%	777.30	77.73	199.73	19.97	19.97	2.00
MN07b	Hauling Leach Ore to Leach Pad (Outside the Pit)	HaulingA	3-05-020-11	F	213,819	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUO	90%	1,891.80	189.18	486.10	48.61	48.61	4.86
MN08a	Hauling Waste Rock to Waste Rock Storage Area (Inside the Pit)	HaulingA	3-05-020-11	F	290,673	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUI	90%	2,571.78	257.18	660.83	66.08	66.08	6.61
MN08b	Hauling Waste Rock to Waste Rock Storage Area (Outside the Pit)	HaulingA	3-05-020-11	F	1,336,232	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUO	90%	11,822.55	1,182.25	3,037.83	303.78	303.78	30.38
MN09	Unloading Concentrate Ore to Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	2,153,500	tons	0.001	0.0006	0.00009	lb/ton	None	0%	1.28	1.28	0.61	0.61	0.09	0.09
MN10	Unloading Leach Ore to Leach Pad	TrStnUnp	3-03-024-08	F	20,805,000	tons	0.001	0.0006	0.00009	lb/ton	None	0%	12.36	12.36	5.85	5.85	0.89	0.89
MN11	Unloading Waste Rock to Waste Rock Storage Area	TrStnUnp	3-03-024-08	F	73,000,000	tons	0.001	0.0006	0.00009	lb/ton	None	0%	43.37	43.37	20.51	20.51	3.11	3.11
MN12	Bulldozer Use	Bldzrs	3-05-020-99	F	55,020	hrs	2.82	0.43	0.30	lb/hr	None	0%	77.66	77.66	11.71	11.71	8.15	8.15
MN13a	Water Truck Use (Inside the Pit)	WtrTrksA	3-05-020-99	F	31,655	VMT	14.21	3.65	0.37	lb/VMT	HaulRdWTI	90%	224.95	22.50	57.80	5.78	5.78	0.58
MN13b	Water Truck Use (Outside the Pit)	WtrTrksA	3-05-020-99	F	111,345	VMT	14.21	3.65	0.37	lb/VMT	HaulRdWTO	90%	791.24	79.12	203.31	20.33	20.33	2.03
MN14	Grader Use	GradersY1	3-05-020-99	F	114,600	VMT	2.05	0.71	0.06	lb/VMT	None	0%	117.71	117.71	40.96	40.96	3.65	3.65
MN15a	Support Vehicle Use on Unpaved Roads (Inside the Pit)	SupVehUY1A	3-03-999-99	F	272,403	VMT	7.31	1.88	0.19	lb/VMT	HaulRdUI	90%	995.58	99.56	255.82	25.58	25.58	2.56
MN15b	Support Vehicle Use on Unpaved Roads (Outside the Pit)	SupVehUY1A	3-03-999-99	F	272,403	VMT	7.31	1.88	0.19	lb/VMT	HaulRdUO	90%	995.58	99.56	255.82	25.58	25.58	2.56
M16a	Support Vehicle Use on the Paved Entrance Road (within the process area boundary)	SupVehPEY1A	3-03-999-99	F	74,399	VMT	0.04	0.008	0.002	lb/VMT	None	0%	1.58	1.58	0.32	0.32	0.08	0.08
M16b	Support Vehicle Use on the Paved Entrance Road (outside of the process area boundary)	SupVehPEY1A	3-03-999-99	F	322,577	VMT	0.04	0.008	0.002	lb/VMT	None	0%	6.84	6.84	1.37	1.37	0.34	0.34
M16c	Support Vehicle Use on Paved Industrial Roads	SupVehPIY1A	3-03-999-99	F	185,705	VMT	0.80	0.16	0.04	lb/VMT	None	0%	74.37	74.37	14.87	14.87	3.65	3.65
Primary Crushing, Conveying, Coarse Ore Storage, and Reclaim Conveying																		
PC01	Wind Erosion of the Run of Mine Stockpile	WindROM	3-03-888-01	F	26	acres	0.21	0.11	0.02	ton/acre-yr	None	0%	5.43	5.43	2.72	2.72	0.41	0.41
PC02	Unloading to Primary Crusher Dump Hopper (H-CDp) from Haul Trucks or Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	21,535,000	tons	0.001	0.0006	0.00009	lb/ton	WSpry	82.5%	12.80	2.24	6.05	1.06	0.92	0.16
PC03	Primary Crusher (PCr)	CrushP	3-03-024-05	NF	43,362,000	tons	0.02	0.009	0.002	lb/ton	CADC	100%	433.62	0	195.13	0	36.14	0
PC04	Primary Crusher (PCr) to Crusher Discharge Hopper (H-CDs)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
PC05	Crusher Discharge Hopper (H-CDs) to Crusher Discharge Feeder (F-CD)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	3.38	0	1.60	0	0.24	0
PC06	Crusher Discharge Feeder (F-CD) to Stockpile Feed Conveyor No. 1 (CV-SF1)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	3.38	0	1.60	0	0.24	0

Table H.4 Annual Particulate Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 1	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 1		PM_{10} Emissions (tpy) - Year 1		$PM_{2.5}$ Emissions (tpy) - Year 1	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
PC07	Stockpile Feed Conveyor No. 1 (CV-SF1) to Stockpile Feed Conveyor No. 2 (CV-SF2)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SFCDC	100%	3.38	0	1.60	0	0.24	0
PC08	Stockpile Feed Conveyor No. 2 (CV-SF2) to Covered Coarse Ore Stockpile	TrStnPrt	3-03-024-08	F	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	3.38	0	1.60	0	0.24	0
PC09	Wind Erosion of the Coarse Ore Stockpile	WindCvd	3-03-888-01	F	5	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
PC10	Coarse Ore Stockpile to Reclaim Feeders (F-R1/R4)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	UndrGrd [a]	100%	0	0	0	0	0	0
PC11	Reclaim Feeders (F-R1/R4) to Reclaim Conveyor (CV-R)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	3.38	0	1.60	0	0.24	0
PC12	Reclaim Conveyor (CV-R) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	3.38	0	1.60	0	0.24	0
PC13	Pebble Conveyor No. 3 (CV-Pb3) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.49	0	0.23	0	0.03	0
PC14	SAG Mill Feed Conveyor (CV-SMF) to SAG Mill (M-SAG)	TrStnPrt	3-03-024-08	NF	49,631,400	tons	0.0002	0.00007	0.00001	lb/ton	Water [a]	100%	0	0	0	0	0	0
Milling																		
M01	SAG Mill (M-SAG)	CrushS	3-03-024-06	NF	49,669,200	tons	0.05	0.02	0.004	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M02	SAG Mill (M-SAG) to Trommel Screen (Sn-T)	TrStnPrt	3-03-024-08	NF	49,669,200	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M03	Trommel Screen (Sn-T)	Screen	3-05-020-02	NF	49,669,200	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M04	Trommel Screen (Sn-T) to Pebble Conveyor No. 1 (CV-Pb1)	TrStnPrt	3-03-024-08	NF	10,505,042	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M05	Pebble Conveyor No. 1 (CV-Pb1) to Pebble Wash Screen (Sn-PbW)	TrStnPrt	3-03-024-08	NF	10,505,042	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M06	Pebble Wash Screen (Sn-PbW)	Screen	3-05-020-02	NF	10,505,042	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M07	Pebble Wash Screen (Sn-PbW) to Pebble Conveyor No. 2	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M08	Pebble Conveyor No. 2 (CV-Pb2) to SAG Oversize Surge Bin (B-SAGOS)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.49	0	0.23	0	0.03	0
M09	SAG Oversize Surge Bin (B-SAGOS) to Pebble Crusher Feeder (F-PbC)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.49	0	0.23	0	0.03	0
M10	Pebble Crusher Feeder (F-PbC) to Pebble Crusher (PbC)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M11	Pebble Crusher (PbC)	CrushT	3-03-024-07	NF	6,269,400	tons	0.06	0.02	0.004	lb/ton	PCADC	100%	188.08	0	62.69	0	11.61	0
M12	Pebble Crusher (PbC) to Pebble Conveyor No. 3 (CV-Pb3)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.49	0	0.23	0	0.03	0
Copper Concentrate Dewatering and Stacking																		
CCD01	Copper Concentrate Filters (Ft-CC1/CC4) to Copper Concentrate Conveyor (CV-CC)	TrCuCncPrt	3-03-024-08	NF	550,936	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
CCD02	Copper Concentrate Conveyor (CV-CC) to Copper Concentrate Loadout Stockpile	TrCuCncPrt	3-03-024-08	F	550,936	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.01	0	0.006	0	0.0009	0
CCD03	Wind Erosion of Copper Concentrate Loadout Stockpile	WindCvd	3-03-888-01	F	1.17	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
CCD04	Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loaders	TrCuCncPrt	3-03-024-08	F	550,936	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.01	0	0.006	0	0.0009	0
Molybdenum Dewatering and Packaging																		
MD01	Molybdenum Concentrate Filter (Ft-MC) to Molybdenum Concentrate Dryer (D-MC)	TrMlyCncPrt	3-03-024-08	NF	6,377	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD02	Molybdenum Concentrate Dryer	MolyDry	3-03-024-11	NF	6,377	tons	19.70	12.00	5.91	lb/ton	MS/EP	100%	62.81	0	38.26	0	18.84	0
MD03	Molybdenum Concentrate Dryer (D-MC) to Molybdenum Concentrate Bin (B-MC)	DTrMlyCncPrt	3-03-024-08	NF	6,377	tons	0.00004	0.00002	0.000003	lb/ton	MDC	100%	0.0001	0	0.00007	0	0.00001	0
MD04	Molybdenum Concentrate Bin (B-MC) to Molybdenum Concentrate Hopper (H-MC)	DTrMlyCnc	3-03-024-08	NF	6,377	tons	0.0003	0.0002	0.00002	lb/ton	None	0%	0.001	0.001	0.0005	0.0005	0.00008	0.00008

Table H.4 Annual Particulate Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 1	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 1		PM_{10} Emissions (tpy) - Year 1		$PM_{2.5}$ Emissions (tpy) - Year 1	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
MD05	Molybdenum Concentrate Hopper (H-MC) to Molybdenum Concentrate Conveyor (CV-MC)	DTrMlyCncPrt	3-03-024-08	NF	6,377	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD06	Molybdenum Concentrate Conveyor (CV-MC) to Molybdenum Packaging and Weigh System (MPS)	DTrMlyCnc	3-03-024-08	NF	6,377	tons	0.0003	0.0002	0.00002	lb/ton	MDC	100%	0.001	0	0.0005	0	0.00008	0
Tailings Dewatering and Placement																		
TDS01	Tailings Filters (Ft-T1/T14) to Tailings Belt Feeders (F-T1/T14)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS02	Tailings Belt Feeders (F-T1/T14) to Fixed Tailings Conveyor No. 1 (CV-F1)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS03	Fixed Tailings Conveyor No. 1 (CV-F1) to Fixed Tailings Conveyor No. 2 (CV-F2)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS04	Fixed Tailings Conveyor No. 2 (CV-F2) to Fixed Tailings Conveyor No. 3 (CV-F3)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.52	0.52	0.25	0.25	0.04	0.04
TDS05	Fixed Tailings Conveyor No. 3 (CV-F3) to Relocatable Conveyor (CV-R1)	FiltTailPrt	3-03-024-08	F	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.52	0.52	0.25	0.25	0.04	0.04
TDS06	Relocatable Conveyor (CV-R1) to Shiftable Conveyor (CV-S1)	FiltTailPrt	3-03-024-08	F	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.52	0.52	0.25	0.25	0.04	0.04
TDS07	Shiftable Conveyor (CV-S1) to Belt Wagon Conveyor (CV-BW1)	FiltTail	3-03-024-08	F	42,804,687	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	4.00	4.00	1.89	1.89	0.29	0.29
TDS08	Belt Wagon Conveyor (CV-BW1) to Spreader Crawler Mounted Conveyor (CV-SP1)	FiltTail	3-03-024-08	F	42,804,687	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	4.00	4.00	1.89	1.89	0.29	0.29
TDS09	Spreader Crawler Mounted Conveyor (CV-SP1) to Tailings Storage	FiltTail	3-03-024-08	F	42,804,687	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	4.00	4.00	1.89	1.89	0.29	0.29
TDS10	Wind Erosion of Tailings Storage	TailStrg	3-03-888-01	F	1,500	acres	0.02	0.01	0.002	ton/acre-yr	None	0%	30.23	30.23	15.11	15.11	2.27	2.27
Fuel Burning Equipment																		
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	8,760	hours	3.30	2.30	1.54	lb/1000 gal	None	0%	0.63	0.63	0.44	0.44	0.30	0.30
					6.0	MMBtu/hr												
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.11	0.11	0.11	0.11	0.11	0.11
					1,000	kW												
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.11	0.11	0.11	0.11	0.11	0.11
					1,000	kW												
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.08	0.08	0.08	0.08	0.08	0.08
					750	kW												
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.08	0.08	0.08	0.08	0.08	0.08
					750	kW												
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	500	hours	0.40	0.40	0.40	g/kW-hr	None	0%	0.01	0.01	0.01	0.01	0.01	0.01
					50	kW												
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.03	0.03	0.03	0.03	0.03	0.03
					400	hp												
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.03	0.03	0.03	0.03	0.03	0.03
					400	hp												

Table H.4 Annual Particulate Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 1	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 1		PM_{10} Emissions (tpy) - Year 1		$PM_{2.5}$ Emissions (tpy) - Year 1	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Miscellaneous Sources																		
MS01	Transfer of Lime to the Lime Storage Bin (B-L)	LimeLd	3-05-016-26	NF	56,700	tons	0.61	0.29	0.04	lb/ton	LSV [a]	90%	1.73	1.73	0.82	0.82	0.12	0.12
MS02	Lime Storage Bin (B-L) to Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2)	ReagTr	3-03-024-04	NF	56,700	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS03	Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2) to Lime Slakers 1 and 2 (T-LS1/2)	ReagTr	3-03-024-04	NF	56,700	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS04	Lime Slaking in Lime Slakers 1 and 2 (T-LS1/2)	LimeSlk	3-05-016-09	NF	56,700	tons	8.00	8.00	8.00	lb/ton	LSS	99%	226.80	2.27	226.80	2.27	226.80	2.27
MS05	Transfer of Sodium Metasilicate to the Sodium Metasilicate Storage Bin (B-SM)	ReagTr	3-03-024-04	NF	3,000	tons	0.008	0.004	0.0006	lb/ton	SMSV [a]	90%	0.001	0.001	0.0006	0.0006	0.00009	0.00009
MS06	Transfer of Flocculant from Supersacks to Flocculant Storage Bins (B-F1/F2)	ReagTr	3-03-024-04	NF	1,100	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.005	0.005	0.002	0.002	0.0003	0.0003
MS07	Transfer of Guar from Bags to Guar Feeder (F-Gu)	ReagTr	3-03-024-04	NF	150	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.0006	0.0006	0.0003	0.0003	0.00004	0.00004
MS08	Transfer of Granular Cobalt Sulfate from Bags to Cobalt Sulfate Feeder (F-CoS)	ReagTr	3-03-024-04	NF	6	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.00002	0.00002	0.00001	0.00001	0.000002	0.000002
Particulate Matter Pollution Control Equipment with Emission Limits																		
PCL01	Crushing Area Dust Collector (PC-CADC)	CADC	none	NF	8,760	hours	1.42	0.64	0.12	lb/hr	--	--	--	6.22	--	2.80	--	0.52
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	SARTDC	none	NF	8,760	hours	3.11	1.47	0.22	lb/hr	--	--	--	13.61	--	6.44	--	0.97
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	SFCDC	none	NF	8,760	hours	0.76	0.36	0.05	lb/hr	--	--	--	3.33	--	1.58	--	0.24
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	PCADC	none	NF	8,760	hours	0.96	0.32	0.06	lb/hr	--	--	--	4.19	--	1.40	--	0.26
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	CCDC	none	NF	8,760	hours	3.76	1.78	0.27	lb/hr	--	--	--	16.48	--	7.80	--	1.18
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	CCDC	none	NF	8,760	hours	3.76	1.78	0.27	lb/hr	--	--	--	16.48	--	7.80	--	1.18
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	MS/EP	none	NF	8,760	hours	0.015	0.014	0.013	lb/hr	--	--	--	0.07	--	0.06	--	0.06
PCL08	Molybdenum Dust Collector (PC-MDC)	MDC	none	NF	8,760	hours	0.112	0.053	0.008	lb/hr	--	--	--	0.49	--	0.23	--	0.04
PCL09	Laboratory Dust Collector 1 (PC-L1)	LDC	none	NF	4,357,315,176	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	2.56	--	1.56	--	0.76
PCL10	Laboratory Dust Collector 2 (PC-L2)	LDC	none	NF	4,357,315,176	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	2.56	--	1.56	--	0.76
PCL11	Laboratory Dust Collector 3 (PC-L3)	LDC	none	NF	4,357,315,176	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	2.56	--	1.56	--	0.76
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	SFDC	none	NF	8,760	hours	0.97	0.46	0.07	lb/hr	--	--	--	4.26	--	2.01	--	0.31
Total Non-Fugitive Emissions (excluding tailpipe emissions):													**933.50**	**78.46**	**533.76**	**39.03**	**295.66**	**10.23**
Total Fugitive Emissions (excluding tailpipe emissions):													**23,376.92**	**2,791.22**	**6,057.76**	**765.20**	**617.92**	**88.32**
Total Emissions (excluding tailpipe emissions):													**24,310.42**	**2,869.68**	**6,591.52**	**804.23**	**913.57**	**98.55**
Tailpipe Emissions (see Tables H.10-H.12):													**29.40**	**29.40**	**29.40**	**29.40**	**29.40**	**29.40**

[a] The control efficiency for this emission unit is inherent to the process. Therefore, the control efficiency is applied to both uncontrolled and controlled emissions.

Table H.5 Maximum Daily Particulate Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 1	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 1		PM_{10} Emissions (tpd) - Year 1		$PM_{2.5}$ Emissions (tpd) - Year 1	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Mining																		
MN01	Drilling	Drilling	3-05-020-10	F	80	holes	1.30	0.43	0.08	lb/hole	None	0%	0.05	0.05	0.02	0.02	0.003	0.003
MN02	Blasting	Blast	3-05-020-09	F	1.0	blasts	328.26	170.69	9.85	lb/blast	None	0%	0.16	0.16	0.09	0.09	0.005	0.005
MN03	Loading Concentrate Ore	Loading	3-03-024-08	F	59,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0.02	0.02	0.01	0.01	0.001	0.001
MN04	Loading Leach Ore	Loading	3-03-024-08	F	57,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0.02	0.02	0.01	0.01	0.00	0.00
MN05	Loading Waste Rock	Loading	3-03-024-08	F	200,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0.07	0.07	0.03	0.03	0.005	0.005
MN06a	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Inside the Pit)	HaulingHD	3-05-020-11	F	324	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	3.44	0.34	0.88	0.09	0.09	0.01
MN06b	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Outside the Pit)	HaulingHD	3-05-020-11	F	539	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	5.73	0.57	1.47	0.15	0.15	0.01
MN07a	Hauling Leach Ore to Leach Pad (Inside the Pit)	HaulingHD	3-05-020-11	F	241	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	2.56	0.26	0.66	0.07	0.07	0.01
MN07b	Hauling Leach Ore to Leach Pad (Outside the Pit)	HaulingHD	3-05-020-11	F	586	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	6.22	0.62	1.60	0.16	0.16	0.02
MN08a	Hauling Waste Rock to Waste Rock Storage Area (Inside the Pit)	HaulingHD	3-05-020-11	F	796	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	8.46	0.85	2.17	0.22	0.22	0.02
MN08b	Hauling Waste Rock to Waste Rock Storage Area (Outside the Pit)	HaulingHD	3-05-020-11	F	3,661	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	38.89	3.89	9.99	1.00	1.00	0.10
MN09	Unloading Concentrate Ore to Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	59,000	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0.04	0.04	0.02	0.02	0.003	0.003
MN10	Unloading Leach Ore to Leach Pad	TrStnUnp	3-03-024-08	F	57,000	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0.03	0.03	0.02	0.02	0.002	0.002
MN11	Unloading Waste Rock to Waste Rock Storage Area	TrStnUnp	3-03-024-08	F	200,000	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0.12	0.12	0.06	0.06	0.009	0.009
MN12	Bulldozer Use	Bldzrs	3-05-020-99	F	151	hrs	2.82	0.43	0.30	lb/hr	None	0%	0.21	0.21	0.03	0.03	0.02	0.02
MN13a	Water Truck Use (Inside the Pit)	WtrTrksHD	3-05-020-99	F	87	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTI	90%	0.74	0.07	0.19	0.02	0.02	0.002
MN13b	Water Truck Use (Outside the Pit)	WtrTrksHD	3-05-020-99	F	305	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTO	90%	2.60	0.26	0.67	0.07	0.07	0.007
MN14	Grader Use	GradersY1	3-05-020-99	F	314	VMT	2.05	0.71	0.06	lb/VMT	None	0%	0.32	0.32	0.11	0.11	0.01	0.01
MN15a	Support Vehicle Use on Unpaved Roads (Inside the Pit)	SupVehUY1D	3-03-999-99	F	746	VMT	8.78	2.26	0.23	lb/VMT	HaulRdUI	90%	3.27	0.33	0.84	0.08	0.08	0.008
MN15b	Support Vehicle Use on Unpaved Roads (Outside the Pit)	SupVehUY1D	3-03-999-99	F	746	VMT	8.78	2.26	0.23	lb/VMT	HaulRdUO	90%	3.27	0.33	0.84	0.08	0.08	0.008
M16a	Support Vehicle Use on the Paved Entrance Road (within the process area boundary)	SupVehPEY1D	3-03-999-99	F	302	VMT	0.05	0.01	0.002	lb/VMT	None	0%	0.008	0.008	0.002	0.002	0.0004	0.0004
M16b	Support Vehicle Use on the Paved Entrance Road (outside of the process area boundary)	SupVehPEY1D	3-03-999-99	F	1,310	VMT	0.05	0.01	0.002	lb/VMT	None	0%	0.03	0.03	0.007	0.007	0.002	0.002
M16c	Support Vehicle Use on Paved Industrial Roads	SupVehPIY1D	3-03-999-99	F	610	VMT	1.01	0.20	0.05	lb/VMT	None	0%	0.31	0.31	0.06	0.06	0.02	0.02
Primary Crushing, Conveying, Coarse Ore Storage, and Reclaim Conveying																		
PC01	Wind Erosion of the Run of Mine Stockpile	WindROM	3-03-888-01	F	26	acres	0.21	0.11	0.02	ton/acre-yr	None	0%	0.01	0.01	0.007	0.007	0.001	0.001
PC02	Unloading to Primary Crusher Dump Hopper (H-CDp) from Haul Trucks or Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	166,800	tons	0.001	0.0006	0.00009	lb/ton	WSpry	82.5%	0.10	0.02	0.05	0.008	0.007	0.001
PC03	Primary Crusher (PCr)	CrushP	3-03-024-05	NF	166,800	tons	0.02	0.009	0.002	lb/ton	CADC	100%	1.67	0	0.75	0	0.14	0
PC04	Primary Crusher (PCr) to Crusher Discharge Hopper (H-CDs)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
PC05	Crusher Discharge Hopper (H-CDs) to Crusher Discharge Feeder (F-CD)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	0.01	0	0.006	0	0.0009	0
PC06	Crusher Discharge Feeder (F-CD) to Stockpile Feed Conveyor No. 1 (CV-SF1)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	0.01	0	0.006	0	0.0009	0

Table H.5 Maximum Daily Particulate Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 1	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 1		PM_{10} Emissions (tpd) - Year 1		$PM_{2.5}$ Emissions (tpd) - Year 1	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
PC07	Stockpile Feed Conveyor No. 1 (CV-SF1) to Stockpile Feed Conveyor No. 2 (CV-SF2)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SFCDC	100%	0.01	0	0.006	0	0.0009	0
PC08	Stockpile Feed Conveyor No. 2 (CV-SF2) to Covered Coarse Ore Stockpile	TrStnPrt	3-03-024-08	F	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	0.01	0	0.006	0	0.0009	0
PC09	Wind Erosion of the Coarse Ore Stockpile	WindCvd	3-03-888-01	F	5	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
PC10	Coarse Ore Stockpile to Reclaim Feeders (F-R1/R4)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	UndrGrd [a]	100%	0	0	0	0	0	0
PC11	Reclaim Feeders (F-R1/R4) to Reclaim Conveyor (CV-R)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	0.01	0	0.006	0	0.0009	0
PC12	Reclaim Conveyor (CV-R) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.01	0	0.006	0	0.0009	0
PC13	Pebble Conveyor No. 3 (CV-Pb3) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.003	0	0.002	0	0.0002	0
PC14	SAG Mill Feed Conveyor (CV-SMF) to SAG Mill (M-SAG)	TrStnPrt	3-03-024-08	NF	209,308	tons	0.0002	0.00007	0.00001	lb/ton	Water [a]	100%	0	0	0	0	0	0
Milling																		
M01	SAG Mill (M-SAG)	CrushS	3-03-024-06	NF	209,432	tons	0.05	0.02	0.004	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M02	SAG Mill (M-SAG) to Trommel Screen (Sn-T)	TrStnPrt	3-03-024-08	NF	209,432	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M03	Trommel Screen (Sn-T)	Screen	3-05-020-02	NF	209,432	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M04	Trommel Screen (Sn-T) to Pebble Conveyor No. 1 (CV-Pb1)	TrStnPrt	3-03-024-08	NF	44,426	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M05	Pebble Conveyor No. 1 (CV-Pb1) to Pebble Wash Screen (Sn-PbW)	TrStnPrt	3-03-024-08	NF	44,426	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M06	Pebble Wash Screen (Sn-PbW)	Screen	3-05-020-02	NF	44,426	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M07	Pebble Wash Screen (Sn-PbW) to Pebble Conveyor No. 2	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M08	Pebble Conveyor No. 2 (CV-Pb2) to SAG Oversize Surge Bin (B-SAGOS)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.003	0	0.002	0	0.0002	0
M09	SAG Oversize Surge Bin (B-SAGOS) to Pebble Crusher Feeder (F-PbC)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.003	0	0.002	0	0.0002	0
M10	Pebble Crusher Feeder (F-PbC) to Pebble Crusher (PbC)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M11	Pebble Crusher (PbC)	CrushT	3-03-024-07	NF	42,508	tons	0.06	0.02	0.004	lb/ton	PCADC	100%	1.28	0	0.43	0	0.08	0
M12	Pebble Crusher (PbC) to Pebble Conveyor No. 3 (CV-Pb3)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.003	0	0.002	0	0.0002	0
Copper Concentrate Dewatering and Stacking																		
CCD01	Copper Concentrate Filters (Ft-CC1/CC4) to Copper Concentrate Conveyor (CV-CC)	TrCuCncPrt	3-03-024-08	NF	3,312	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
CCD02	Copper Concentrate Conveyor (CV-CC) to Copper Concentrate Loadout Stockpile	TrCuCncPrt	3-03-024-08	F	3,312	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.00007	0	0.00003	0	0.000005	0
CCD03	Wind Erosion of Copper Concentrate Loadout Stockpile	WindCvd	3-03-888-01	F	1.17	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
CCD04	Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loaders	TrCuCncPrt	3-03-024-08	F	3,312	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.00007	0	0.00003	0	0.000005	0
Molybdenum Dewatering and Packaging																		
MD01	Molybdenum Concentrate Filter (Ft-MC) to Molybdenum Concentrate Dryer (D-MC)	TrMlyCncPrt	3-03-024-08	NF	45.6	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD02	Molybdenum Concentrate Dryer	MolyDry	3-03-024-11	NF	45.6	tons	19.70	12.00	5.91	lb/ton	MS/EP	100%	0.45	0	0.27	0	0.13	0
MD03	Molybdenum Concentrate Dryer (D-MC) to Molybdenum Concentrate Bin (B-MC)	DTrMlyCncPrt	3-03-024-08	NF	45.6	tons	0.00004	0.00002	0.000003	lb/ton	MDC	100%	0.000001	0	0.0000005	0	0.00000007	0
MD04	Molybdenum Concentrate Bin (B-MC) to Molybdenum Concentrate Hopper (H-MC)	DTrMlyCnc	3-03-024-08	NF	45.6	tons	0.0003	0.0002	0.00002	lb/ton	None	0%	0.000008	0.000008	0.000004	0.000004	0.0000005	0.0000005

Table H.5 Maximum Daily Particulate Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 1	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 1		PM_{10} Emissions (tpd) - Year 1		$PM_{2.5}$ Emissions (tpd) - Year 1	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
MD05	Molybdenum Concentrate Hopper (H-MC) to Molybdenum Concentrate Conveyor (CV-MC)	DTrMlyCncPrt	3-03-024-08	NF	45.6	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD06	Molybdenum Concentrate Conveyor (CV-MC) to Molybdenum Packaging and Weigh System (MPS)	DTrMlyCnc	3-03-024-08	NF	45.6	tons	0.0003	0.0002	0.00002	lb/ton	MDC	100%	0.000008	0	0.000004	0	0.0000005	0
Tailings Dewatering and Placement																		
TDS01	Tailings Filters (Ft-T1/T14) to Tailings Belt Feeders (F-T1/T14)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS02	Tailings Belt Feeders (F-T1/T14) to Fixed Tailings Conveyor No. 1 (CV-F1)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS03	Fixed Tailings Conveyor No. 1 (CV-F1) to Fixed Tailings Conveyor No. 2 (CV-F2)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS04	Fixed Tailings Conveyor No. 2 (CV-F2) to Fixed Tailings Conveyor No. 3 (CV-F3)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.003	0.003	0.001	0.001	0.0002	0.0002
TDS05	Fixed Tailings Conveyor No. 3 (CV-F3) to Relocatable Conveyor (CV-R1)	FiltTailPrt	3-03-024-08	F	257,328	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.003	0.003	0.001	0.001	0.0002	0.0002
TDS06	Relocatable Conveyor (CV-R1) to Shiftable Conveyor (CV-S1)	FiltTailPrt	3-03-024-08	F	257,328	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.003	0.003	0.001	0.001	0.0002	0.0002
TDS07	Shiftable Conveyor (CV-S1) to Belt Wagon Conveyor (CV-BW1)	FiltTail	3-03-024-08	F	257,328	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	0.02	0.02	0.01	0.01	0.002	0.002
TDS08	Belt Wagon Conveyor (CV-BW1) to Spreader Crawler Mounted Conveyor (CV-SP1)	FiltTail	3-03-024-08	F	257,328	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	0.02	0.02	0.01	0.01	0.002	0.002
TDS09	Spreader Crawler Mounted Conveyor (CV-SP1) to Tailings Storage	FiltTail	3-03-024-08	F	257,328	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	0.02	0.02	0.01	0.01	0.002	0.002
TDS10	Wind Erosion of Tailings Storage	TailStrg	3-03-888-01	F	1,500	acres	0.02	0.01	0.002	ton/acre-yr	None	0%	0.08	0.08	0.04	0.04	0.006	0.006
Fuel Burning Equipment																		
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	24	hours	3.30	2.30	1.54	lb/1000 gal	None	0%	0.002	0.002	0.001	0.001	0.0008	0.0008
					6.0	MMBtu/hr												
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.005	0.005	0.005	0.005	0.005	0.005
					1,000	kW												
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.005	0.005	0.005	0.005	0.005	0.005
					1,000	kW												
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.004	0.004	0.004	0.004	0.004	0.004
					750	kW												
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.004	0.004	0.004	0.004	0.004	0.004
					750	kW												
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	24	hours	0.40	0.40	0.40	g/kW-hr	None	0%	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
					50	kW												
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.002	0.002	0.002	0.002	0.002	0.002
					400	hp												
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.002	0.002	0.002	0.002	0.002	0.002
					400	hp												

Table H.5 Maximum Daily Particulate Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 1	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 1		PM_{10} Emissions (tpd) - Year 1		$PM_{2.5}$ Emissions (tpd) - Year 1	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Miscellaneous Sources																		
MS01	Transfer of Lime to the Lime Storage Bin (B-L)	LimeLd	3-05-016-26	NF	186.41	tons	0.61	0.29	0.04	lb/ton	BPLSV [a]	90%	0.006	0.006	0.003	0.003	0.0004	0.0004
MS02	Lime Storage Bin (B-L) to Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2)	ReagTr	3-03-024-04	NF	186.41	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS03	Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2) to Lime Slakers 1 and 2 (T-LS1/2)	ReagTr	3-03-024-04	NF	186.41	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS04	Lime Slaking in Lime Slakers 1 and 2 (T-LS1/2)	LimeSlk	3-05-016-09	NF	186.41	tons	8.00	8.00	8.00	lb/ton	LSS	99%	0.75	0.007	0.75	0.007	0.75	0.007
MS05	Transfer of Sodium Metasilicate to the Sodium Metasilicate Storage Bin (B-SM)	ReagTr	3-03-024-04	NF	9.86	tons	0.008	0.004	0.0006	lb/ton	SMSV [a]	90%	0.000004	0.000004	0.000002	0.000002	0.0000003	0.0000003
MS06	Transfer of Flocculant from Supersacks to Flocculant Storage Bins (B-F1/F2)	ReagTr	3-03-024-04	NF	3.62	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.00001	0.00001	0.000007	0.000007	0.000001	0.000001
MS07	Transfer of Guar from Bags to Guar Feeder (F-Gu)	ReagTr	3-03-024-04	NF	0.49	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.000002	0.000002	0.000001	0.000001	0.0000001	0.0000001
MS08	Transfer of Granular Cobalt Sulfate from Bags to Cobalt Sulfate Feeder (F-CoS)	ReagTr	3-03-024-04	NF	0.02	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.00000008	0.00000008	0.00000004	0.00000004	0.000000006	0.000000006
Particulate Matter Pollution Control Equipment with Emission Limits																		
PCL01	Crushing Area Dust Collector (PC-CADC)	CADC	none	NF	24	hours	1.42	0.64	0.12	lb/hr	--	--	--	0.02	--	0.008	--	0.001
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	SARTDC	none	NF	24	hours	3.11	1.47	0.22	lb/hr	--	--	--	0.04	--	0.02	--	0.003
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	SFCDC	none	NF	24	hours	0.76	0.36	0.05	lb/hr	--	--	--	0.01	--	0.004	--	0.001
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	PCADC	none	NF	24	hours	0.96	0.32	0.06	lb/hr	--	--	--	0.01	--	0.004	--	0.0007
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	CCDC	none	NF	24	hours	3.76	1.78	0.27	lb/hr	--	--	--	0.05	--	0.02	--	0.003
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	CCDC	none	NF	24	hours	3.76	1.78	0.27	lb/hr	--	--	--	0.05	--	0.02	--	0.003
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	MS/EP	none	NF	24	hours	0.015	0.014	0.013	lb/hr	--	--	--	0.0002	--	0.0002	--	0.0002
PCL08	Molybdenum Dust Collector (PC-MDC)	MDC	none	NF	24	hours	0.112	0.053	0.008	lb/hr	--	--	--	0.001	--	0.0006	--	0.0001
PCL09	Laboratory Dust Collector 1 (PC-L1)	LDC	none	NF	11,937,850	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.007	--	0.004	--	0.002
PCL10	Laboratory Dust Collector 2 (PC-L2)	LDC	none	NF	11,937,850	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.007	--	0.004	--	0.002
PCL11	Laboratory Dust Collector 3 (PC-L3)	LDC	none	NF	11,937,850	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.007	--	0.004	--	0.002
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	SFDC	none	NF	24	hours	0.97	0.46	0.07	lb/hr	--	--	--	0.01	--	0.006	--	0.0008
Total Non-Fugitive Emissions (excluding tailpipe emissions):													**4.25**	**0.24**	**2.26**	**0.13**	**1.13**	**0.05**
Total Fugitive Emissions (excluding tailpipe emissions):													**76.87**	**9.11**	**19.92**	**2.48**	**2.03**	**0.29**
Total Emissions (excluding tailpipe emissions):													**81.12**	**9.35**	**22.18**	**2.61**	**3.16**	**0.34**
Tailpipe Emissions (see Tables H.10-H.12):													**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**

[a] The control efficiency for this emission unit is inherent to the process. Therefore, the control efficiency is applied to both uncontrolled and controlled emissions.

Table H.6 Maximum Hourly Particulate Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 1	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (lb/hr) - Year 1		PM_{10} Emissions (lb/hr) - Year 1		$PM_{2.5}$ Emissions (lb/hr) - Year 1	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Mining																		
MN01	Drilling	Drilling	3-05-020-10	F	80	holes	1.30	0.43	0.08	lb/hole	None	0%	104.00	104.00	34.67	34.67	6.42	6.42
MN02	Blasting	Blast	3-05-020-09	F	1.00	blasts	328.26	170.69	9.85	lb/blast	None	0%	328.26	328.26	170.69	170.69	9.85	9.85
MN03	Loading Concentrate Ore	Loading	3-03-024-08	F	2,458	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	1.72	1.72	0.82	0.82	0.12	0.12
MN04	Loading Leach Ore	Loading	3-03-024-08	F	2,375	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	1.67	1.67	0.79	0.79	0.12	0.12
MN05	Loading Waste Rock	Loading	3-03-024-08	F	8,333	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	5.85	5.85	2.76	2.76	0.42	0.42
MN06a	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Inside the Pit)	HaulingHD	3-05-020-11	F	13	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	286.47	28.65	73.61	7.36	7.36	0.74
MN06b	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Outside the Pit)	HaulingHD	3-05-020-11	F	22	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	477.43	47.74	122.68	12.27	12.27	1.23
MN07a	Hauling Leach Ore to Leach Pad (Inside the Pit)	HaulingHD	3-05-020-11	F	10	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	213.08	21.31	54.75	5.48	5.48	0.55
MN07b	Hauling Leach Ore to Leach Pad (Outside the Pit)	HaulingHD	3-05-020-11	F	24	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	518.59	51.86	133.25	13.33	13.33	1.33
MN08a	Hauling Waste Rock to Waste Rock Storage Area (Inside the Pit)	HaulingHD	3-05-020-11	F	33	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	704.98	70.50	181.15	18.11	18.11	1.81
MN08b	Hauling Waste Rock to Waste Rock Storage Area (Outside the Pit)	HaulingHD	3-05-020-11	F	153	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	3,240.83	324.08	832.74	83.27	83.27	8.33
MN09	Unloading Concentrate Ore to Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	2,458	tons	0.001	0.0006	0.00009	lb/ton	None	0%	2.92	2.92	1.38	1.38	0.21	0.21
MN10	Unloading Leach Ore to Leach Pad	TrStnUnp	3-03-024-08	F	2,375	tons	0.001	0.0006	0.00009	lb/ton	None	0%	2.82	2.82	1.33	1.33	0.20	0.20
MN11	Unloading Waste Rock to Waste Rock Storage Area	TrStnUnp	3-03-024-08	F	8,333	tons	0.001	0.0006	0.00009	lb/ton	None	0%	9.90	9.90	4.68	4.68	0.71	0.71
MN12	Bulldozer Use	Bldzrs	3-05-020-99	F	6	hrs	2.82	0.43	0.30	lb/hr	None	0%	17.73	17.73	2.67	2.67	1.86	1.86
MN13a	Water Truck Use (Inside the Pit)	WtrTrksHD	3-05-020-99	F	4	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTI	90%	61.66	6.17	15.84	1.58	1.58	0.16
MN13b	Water Truck Use (Outside the Pit)	WtrTrksHD	3-05-020-99	F	13	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTO	90%	216.90	21.69	55.73	5.57	5.57	0.56
MN14	Grader Use	GradersY1	3-05-020-99	F	13	VMT	2.05	0.71	0.06	lb/VMT	None	0%	26.88	26.88	9.35	9.35	0.83	0.83
MN15a	Support Vehicle Use on Unpaved Roads (Inside the Pit)	SupVehUY1H	3-03-999-99	F	31	VMT	8.89	2.29	0.23	lb/VMT	HaulRdUI	90%	279.67	27.97	71.86	7.19	7.19	0.72
MN15b	Support Vehicle Use on Unpaved Roads (Outside the Pit)	SupVehUY1H	3-03-999-99	F	31	VMT	8.89	2.29	0.23	lb/VMT	HaulRdUO	90%	279.67	27.97	71.86	7.19	7.19	0.72
M16a	Support Vehicle Use on the Paved Entrance Road (within the process area boundary)	SupVehPEY1H	3-03-999-99	F	25	VMT	0.05	0.01	0.003	lb/VMT	None	0%	1.35	1.35	0.27	0.27	0.07	0.07
M16b	Support Vehicle Use on the Paved Entrance Road (outside of the process area boundary)	SupVehPEY1H	3-03-999-99	F	110	VMT	0.05	0.01	0.003	lb/VMT	None	0%	5.87	5.87	1.17	1.17	0.29	0.29
M16c	Support Vehicle Use on Paved Industrial Roads	SupVehPIY1H	3-03-999-99	F	39	VMT	1.23	0.25	0.06	lb/VMT	None	0%	47.33	47.33	9.47	9.47	2.32	2.32
Primary Crushing, Conveying, Coarse Ore Storage, and Reclaim Conveying																		
PC01	Wind Erosion of the Run of Mine Stockpile	WindROM	3-03-888-01	F	26	acres	0.21	0.11	0.02	ton/acre-yr	None	0%	1.24	1.24	0.62	0.62	0.09	0.09
PC02	Unloading to Primary Crusher Dump Hopper (H-CDp) from Haul Trucks or Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	6,950	tons	0.001	0.0006	0.00009	lb/ton	WSpry	82.5%	8.26	1.45	3.91	0.68	0.59	0.10
PC03	Primary Crusher (PCr)	CrushP	3-03-024-05	NF	6,950	tons	0.02	0.009	0.002	lb/ton	CADC	100%	139.00	0	62.55	0	11.58	0
PC04	Primary Crusher (PCr) to Crusher Discharge Hopper (H-CDs)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
PC05	Crusher Discharge Hopper (H-CDs) to Crusher Discharge Feeder (F-CD)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	1.08	0	0.51	0	0.08	0
PC06	Crusher Discharge Feeder (F-CD) to Stockpile Feed Conveyor No. 1 (CV-SF1)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	1.08	0	0.51	0	0.08	0

Table H.6 Maximum Hourly Particulate Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 1	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (lb/hr) - Year 1		PM_{10} Emissions (lb/hr) - Year 1		$PM_{2.5}$ Emissions (lb/hr) - Year 1	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
PC07	Stockpile Feed Conveyor No. 1 (CV-SF1) to Stockpile Feed Conveyor No. 2 (CV-SF2)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SFCDC	100%	1.08	0	0.51	0	0.08	0
PC08	Stockpile Feed Conveyor No. 2 (CV-SF2) to Covered Coarse Ore Stockpile	TrStnPrt	3-03-024-08	F	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	1.08	0	0.51	0	0.08	0
PC09	Wind Erosion of the Coarse Ore Stockpile	WindCvd	3-03-888-01	F	5	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
PC10	Coarse Ore Stockpile to Reclaim Feeders (F-R1/R4)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	UndrGrd [a]	100%	0	0	0	0	0	0
PC11	Reclaim Feeders (F-R1/R4) to Reclaim Conveyor (CV-R)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	1.08	0	0.51	0	0.08	0
PC12	Reclaim Conveyor (CV-R) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	1.08	0	0.51	0	0.08	0
PC13	Pebble Conveyor No. 3 (CV-Pb3) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.28	0	0.13	0	0.02	0
PC14	SAG Mill Feed Conveyor (CV-SMF) to SAG Mill (M-SAG)	TrStnPrt	3-03-024-08	NF	8,721	tons	0.0002	0.00007	0.00001	lb/ton	Water [a]	100%	0	0	0	0	0	0
Milling																		
M01	SAG Mill (M-SAG)	CrushS	3-03-024-06	NF	8,726	tons	0.05	0.02	0.004	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M02	SAG Mill (M-SAG) to Trommel Screen (Sn-T)	TrStnPrt	3-03-024-08	NF	8,726	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M03	Trommel Screen (Sn-T)	Screen	3-05-020-02	NF	8,726	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M04	Trommel Screen (Sn-T) to Pebble Conveyor No. 1 (CV-Pb1)	TrStnPrt	3-03-024-08	NF	1,851	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M05	Pebble Conveyor No. 1 (CV-Pb1) to Pebble Wash Screen (Sn-PbW)	TrStnPrt	3-03-024-08	NF	1,851	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M06	Pebble Wash Screen (Sn-PbW)	Screen	3-05-020-02	NF	1,851	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M07	Pebble Wash Screen (Sn-PbW) to Pebble Conveyor No. 2	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M08	Pebble Conveyor No. 2 (CV-Pb2) to SAG Oversize Surge Bin (B-SAGOS)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.28	0	0.13	0	0.02	0
M09	SAG Oversize Surge Bin (B-SAGOS) to Pebble Crusher Feeder (F-PbC)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.28	0	0.13	0	0.02	0
M10	Pebble Crusher Feeder (F-PbC) to Pebble Crusher (PbC)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M11	Pebble Crusher (PbC)	CrushT	3-03-024-07	NF	1,771	tons	0.06	0.02	0.00	lb/ton	PCADC	100%	106.27	0	35.42	0	6.56	0
M12	Pebble Crusher (PbC) to Pebble Conveyor No. 3 (CV-Pb3)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.28	0	0.13	0	0.02	0
Copper Concentrate Dewatering and Stacking																		
CCD01	Copper Concentrate Filters (Ft-CC1/CC4) to Copper Concentrate Conveyor (CV-CC)	TrCuCncPrt	3-03-024-08	NF	138	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
CCD02	Copper Concentrate Conveyor (CV-CC) to Copper Concentrate Loadout Stockpile	TrCuCncPrt	3-03-024-08	F	138	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.006	0	0.003	0	0.0004	0
CCD03	Wind Erosion of Copper Concentrate Loadout Stockpile	WindCvd	3-03-888-01	F	1.17	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
CCD04	Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loaders	TrCuCncPrt	3-03-024-08	F	138	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.006	0	0.003	0	0.0004	0
Molybdenum Dewatering and Packaging																		
MD01	Molybdenum Concentrate Filter (Ft-MC) to Molybdenum Concentrate Dryer (D-MC)	TrMlyCncPrt	3-03-024-08	NF	1.9	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD02	Molybdenum Concentrate Dryer	MolyDry	3-03-024-11	NF	1.9	tons	19.70	12.00	5.91	lb/ton	MS/EP	100%	37.43	0	22.80	0	11.23	0
MD03	Molybdenum Concentrate Dryer (D-MC) to Molybdenum Concentrate Bin (B-MC)	DTrMlyCncPrt	3-03-024-08	NF	1.9	tons	0.00004	0.00002	0.000003	lb/ton	MDC	100%	0.00008	0	0.00004	0	0.000006	0
MD04	Molybdenum Concentrate Bin (B-MC) to Molybdenum Concentrate Hopper (H-MC)	DTrMlyCnc	3-03-024-08	NF	1.9	tons	0.0003	0.0002	0.00002	lb/ton	None	0%	0.0006	0.0006	0.0003	0.0003	0.00004	0.00004

Table H.6 Maximum Hourly Particulate Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 1	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (lb/hr) - Year 1		PM_{10} Emissions (lb/hr) - Year 1		$PM_{2.5}$ Emissions (lb/hr) - Year 1	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
MD05	Molybdenum Concentrate Hopper (H-MC) to Molybdenum Concentrate Conveyor (CV-MC)	DTrMlyCncPrt	3-03-024-08	NF	1.9	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD06	Molybdenum Concentrate Conveyor (CV-MC) to Molybdenum Packaging and Weigh System (MPS)	DTrMlyCnc	3-03-024-08	NF	1.9	tons	0.0003	0.0002	0.00002	lb/ton	MDC	100%	0.0006	0	0.0003	0	0.00004	0
Tailings Dewatering and Placement																		
TDS01	Tailings Filters (Ft-T1/T14) to Tailings Belt Feeders (F-T1/T14)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS02	Tailings Belt Feeders (F-T1/T14) to Fixed Tailings Conveyor No. 1 (CV-F1)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS03	Fixed Tailings Conveyor No. 1 (CV-F1) to Fixed Tailings Conveyor No. 2 (CV-F2)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS04	Fixed Tailings Conveyor No. 2 (CV-F2) to Fixed Tailings Conveyor No. 3 (CV-F3)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.26	0.26	0.12	0.12	0.02	0.02
TDS05	Fixed Tailings Conveyor No. 3 (CV-F3) to Relocatable Conveyor (CV-R1)	FiltTailPrt	3-03-024-08	F	10,722	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.26	0.26	0.12	0.12	0.02	0.02
TDS06	Relocatable Conveyor (CV-R1) to Shiftable Conveyor (CV-S1)	FiltTailPrt	3-03-024-08	F	10,722	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.26	0.26	0.12	0.12	0.02	0.02
TDS07	Shiftable Conveyor (CV-S1) to Belt Wagon Conveyor (CV-BW1)	FiltTail	3-03-024-08	F	10,722	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	2.00	2.00	0.95	0.95	0.14	0.14
TDS08	Belt Wagon Conveyor (CV-BW1) to Spreader Crawler Mounted Conveyor (CV-SP1)	FiltTail	3-03-024-08	F	10,722	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	2.00	2.00	0.95	0.95	0.14	0.14
TDS09	Spreader Crawler Mounted Conveyor (CV-SP1) to Tailings Storage	FiltTail	3-03-024-08	F	10,722	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	2.00	2.00	0.95	0.95	0.14	0.14
TDS10	Wind Erosion of Tailings Storage	TailStrg	3-03-888-01	F	1,500	acres	0.02	0.01	0.002	ton/acre-yr	None	0%	6.90	6.90	3.45	3.45	0.52	0.52
Fuel Burning Equipment																		
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	1	hours	3.30	2.30	1.54	lb/1000 gal	None	0%	0.14	0.14	0.10	0.10	0.07	0.07
					6.0	MMBtu/hr												
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.44	0.44	0.44	0.44	0.44	0.44
					1,000	kW												
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.44	0.44	0.44	0.44	0.44	0.44
					1,000	kW												
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.33	0.33	0.33	0.33	0.33	0.33
					750	kW												
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.33	0.33	0.33	0.33	0.33	0.33
					750	kW												
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	1	hours	0.40	0.40	0.40	g/kW-hr	None	0%	0.04	0.04	0.04	0.04	0.04	0.04
					50	kW												
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.13	0.13	0.13	0.13	0.13	0.13
					400	hp												
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.13	0.13	0.13	0.13	0.13	0.13
					400	hp												

Table H.6 Maximum Hourly Particulate Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 1	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (lb/hr) - Year 1		PM_{10} Emissions (lb/hr) - Year 1		$PM_{2.5}$ Emissions (lb/hr) - Year 1	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Miscellaneous Sources																		
MS01	Transfer of Lime to the Lime Storage Bin (B-L)	LimeLd	3-05-016-26	NF	7.77	tons	0.61	0.29	0.04	lb/ton	BPLSV [a]	90%	0.47	0.47	0.22	0.22	0.03	0.03
MS02	Lime Storage Bin (B-L) to Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2)	ReagTr	3-03-024-04	NF	7.77	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS03	Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2) to Lime Slakers 1 and 2 (T-LS1/2)	ReagTr	3-03-024-04	NF	7.77	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS04	Lime Slaking in Lime Slakers 1 and 2 (T-LS1/2)	LimeSlk	3-05-016-09	NF	7.77	tons	8.00	8.00	8.00	lb/ton	LSS	99%	62.14	0.62	62.14	0.62	62.14	0.62
MS05	Transfer of Sodium Metasilicate to the Sodium Metasilicate Storage Bin (B-SM)	ReagTr	3-03-024-04	NF	0.41	tons	0.008	0.004	0.0006	lb/ton	SMSV [a]	90%	0.0003	0.0003	0.0002	0.0002	0.00002	0.00002
MS06	Transfer of Flocculant from Supersacks to Flocculant Storage Bins (B-F1/F2)	ReagTr	3-03-024-04	NF	0.15	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.001	0.001	0.0006	0.0006	0.00009	0.00009
MS07	Transfer of Guar from Bags to Guar Feeder (F-Gu)	ReagTr	3-03-024-04	NF	0.02	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.0002	0.0002	0.00008	0.00008	0.00001	0.00001
MS08	Transfer of Granular Cobalt Sulfate from Bags to Cobalt Sulfate Feeder (F-CoS)	ReagTr	3-03-024-04	NF	0.0008	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.000007	0.000007	0.000003	0.000003	0.0000005	0.0000005
Particulate Matter Pollution Control Equipment with Emission Limits																		
PCL01	Crushing Area Dust Collector (PC-CADC)	CADC	none	NF	1	hours	1.42	0.64	0.12	lb/hr	--	--	--	1.42	--	0.64	--	0.12
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	SARTDC	none	NF	1	hours	3.11	1.47	0.22	lb/hr	--	--	--	3.11	--	1.47	--	0.22
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	SFCDC	none	NF	1	hours	0.76	0.36	0.05	lb/hr	--	--	--	0.76	--	0.36	--	0.05
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	PCADC	none	NF	1	hours	0.96	0.32	0.06	lb/hr	--	--	--	0.96	--	0.32	--	0.06
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	CCDC	none	NF	1	hours	3.76	1.78	0.27	lb/hr	--	--	--	3.76	--	1.78	--	0.27
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	CCDC	none	NF	1	hours	3.76	1.78	0.27	lb/hr	--	--	--	3.76	--	1.78	--	0.27
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	MS/EP	none	NF	1	hours	0.015	0.014	0.013	lb/hr	--	--	--	0.02	--	0.01	--	0.01
PCL08	Molybdenum Dust Collector (PC-MDC)	MDC	none	NF	1	hours	0.112	0.053	0.008	lb/hr	--	--	--	0.11	--	0.05	--	0.008
PCL09	Laboratory Dust Collector 1 (PC-L1)	LDC	none	NF	497,410	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.58	--	0.36	--	0.17
PCL10	Laboratory Dust Collector 2 (PC-L2)	LDC	none	NF	497,410	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.58	--	0.36	--	0.17
PCL11	Laboratory Dust Collector 3 (PC-L3)	LDC	none	NF	497,410	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.58	--	0.36	--	0.17
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	SFDC	none	NF	1	hours	0.97	0.46	0.07	lb/hr	--	--	--	0.97	--	0.46	--	0.07
Total Non-Fugitive Emissions (excluding tailpipe emissions):													**354.09**	**19.98**	**188.29**	**10.86**	**93.95**	**4.20**
Total Fugitive Emissions (excluding tailpipe emissions):													**6,859.61**	**1,200.35**	**1,865.13**	**409.26**	**186.52**	**40.74**
Total Emissions (excluding tailpipe emissions):													**7,213.70**	**1,220.34**	**2,053.42**	**420.12**	**280.47**	**44.94**
Tailpipe Emissions (see Tables H.10-H.12):													**8.59**	**8.59**	**8.59**	**8.59**	**8.59**	**8.59**

[a] The control efficiency for this emission unit is inherent to the process. Therefore, the control efficiency is applied to both uncontrolled and controlled emissions.

Table H.7 Annual Gaseous Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 1	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 1								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
Mining																										
MN02	Blasting	Blast	3-05-020-09	F	18,980	tons ANFO	67.00	17.00	2.00	0	0	566	0.02	0.005	--	--	lb/tons ANFO	635.83	161.33	18.98	0	0	5,375.60	0.22	0.04	--
Solvent Extraction and Electrowinning																										
SXE01	Solvent Extraction	SX	4-90-001-99	F	8,760	hours	0	0	0	9.43E-05	0	0	0	0	Benzene	3.37E-07	lb/hr-ft^2	0	0	0	3.77	0	0	0	0	1.35E-02
	4 Primary Mix Tanks (7.75' D x 9.75' H each)	4 @ 47.2 = 188.7	ft^2		9,132.9	ft^2	Total Surface Area of Solvent Extraction								Toluene	4.82E-06	lb/hr-ft^2									1.93E-01
	4 Secondary Mix Tanks (9.5' D x 9.75' H each)	4 @ 70.9 = 283.5	ft^2												Ethylbenzene	2.05E-05	lb/hr-ft^2									8.21E-01
	3 Tertiary Mix Tanks (9.5' D x 9.75' H each)	3 @ 70.9 = 212.6	ft^2												Xylenes	2.80E-05	lb/hr-ft^2									1.12E+00
	4 Extraction Settlers (64' L x 33' W x 3.33' H each)	4 @ 2,112 = 8,448	ft^2												Others (including Hexane)	2.94E-05	lb/hr-ft^2									1.18E+00
SXE02	Electrowinning Commercial Cells (EWCC)	EW	none	NF	8,760	hours	0	0	0	0	1.57E-04	0	0	0	Cobalt Compounds	2.36E-08	lb/hr-ft^2	0	0	0	0	0.02	0	0	0	2.72E-06
	Controlled by Cell Ventilation Scrubbers (PC-EWCVS1/EWCVS3)				2,640	ft^2																				
					99	Control Efficiency (%)																				
Fuel Burning Equipment																										
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	8,760	hours	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	POM	3.30E-03	lb/1000 gal	0.96	3.84	0.04	0.04	0	4,453.51	0.18	0.04	6.33E-04
					6.0	MMBtu/hr									Formaldehyde	6.10E-02	lb/1000 gal									1.17E-02
															Arsenic	4.00	lb/10^{12} Btu									1.05E-04
															Beryllium	3.00	lb/10^{12} Btu									7.88E-05
															Cadmium	3.00	lb/10^{12} Btu									7.88E-05
															Chromium	3.00	lb/10^{12} Btu									7.88E-05
															Lead	9.00	lb/10^{12} Btu									2.37E-04
															Mercury	3.00	lb/10^{12} Btu									7.88E-05
															Manganese	6.00	lb/10^{12} Btu									1.58E-04
															Nickel	3.00	lb/10^{12} Btu									7.88E-05
															Selenium	15.00	lb/10^{12} Btu									3.94E-04
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.93	3.31	0.004	0.22	0	382.65	0.02	0.003	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									1.82E-03
															Toluene	2.81E-04	lb/MMBtu									6.59E-04
															Xylenes	1.93E-04	lb/MMBtu									4.53E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.85E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									5.91E-05
															Acrolein	7.88E-06	lb/MMBtu									1.85E-05
															Naphthalene	1.30E-04	lb/MMBtu									3.05E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									2.17E-05
															Acenaphthene	4.68E-06	lb/MMBtu									1.10E-05
															Fluorene	1.28E-05	lb/MMBtu									3.00E-05
															Phenanthrene	4.08E-05	lb/MMBtu									9.57E-05
															Anthracene	1.23E-06	lb/MMBtu									2.89E-06
															Fluoranthene	4.03E-06	lb/MMBtu									9.46E-06
															Pyrene	3.71E-06	lb/MMBtu									8.71E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.46E-06
															Chrysene	1.53E-06	lb/MMBtu									3.59E-06

Table H.7 Annual Gaseous Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 1	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 1								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									2.60E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									5.12E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									6.03E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									9.72E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									8.12E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									1.30E-06
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.93	3.31	0.004	0.22	0	382.65	0.02	0.003	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									1.82E-03
															Toluene	2.81E-04	lb/MMBtu									6.59E-04
															Xylenes	1.93E-04	lb/MMBtu									4.53E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.85E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									5.91E-05
															Acrolein	7.88E-06	lb/MMBtu									1.85E-05
															Naphthalene	1.30E-04	lb/MMBtu									3.05E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									2.17E-05
															Acenaphthene	4.68E-06	lb/MMBtu									1.10E-05
															Fluorene	1.28E-05	lb/MMBtu									3.00E-05
															Phenanthrene	4.08E-05	lb/MMBtu									9.57E-05
															Anthracene	1.23E-06	lb/MMBtu									2.89E-06
															Fluoranthene	4.03E-06	lb/MMBtu									9.46E-06
															Pyrene	3.71E-06	lb/MMBtu									8.71E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.46E-06
															Chrysene	1.53E-06	lb/MMBtu									3.59E-06
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									2.60E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									5.12E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									6.03E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									9.72E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									8.12E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									1.30E-06
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.45	2.48	0.003	0.17	0	286.99	0.01	0.002	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									1.37E-03
															Toluene	2.81E-04	lb/MMBtu									4.95E-04
															Xylenes	1.93E-04	lb/MMBtu									3.40E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.39E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									4.44E-05
															Acrolein	7.88E-06	lb/MMBtu									1.39E-05
															Naphthalene	1.30E-04	lb/MMBtu									2.29E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									1.62E-05
															Acenaphthene	4.68E-06	lb/MMBtu									8.24E-06
															Fluorene	1.28E-05	lb/MMBtu									2.25E-05

Table H.7 Annual Gaseous Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 1	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 1								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Phenanthrene	4.08E-05	lb/MMBtu									7.18E-05
															Anthracene	1.23E-06	lb/MMBtu									2.16E-06
															Fluoranthene	4.03E-06	lb/MMBtu									7.09E-06
															Pyrene	3.71E-06	lb/MMBtu									6.53E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.09E-06
															Chrysene	1.53E-06	lb/MMBtu									2.69E-06
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.95E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									3.84E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									4.52E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									7.29E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									6.09E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									9.79E-07
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.45	2.48	0.003	0.17	0	286.99	0.01	0.002	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									1.37E-03
															Toluene	2.81E-04	lb/MMBtu									4.95E-04
															Xylenes	1.93E-04	lb/MMBtu									3.40E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.39E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									4.44E-05
															Acrolein	7.88E-06	lb/MMBtu									1.39E-05
															Naphthalene	1.30E-04	lb/MMBtu									2.29E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									1.62E-05
															Acenaphthene	4.68E-06	lb/MMBtu									8.24E-06
															Fluorene	1.28E-05	lb/MMBtu									2.25E-05
															Phenanthrene	4.08E-05	lb/MMBtu									7.18E-05
															Anthracene	1.23E-06	lb/MMBtu									2.16E-06
															Fluoranthene	4.03E-06	lb/MMBtu									7.09E-06
															Pyrene	3.71E-06	lb/MMBtu									6.53E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.09E-06
															Chrysene	1.53E-06	lb/MMBtu									2.69E-06
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.95E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									3.84E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									4.52E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									7.29E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									6.09E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									9.79E-07
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	500	hours	5.00	4.43	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.14	0.12	0.0002	0.007	0	19.13	0.0008	0.0002	--
					50	kW									Benzene	9.33E-04	lb/MMBtu									1.09E-04
															Toluene	4.09E-04	lb/MMBtu									4.80E-05
															Xylenes	2.85E-04	lb/MMBtu									3.34E-05
															1,3-Butadiene	3.91E-05	lb/MMBtu									4.59E-06

Table H.7 Annual Gaseous Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 1	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 1								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Formaldehyde	1.18E-03	lb/MMBtu									1.38E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									9.00E-05
															Acrolein	9.25E-05	lb/MMBtu									1.09E-05
															Naphthalene	8.48E-05	lb/MMBtu									9.95E-06
															Acenaphthylene	5.06E-06	lb/MMBtu									5.94E-07
															Acenaphthene	1.42E-06	lb/MMBtu									1.67E-07
															Fluorene	2.92E-05	lb/MMBtu									3.43E-06
															Phenanthrene	2.94E-05	lb/MMBtu									3.45E-06
															Anthracene	1.87E-06	lb/MMBtu									2.19E-07
															Fluoranthene	7.61E-06	lb/MMBtu									8.93E-07
															Pyrene	4.78E-06	lb/MMBtu									5.61E-07
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									1.97E-07
															Chrysene	3.53E-07	lb/MMBtu									4.14E-08
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									1.16E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									1.82E-08
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									2.21E-08
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									4.40E-08
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									6.84E-08
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									5.74E-08
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	500	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.58	0.61	0.001	0.04	0	114.14	0.005	0.0009	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									6.53E-04
															Toluene	4.09E-04	lb/MMBtu									2.86E-04
															Xylenes	2.85E-04	lb/MMBtu									2.00E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									2.74E-05
															Formaldehyde	1.18E-03	lb/MMBtu									8.26E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									5.37E-04
															Acrolein	9.25E-05	lb/MMBtu									6.48E-05
															Naphthalene	8.48E-05	lb/MMBtu									5.94E-05
															Acenaphthylene	5.06E-06	lb/MMBtu									3.54E-06
															Acenaphthene	1.42E-06	lb/MMBtu									9.94E-07
															Fluorene	2.92E-05	lb/MMBtu									2.04E-05
															Phenanthrene	2.94E-05	lb/MMBtu									2.06E-05
															Anthracene	1.87E-06	lb/MMBtu									1.31E-06
															Fluoranthene	7.61E-06	lb/MMBtu									5.33E-06
															Pyrene	4.78E-06	lb/MMBtu									3.35E-06
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									1.18E-06
															Chrysene	3.53E-07	lb/MMBtu									2.47E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									6.94E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									1.09E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									1.32E-07

Table H.7 Annual Gaseous Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 1	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 1								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									2.63E-07
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									4.08E-07
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									3.42E-07
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	500	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.58	0.61	0.001	0.04	0	114.14	0.005	0.0009	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									6.53E-04
															Toluene	4.09E-04	lb/MMBtu									2.86E-04
															Xylenes	2.85E-04	lb/MMBtu									2.00E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									2.74E-05
															Formaldehyde	1.18E-03	lb/MMBtu									8.26E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									5.37E-04
															Acrolein	9.25E-05	lb/MMBtu									6.48E-05
															Naphthalene	8.48E-05	lb/MMBtu									5.94E-05
															Acenaphthylene	5.06E-06	lb/MMBtu									3.54E-06
															Acenaphthene	1.42E-06	lb/MMBtu									9.94E-07
															Fluorene	2.92E-05	lb/MMBtu									2.04E-05
															Phenanthrene	2.94E-05	lb/MMBtu									2.06E-05
															Anthracene	1.87E-06	lb/MMBtu									1.31E-06
															Fluoranthene	7.61E-06	lb/MMBtu									5.33E-06
															Pyrene	4.78E-06	lb/MMBtu									3.35E-06
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									1.18E-06
															Chrysene	3.53E-07	lb/MMBtu									2.47E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									6.94E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									1.09E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									1.32E-07
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									2.63E-07
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									4.08E-07
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									3.42E-07
Tanks																										
T01	C7 Distribution Tank (T-C7D)	C7DT	4-03-010-19	NF	8,760	hours	0	0	0	1.08E-01	0	0	0	0	--	--	lb/hr	0	0	0	0.47	0	0	0	0	--
T02	MIBC Storage Tank (T-MIBCS)	MST	4-90-999-98	NF	8,760	hours	0	0	0	3.53E-03	0	0	0	0	--	--	lb/hr	0	0	0	0.02	0	0	0	0	--
T03	Diesel Fuel Storage Tank - Heavy Vehicles 1 (T-DFS-HV1)	DFSTHV	4-03-010-19	NF	8,760	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.06	0	0	0	0	2.50E-05
															Benzene	2.74E-05	lb/hr									1.20E-04
															Toluene	3.18E-04	lb/hr									1.40E-03
															Ethylbenzene	4.45E-05	lb/hr									1.95E-04
															m-Xylene	8.23E-04	lb/hr									3.61E-03
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									2.96E-03
T04	Diesel Fuel Storage Tank - Heavy Vehicles 2 (T-DFS-HV2)	DFSTHV	4-03-010-19	NF	8,760	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.06	0	0	0	0	2.50E-05
															Benzene	2.74E-05	lb/hr									1.20E-04
															Toluene	3.18E-04	lb/hr									1.40E-03
															Ethylbenzene	4.45E-05	lb/hr									1.95E-04

Table H.7 Annual Gaseous Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 1	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 1								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															m-Xylene	8.23E-04	lb/hr									3.61E-03
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									2.96E-03
Total Non-Fugitive Emissions (excluding tailpipe emissions):																		**9.00**	**16.76**	**0.06**	**1.51**	**0.02**	**6,040.20**	**0.25**	**0.05**	**0.05**
Total Fugitive Emissions (excluding tailpipe emissions):																		**635.83**	**161.33**	**18.98**	**3.77**	**0**	**5,375.60**	**0.22**	**0.04**	**3.32**
Total Emissions (excluding tailpipe emissions):																		**644.83**	**178.09**	**19.04**	**5.28**	**0.02**	**11,415.81**	**0.46**	**0.09**	**3.37**
Tailpipe Emissions (see Tables H.13-H.17):																		**831.98**	**1,016.69**	**1.54**	**72.84**	**--**	**163,786.04**	**--**	**--**	**--**

[a] CO_2e emissions are calculcated by summing the individual greenhouse gas emissions multiplied by their global warming potential (GWP). GWP of CO_2 = 1, GWP of CH_4 = 21, GWP of N_2O = 310.

[b] All HAP emissions are included in the facility-wide potential to emit, regardless of if they are fugitive or non-fugitive emissions.

Table H.8 Maximum Daily Gaseous Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 1	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 1								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
Mining																										
MN02	Blasting	Blast	3-05-020-09	F	52	tons ANFO	67.00	17.00	2.00	0	0	566	0.02	0.005	--	--	lb/tons ANFO	1.74	0.44	0.05	0	0	14.73	0.0006	0.0001	--
Solvent Extraction and Electrowinning																										
SXE01	Solvent Extraction	SX	4-90-001-99	F	24	hours	0	0	0	9.43E-05	0	0	0	0	Benzene	3.37E-07	lb/hr-ft^2	0	0	0	0.01	0	0	0	0	3.69E-05
	4 Primary Mix Tanks (7.75' D x 9.75' H each)	4 @ 47.2 = 188.7	ft^2		9,132.9	ft^2	Total Surface Area of Solvent Extraction								Toluene	4.82E-06	lb/hr-ft^2									5.28E-04
	4 Secondary Mix Tanks (9.5' D x 9.75' H each)	4 @ 70.9 = 283.5	ft^2												Ethylbenzene	2.05E-05	lb/hr-ft^2									2.25E-03
	3 Tertiary Mix Tanks (9.5' D x 9.75' H each)	3 @ 70.9 = 212.6	ft^2												Xylenes	2.80E-05	lb/hr-ft^2									3.07E-03
	4 Extraction Settlers (64' L x 33' W x 3.33' H each)	4 @ 2,112 = 8,448	ft^2												Others (including Hexane)	2.94E-05	lb/hr-ft^2									3.22E-03
SXE02	Electrowinning Commercial Cells (EWCC)	EW	none	NF	24	hours	0	0	0	0	1.57E-04	0	0	0	Cobalt Compounds	2.36E-08	lb/hr-ft^2	0	0	0	0	0.00005	0	0	0	7.46E-09
	Controlled by Cell Ventilation Scrubbers (PC-EWCVS1/EWCVS3)				2,640	ft^2																				
					99	Control Efficiency (%)																				
Fuel Burning Equipment																										
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	24	hours	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	POM	3.30E-03	lb/1000 gal	0.003	0.01	0.0001	0.0001	0	12.20	0.0005	0.0001	1.73E-06
					6.0	MMBtu/hr									Formaldehyde	6.10E-02	lb/1000 gal									3.21E-05
															Arsenic	4.00	lb/10^{12} Btu									2.88E-07
															Beryllium	3.00	lb/10^{12} Btu									2.16E-07
															Cadmium	3.00	lb/10^{12} Btu									2.16E-07
															Chromium	3.00	lb/10^{12} Btu									2.16E-07
															Lead	9.00	lb/10^{12} Btu									6.48E-07
															Mercury	3.00	lb/10^{12} Btu									2.16E-07
															Manganese	6.00	lb/10^{12} Btu									4.32E-07
															Nickel	3.00	lb/10^{12} Btu									2.16E-07
															Selenium	15.00	lb/10^{12} Btu									1.08E-06
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.09	0.16	0.0002	0.01	0	18.37	0.0007	0.0001	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									8.74E-05
															Toluene	2.81E-04	lb/MMBtu									3.17E-05
															Xylenes	1.93E-04	lb/MMBtu									2.17E-05
															Formaldehyde	7.89E-05	lb/MMBtu									8.89E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.84E-06
															Acrolein	7.88E-06	lb/MMBtu									8.88E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.46E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									1.04E-06
															Acenaphthene	4.68E-06	lb/MMBtu									5.27E-07
															Fluorene	1.28E-05	lb/MMBtu									1.44E-06
															Phenanthrene	4.08E-05	lb/MMBtu									4.60E-06
															Anthracene	1.23E-06	lb/MMBtu									1.39E-07
															Fluoranthene	4.03E-06	lb/MMBtu									4.54E-07
															Pyrene	3.71E-06	lb/MMBtu									4.18E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									7.01E-08
															Chrysene	1.53E-06	lb/MMBtu									1.72E-07

Table H.8 Maximum Daily Gaseous Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 1	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 1								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.25E-07
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.46E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.89E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									4.66E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.90E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									6.26E-08
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.09	0.16	0.0002	0.01	0	18.37	0.0007	0.0001	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									8.74E-05
															Toluene	2.81E-04	lb/MMBtu									3.17E-05
															Xylenes	1.93E-04	lb/MMBtu									2.17E-05
															Formaldehyde	7.89E-05	lb/MMBtu									8.89E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.84E-06
															Acrolein	7.88E-06	lb/MMBtu									8.88E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.46E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									1.04E-06
															Acenaphthene	4.68E-06	lb/MMBtu									5.27E-07
															Fluorene	1.28E-05	lb/MMBtu									1.44E-06
															Phenanthrene	4.08E-05	lb/MMBtu									4.60E-06
															Anthracene	1.23E-06	lb/MMBtu									1.39E-07
															Fluoranthene	4.03E-06	lb/MMBtu									4.54E-07
															Pyrene	3.71E-06	lb/MMBtu									4.18E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									7.01E-08
															Chrysene	1.53E-06	lb/MMBtu									1.72E-07
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.25E-07
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.46E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.89E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									4.66E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.90E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									6.26E-08
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.07	0.12	0.0001	0.008	0	13.78	0.0006	0.0001	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									6.56E-05
															Toluene	2.81E-04	lb/MMBtu									2.37E-05
															Xylenes	1.93E-04	lb/MMBtu									1.63E-05
															Formaldehyde	7.89E-05	lb/MMBtu									6.67E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.13E-06
															Acrolein	7.88E-06	lb/MMBtu									6.66E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.10E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									7.80E-07
															Acenaphthene	4.68E-06	lb/MMBtu									3.95E-07
															Fluorene	1.28E-05	lb/MMBtu									1.08E-06

Table H.8 Maximum Daily Gaseous Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 1	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 1								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Phenanthrene	4.08E-05	lb/MMBtu									3.45E-06
															Anthracene	1.23E-06	lb/MMBtu									1.04E-07
															Fluoranthene	4.03E-06	lb/MMBtu									3.40E-07
															Pyrene	3.71E-06	lb/MMBtu									3.13E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.25E-08
															Chrysene	1.53E-06	lb/MMBtu									1.29E-07
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									9.38E-08
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.84E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.17E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.50E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.92E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									4.70E-08
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.07	0.12	0.0001	0.008	0	13.78	0.0006	0.0001	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									6.56E-05
															Toluene	2.81E-04	lb/MMBtu									2.37E-05
															Xylenes	1.93E-04	lb/MMBtu									1.63E-05
															Formaldehyde	7.89E-05	lb/MMBtu									6.67E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.13E-06
															Acrolein	7.88E-06	lb/MMBtu									6.66E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.10E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									7.80E-07
															Acenaphthene	4.68E-06	lb/MMBtu									3.95E-07
															Fluorene	1.28E-05	lb/MMBtu									1.08E-06
															Phenanthrene	4.08E-05	lb/MMBtu									3.45E-06
															Anthracene	1.23E-06	lb/MMBtu									1.04E-07
															Fluoranthene	4.03E-06	lb/MMBtu									3.40E-07
															Pyrene	3.71E-06	lb/MMBtu									3.13E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.25E-08
															Chrysene	1.53E-06	lb/MMBtu									1.29E-07
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									9.38E-08
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.84E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.17E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.50E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.92E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									4.70E-08
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	24	hours	5.00	4.43	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.007	0.006	0.000009	0.0004	0	0.92	0.00004	0.000007	--
					50	kW									Benzene	9.33E-04	lb/MMBtu									5.25E-06
															Toluene	4.09E-04	lb/MMBtu									2.30E-06
															Xylenes	2.85E-04	lb/MMBtu									1.61E-06
															1,3-Butadiene	3.91E-05	lb/MMBtu									2.20E-07

Table H.8 Maximum Daily Gaseous Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 1	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 1								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Formaldehyde	1.18E-03	lb/MMBtu									6.65E-06
															Acetaldehyde	7.67E-04	lb/MMBtu									4.32E-06
															Acrolein	9.25E-05	lb/MMBtu									5.21E-07
															Naphthalene	8.48E-05	lb/MMBtu									4.78E-07
															Acenaphthylene	5.06E-06	lb/MMBtu									2.85E-08
															Acenaphthene	1.42E-06	lb/MMBtu									8.00E-09
															Fluorene	2.92E-05	lb/MMBtu									1.64E-07
															Phenanthrene	2.94E-05	lb/MMBtu									1.66E-07
															Anthracene	1.87E-06	lb/MMBtu									1.05E-08
															Fluoranthene	7.61E-06	lb/MMBtu									4.29E-08
															Pyrene	4.78E-06	lb/MMBtu									2.69E-08
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									9.46E-09
															Chrysene	3.53E-07	lb/MMBtu									1.99E-09
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									5.58E-10
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									8.73E-10
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									1.06E-09
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									2.11E-09
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									3.28E-09
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									2.75E-09
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	24	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.03	0.03	0.00005	0.002	0	5.48	0.0002	0.00004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									3.13E-05
															Toluene	4.09E-04	lb/MMBtu									1.37E-05
															Xylenes	2.85E-04	lb/MMBtu									9.58E-06
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.31E-06
															Formaldehyde	1.18E-03	lb/MMBtu									3.96E-05
															Acetaldehyde	7.67E-04	lb/MMBtu									2.58E-05
															Acrolein	9.25E-05	lb/MMBtu									3.11E-06
															Naphthalene	8.48E-05	lb/MMBtu									2.85E-06
															Acenaphthylene	5.06E-06	lb/MMBtu									1.70E-07
															Acenaphthene	1.42E-06	lb/MMBtu									4.77E-08
															Fluorene	2.92E-05	lb/MMBtu									9.81E-07
															Phenanthrene	2.94E-05	lb/MMBtu									9.88E-07
															Anthracene	1.87E-06	lb/MMBtu									6.28E-08
															Fluoranthene	7.61E-06	lb/MMBtu									2.56E-07
															Pyrene	4.78E-06	lb/MMBtu									1.61E-07
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									5.64E-08
															Chrysene	3.53E-07	lb/MMBtu									1.19E-08
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									3.33E-09
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									5.21E-09
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									6.32E-09

Table H.8 Maximum Daily Gaseous Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 1	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 1								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.26E-08
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.96E-08
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.64E-08
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	24	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.03	0.03	0.00005	0.002	0	5.48	0.0002	0.00004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									3.13E-05
															Toluene	4.09E-04	lb/MMBtu									1.37E-05
															Xylenes	2.85E-04	lb/MMBtu									9.58E-06
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.31E-06
															Formaldehyde	1.18E-03	lb/MMBtu									3.96E-05
															Acetaldehyde	7.67E-04	lb/MMBtu									2.58E-05
															Acrolein	9.25E-05	lb/MMBtu									3.11E-06
															Naphthalene	8.48E-05	lb/MMBtu									2.85E-06
															Acenaphthylene	5.06E-06	lb/MMBtu									1.70E-07
															Acenaphthene	1.42E-06	lb/MMBtu									4.77E-08
															Fluorene	2.92E-05	lb/MMBtu									9.81E-07
															Phenanthrene	2.94E-05	lb/MMBtu									9.88E-07
															Anthracene	1.87E-06	lb/MMBtu									6.28E-08
															Fluoranthene	7.61E-06	lb/MMBtu									2.56E-07
															Pyrene	4.78E-06	lb/MMBtu									1.61E-07
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									5.64E-08
															Chrysene	3.53E-07	lb/MMBtu									1.19E-08
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									3.33E-09
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									5.21E-09
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									6.32E-09
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.26E-08
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.96E-08
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.64E-08
Tanks																										
T01	C7 Distribution Tank (T-C7D)	C7DT	4-03-010-19	NF	24	hours	0	0	0	1.08E-01	0	0	0	0	--	--	lb/hr	0	0	0	0.001	0	0	0	0	--
T02	MIBC Storage Tank (T-MIBCS)	MST	4-90-999-98	NF	24	hours	0	0	0	3.53E-03	0	0	0	0	--	--	lb/hr	0	0	0	0.00004	0	0	0	0	--
T03	Diesel Fuel Storage Tank - Heavy Vehicles 1 (T-DFS-HV1)	DFSTHV	4-03-010-19	NF	24	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.0002	0	0	0	0	6.85E-08
															Benzene	2.74E-05	lb/hr									3.29E-07
															Toluene	3.18E-04	lb/hr									3.82E-06
															Ethylbenzene	4.45E-05	lb/hr									5.34E-07
															m-Xylene	8.23E-04	lb/hr									9.88E-06
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									8.11E-06
T04	Diesel Fuel Storage Tank - Heavy Vehicles 2 (T-DFS-HV2)	DFSTHV	4-03-010-19	NF	24	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.0002	0	0	0	0	6.85E-08
															Benzene	2.74E-05	lb/hr									3.29E-07
															Toluene	3.18E-04	lb/hr									3.82E-06
															Ethylbenzene	4.45E-05	lb/hr									5.34E-07

Table H.8 Maximum Daily Gaseous Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 1	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 1								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															m-Xylene	8.23E-04	lb/hr									9.88E-06
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									8.11E-06
Total Non-Fugitive Emissions (excluding tailpipe emissions):																		**0.39**	**0.63**	**0.0008**	**0.04**	**0.00005**	**88.36**	**0.004**	**0.0007**	**0.001**
Total Fugitive Emissions (excluding tailpipe emissions):																		**1.74**	**0.44**	**0.05**	**0.01**	**0**	**14.73**	**0.0006**	**0.0001**	**0.009**
Total Emissions (excluding tailpipe emissions):																		**2.13**	**1.07**	**0.05**	**0.05**	**0.00005**	**103.09**	**0.004**	**0.0008**	**0.01**
Tailpipe Emissions (see Tables H.13-H.17):																		**2.78**	**3.50**	**0.006**	**0.25**	**--**	**541.74**	**--**	**--**	**--**

[a] CO_2e emissions are calculcated by summing the individual greenhouse gas emissions multiplied by their global warming potential (GWP). GWP of CO_2 = 1, GWP of CH_4 = 21, GWP of N_2O = 310.

[b] All HAP emissions are included in the facility-wide potential to emit, regardless of if they are fugitive or non-fugitive emissions.

Table H.9 Hourly Gaseous Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 1	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 1								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
Mining																										
MN02	Blasting	Blast	3-05-020-09	F	52	tons ANFO	67.00	17.00	2.00	0	0	566	0.02	0.005	--	--	lb/tons ANFO	3,484.00	884.00	104.00	0	0	29,455.36	1.19	0.24	--
Solvent Extraction and Electrowinning																										
SXE01	Solvent Extraction	SX	4-90-001-99	F	1	hours	0	0	0	9.43E-05	0	0	0	0	Benzene	3.37E-07	lb/hr-ft^2	0	0	0	0.86	0	0	0	0	3.08E-03
	4 Primary Mix Tanks (7.75' D x 9.75' H each)	4 @ 47.2 = 188.7	ft^2		9,132.9	ft^2	Total Surface Area of Solvent Extraction								Toluene	4.82E-06	lb/hr-ft^2									4.40E-02
	4 Secondary Mix Tanks (9.5' D x 9.75' H each)	4 @ 70.9 = 283.5	ft^2												Ethylbenzene	2.05E-05	lb/hr-ft^2									1.87E-01
	3 Tertiary Mix Tanks (9.5' D x 9.75' H each)	3 @ 70.9 = 212.6	ft^2												Xylenes	2.80E-05	lb/hr-ft^2									2.56E-01
	4 Extraction Settlers (64' L x 33' W x 3.33' H each)	4 @ 2,112 = 8,448	ft^2												Others (including Hexane)	2.94E-05	lb/hr-ft^2									2.69E-01
SXE02	Electrowinning Commercial Cells (EWCC)	EW	none	NF	1	hours	0	0	0	0	1.57E-04	0	0	0	Cobalt Compounds	2.36E-08	lb/hr-ft^2	0	0	0	0	0.004	0	0	0	6.22E-07
	Controlled by Cell Ventilation Scrubbers (PC-EWCVS1/EWCVS3)				2,640	ft^2																				
					99	Control Efficiency (%)																				
Fuel Burning Equipment																										
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	1	hours	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	POM	3.30E-03	lb/1000 gal	0.22	0.88	0.009	0.009	0	1,016.78	0.04	0.008	1.45E-04
					6.0	MMBtu/hr									Formaldehyde	6.10E-02	lb/1000 gal									2.67E-03
															Arsenic	4.00	lb/10^{12} Btu									2.40E-05
															Beryllium	3.00	lb/10^{12} Btu									1.80E-05
															Cadmium	3.00	lb/10^{12} Btu									1.80E-05
															Chromium	3.00	lb/10^{12} Btu									1.80E-05
															Lead	9.00	lb/10^{12} Btu									5.40E-05
															Mercury	3.00	lb/10^{12} Btu									1.80E-05
															Manganese	6.00	lb/10^{12} Btu									3.60E-05
															Nickel	3.00	lb/10^{12} Btu									1.80E-05
															Selenium	15.00	lb/10^{12} Btu									9.00E-05
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	7.72	13.23	0.01	0.88	0	1,530.61	0.06	0.01	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									7.28E-03
															Toluene	2.81E-04	lb/MMBtu									2.64E-03
															Xylenes	1.93E-04	lb/MMBtu									1.81E-03
															Formaldehyde	7.89E-05	lb/MMBtu									7.41E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									2.37E-04
															Acrolein	7.88E-06	lb/MMBtu									7.40E-05
															Naphthalene	1.30E-04	lb/MMBtu									1.22E-03
															Acenaphthylene	9.23E-06	lb/MMBtu									8.66E-05
															Acenaphthene	4.68E-06	lb/MMBtu									4.39E-05
															Fluorene	1.28E-05	lb/MMBtu									1.20E-04
															Phenanthrene	4.08E-05	lb/MMBtu									3.83E-04
															Anthracene	1.23E-06	lb/MMBtu									1.15E-05
															Fluoranthene	4.03E-06	lb/MMBtu									3.78E-05
															Pyrene	3.71E-06	lb/MMBtu									3.48E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.84E-06
															Chrysene	1.53E-06	lb/MMBtu									1.44E-05

Table H.9 Hourly Gaseous Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 1	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 1								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.04E-05
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.05E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.41E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.89E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.25E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									5.22E-06
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	7.72	13.23	0.01	0.88	0	1,530.61	0.06	0.01	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									7.28E-03
															Toluene	2.81E-04	lb/MMBtu									2.64E-03
															Xylenes	1.93E-04	lb/MMBtu									1.81E-03
															Formaldehyde	7.89E-05	lb/MMBtu									7.41E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									2.37E-04
															Acrolein	7.88E-06	lb/MMBtu									7.40E-05
															Naphthalene	1.30E-04	lb/MMBtu									1.22E-03
															Acenaphthylene	9.23E-06	lb/MMBtu									8.66E-05
															Acenaphthene	4.68E-06	lb/MMBtu									4.39E-05
															Fluorene	1.28E-05	lb/MMBtu									1.20E-04
															Phenanthrene	4.08E-05	lb/MMBtu									3.83E-04
															Anthracene	1.23E-06	lb/MMBtu									1.15E-05
															Fluoranthene	4.03E-06	lb/MMBtu									3.78E-05
															Pyrene	3.71E-06	lb/MMBtu									3.48E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.84E-06
															Chrysene	1.53E-06	lb/MMBtu									1.44E-05
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.04E-05
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.05E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.41E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.89E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.25E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									5.22E-06
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	5.79	9.92	0.01	0.66	0	1,147.96	0.05	0.009	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									5.46E-03
															Toluene	2.81E-04	lb/MMBtu									1.98E-03
															Xylenes	1.93E-04	lb/MMBtu									1.36E-03
															Formaldehyde	7.89E-05	lb/MMBtu									5.55E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									1.77E-04
															Acrolein	7.88E-06	lb/MMBtu									5.55E-05
															Naphthalene	1.30E-04	lb/MMBtu									9.15E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									6.50E-05
															Acenaphthene	4.68E-06	lb/MMBtu									3.29E-05
															Fluorene	1.28E-05	lb/MMBtu									9.01E-05

Table H.9 Hourly Gaseous Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 1	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 1								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Phenanthrene	4.08E-05	lb/MMBtu									2.87E-04
															Anthracene	1.23E-06	lb/MMBtu									8.66E-06
															Fluoranthene	4.03E-06	lb/MMBtu									2.84E-05
															Pyrene	3.71E-06	lb/MMBtu									2.61E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									4.38E-06
															Chrysene	1.53E-06	lb/MMBtu									1.08E-05
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									7.81E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.53E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									1.81E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									2.91E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.44E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									3.91E-06
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	5.79	9.92	0.01	0.66	0	1,147.96	0.05	0.009	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									5.46E-03
															Toluene	2.81E-04	lb/MMBtu									1.98E-03
															Xylenes	1.93E-04	lb/MMBtu									1.36E-03
															Formaldehyde	7.89E-05	lb/MMBtu									5.55E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									1.77E-04
															Acrolein	7.88E-06	lb/MMBtu									5.55E-05
															Naphthalene	1.30E-04	lb/MMBtu									9.15E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									6.50E-05
															Acenaphthene	4.68E-06	lb/MMBtu									3.29E-05
															Fluorene	1.28E-05	lb/MMBtu									9.01E-05
															Phenanthrene	4.08E-05	lb/MMBtu									2.87E-04
															Anthracene	1.23E-06	lb/MMBtu									8.66E-06
															Fluoranthene	4.03E-06	lb/MMBtu									2.84E-05
															Pyrene	3.71E-06	lb/MMBtu									2.61E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									4.38E-06
															Chrysene	1.53E-06	lb/MMBtu									1.08E-05
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									7.81E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.53E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									1.81E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									2.91E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.44E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									3.91E-06
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	1	hours	5.00	4.43	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.55	0.49	0.0007	0.03	0	76.53	0.003	0.0006	--
					50	kW									Benzene	9.33E-04	lb/MMBtu									4.38E-04
															Toluene	4.09E-04	lb/MMBtu									1.92E-04
															Xylenes	2.85E-04	lb/MMBtu									1.34E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.84E-05

Table H.9 Hourly Gaseous Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 1	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 1								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Formaldehyde	1.18E-03	lb/MMBtu									5.54E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									3.60E-04
															Acrolein	9.25E-05	lb/MMBtu									4.34E-05
															Naphthalene	8.48E-05	lb/MMBtu									3.98E-05
															Acenaphthylene	5.06E-06	lb/MMBtu									2.37E-06
															Acenaphthene	1.42E-06	lb/MMBtu									6.66E-07
															Fluorene	2.92E-05	lb/MMBtu									1.37E-05
															Phenanthrene	2.94E-05	lb/MMBtu									1.38E-05
															Anthracene	1.87E-06	lb/MMBtu									8.78E-07
															Fluoranthene	7.61E-06	lb/MMBtu									3.57E-06
															Pyrene	4.78E-06	lb/MMBtu									2.24E-06
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									7.89E-07
															Chrysene	3.53E-07	lb/MMBtu									1.66E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									4.65E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									7.28E-08
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									8.82E-08
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.76E-07
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									2.74E-07
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									2.30E-07
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	1	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	2.30	2.46	0.004	0.18	0	456.55	0.02	0.004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									2.61E-03
															Toluene	4.09E-04	lb/MMBtu									1.15E-03
															Xylenes	2.85E-04	lb/MMBtu									7.98E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.09E-04
															Formaldehyde	1.18E-03	lb/MMBtu									3.30E-03
															Acetaldehyde	7.67E-04	lb/MMBtu									2.15E-03
															Acrolein	9.25E-05	lb/MMBtu									2.59E-04
															Naphthalene	8.48E-05	lb/MMBtu									2.37E-04
															Acenaphthylene	5.06E-06	lb/MMBtu									1.42E-05
															Acenaphthene	1.42E-06	lb/MMBtu									3.98E-06
															Fluorene	2.92E-05	lb/MMBtu									8.18E-05
															Phenanthrene	2.94E-05	lb/MMBtu									8.23E-05
															Anthracene	1.87E-06	lb/MMBtu									5.24E-06
															Fluoranthene	7.61E-06	lb/MMBtu									2.13E-05
															Pyrene	4.78E-06	lb/MMBtu									1.34E-05
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									4.70E-06
															Chrysene	3.53E-07	lb/MMBtu									9.88E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									2.77E-07
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									4.34E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									5.26E-07

Table H.9 Hourly Gaseous Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 1	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 1								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.05E-06
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.63E-06
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.37E-06
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	1	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	2.30	2.46	0.004	0.18	0	456.55	0.02	0.004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									2.61E-03
															Toluene	4.09E-04	lb/MMBtu									1.15E-03
															Xylenes	2.85E-04	lb/MMBtu									7.98E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.09E-04
															Formaldehyde	1.18E-03	lb/MMBtu									3.30E-03
															Acetaldehyde	7.67E-04	lb/MMBtu									2.15E-03
															Acrolein	9.25E-05	lb/MMBtu									2.59E-04
															Naphthalene	8.48E-05	lb/MMBtu									2.37E-04
															Acenaphthylene	5.06E-06	lb/MMBtu									1.42E-05
															Acenaphthene	1.42E-06	lb/MMBtu									3.98E-06
															Fluorene	2.92E-05	lb/MMBtu									8.18E-05
															Phenanthrene	2.94E-05	lb/MMBtu									8.23E-05
															Anthracene	1.87E-06	lb/MMBtu									5.24E-06
															Fluoranthene	7.61E-06	lb/MMBtu									2.13E-05
															Pyrene	4.78E-06	lb/MMBtu									1.34E-05
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									4.70E-06
															Chrysene	3.53E-07	lb/MMBtu									9.88E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									2.77E-07
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									4.34E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									5.26E-07
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.05E-06
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.63E-06
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.37E-06
Tanks																										
T01	C7 Distribution Tank (T-C7D)	C7DT	4-03-010-19	NF	1	hours	0	0	0	1.08E-01	0	0	0	0	--	--	lb/hr	0	0	0	0.11	0	0	0	0	--
T02	MIBC Storage Tank (T-MIBCS)	MST	4-90-999-98	NF	1	hours	0	0	0	3.53E-03	0	0	0	0	--	--	lb/hr	0	0	0	0.004	0	0	0	0	--
T03	Diesel Fuel Storage Tank - Heavy Vehicles 1 (T-DFS-HV1)	DFSTHV	4-03-010-19	NF	1	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.01	0	0	0	0	5.71E-06
															Benzene	2.74E-05	lb/hr									2.74E-05
															Toluene	3.18E-04	lb/hr									3.18E-04
															Ethylbenzene	4.45E-05	lb/hr									4.45E-05
															m-Xylene	8.23E-04	lb/hr									8.23E-04
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									6.76E-04
T04	Diesel Fuel Storage Tank - Heavy Vehicles 2 (T-DFS-HV2)	DFSTHV	4-03-010-19	NF	1	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.01	0	0	0	0	5.71E-06
															Benzene	2.74E-05	lb/hr									2.74E-05
															Toluene	3.18E-04	lb/hr									3.18E-04
															Ethylbenzene	4.45E-05	lb/hr									4.45E-05

Table H.9 Hourly Gaseous Emissions - Year 1

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 1	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 1								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															m-Xylene	8.23E-04	lb/hr									8.23E-04
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									6.76E-04
Total Non-Fugitive Emissions (excluding tailpipe emissions):																		**32.38**	**52.57**	**0.07**	**3.61**	**0.004**	**7,363.56**	**0.30**	**0.06**	**0.08**
Total Fugitive Emissions (excluding tailpipe emissions):																		**3,484.00**	**884.00**	**104.00**	**0.86**	**0**	**29,455.36**	**1.19**	**0.24**	**0.76**
Total Emissions (excluding tailpipe emissions):																		**3,516.38**	**936.57**	**104.07**	**4.48**	**0.004**	**36,818.92**	**1.49**	**0.30**	**0.84**
Tailpipe Emissions (see Tables H.13-H.17):																		**231.70**	**293.32**	**1.00**	**20.75**	**--**	**46,981.76**	**--**	**--**	**--**

[a] CO_2e emissions are calculcated by summing the individual greenhouse gas emissions multiplied by their global warming potential (GWP). GWP of CO_2 = 1, GWP of CH_4 = 21, GWP of N_2O = 310.

[b] All HAP emissions are included in the facility-wide potential to emit, regardless of if they are fugitive or non-fugitive emissions.

Table H.10 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.15	g/hp-hr	7.01	0.08	23.14
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.03	g/hp-hr	0.33	0.004	1.10
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.03	g/hp-hr	0.04	0.0005	0.19
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.02	0.0002	0.07
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.003	0.00004	0.01
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,150	hours	0.575	0.01	g/hp-hr	0.01	0.0002	0.06
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Motor Graders, 16M Class	3	297	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.008	0.00009	0.03
Water Trucks, 30,000 gallons	4	1,348	0.37	9	3,250	hours	0.35	0.03	g/hp-hr	0.05	0.0006	0.20
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.03	g/hp-hr	0.06	0.0008	0.28
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.003	0.00004	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.15	g/hp-hr	0.70	0.008	3.08
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.01	g/hp-hr	0.007	0.00009	0.03
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.0007	0.000009	0.003

Table H.10 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.007
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.04	0.0005	0.17
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.008	0.0001	0.04
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.2117	g/mile	0.004	0.00005	0.02
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.2117	g/mile	0.00005	0.0000006	0.0002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.001	0.00002	0.006
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.02	g/hp-hr	0.004	0.00005	0.02
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00003	0.01
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000008	0.003
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000009	0.003
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.002	0.00002	0.009
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.01	g/hp-hr	0.0006	0.000007	0.003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.004

Table H.10 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.005
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.002	0.00002	0.009
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.2117	g/mile	0.0002	0.000002	0.0007
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.008
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.0005	0.000006	0.002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.005	0.00006	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.01	g/hp-hr	0.002	0.00003	0.01
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.02	g/hp-hr	0.001	0.00002	0.006
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.07	0.0009	0.32
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.2117	g/mile	0.0004	0.000005	0.002
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.2117	g/mile	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.02	g/hp-hr	0.06	0.0007	0.25
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.01	g/hp-hr	0.004	0.00005	0.001
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.01	g/hp-hr	0.009	0.0001	0.002
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.2117	g/mile	0.01	0.0002	0.04
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.2117	g/mile	0.003	0.000004	0.0005
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.2117	g/mile	0.01	0.00003	0.01

Table H.10 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.2117	g/mile	0.007	0.000005	0.001
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.001
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.2117	g/mile	0.003	0.000006	0.001
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.2117	g/mile	0.003	0.00001	0.003
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.2117	g/mile	0.003	0.000002	0.0003
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	0.0255	g/mile	0.002	0.00002	0.007
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	0.0255	g/mile	0.0002	0.000002	0.0007
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	0.0255	g/mile	0.0004	0.000005	0.002
Total Emissions from Haul Truck Engines:										**7.35**	**0.09**	**24.24**
Total Emissions from Other Mobile Engines:										**1.24**	**0.01**	**5.16**
Total Emissions from All Mobile Engines:										**8.59**	**0.10**	**29.40**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.11 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.15	g/hp-hr	7.01	0.08	23.14
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.03	g/hp-hr	0.33	0.004	1.10
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.03	g/hp-hr	0.04	0.0005	0.19
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.02	0.0002	0.07
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.003	0.00004	0.01
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,150	hours	0.575	0.01	g/hp-hr	0.01	0.0002	0.06
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Motor Graders, 16M Class	3	297	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.008	0.00009	0.03
Water Trucks, 30,000 gallons	4	1,348	0.37	9	3,250	hours	0.35	0.03	g/hp-hr	0.05	0.0006	0.20
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.03	g/hp-hr	0.06	0.0008	0.28
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.003	0.00004	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.15	g/hp-hr	0.70	0.008	3.08
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.01	g/hp-hr	0.007	0.00009	0.03
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.0007	0.000009	0.003

Table H.11 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.007
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.04	0.0005	0.17
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.008	0.0001	0.04
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.2117	g/mile	0.004	0.00005	0.02
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.2117	g/mile	0.00005	0.0000006	0.0002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.001	0.00002	0.006
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.02	g/hp-hr	0.004	0.00005	0.02
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00003	0.01
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Copper Cathode Forklift	1	92.5	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000008	0.003
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000009	0.003
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.002	0.00002	0.009
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.01	g/hp-hr	0.0006	0.000007	0.003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.004

Table H.11 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.005
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.002	0.00002	0.009
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.2117	g/mile	0.0002	0.000002	0.0007
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.008
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.0005	0.000006	0.002
Truck Shop Bridge Crane, 25 tons	1	24.1	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.005	0.00006	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.40	0.01	g/hp-hr	0.002	0.00003	0.01
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.30	0.02	g/hp-hr	0.001	0.00002	0.006
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.07	0.0009	0.32
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.2117	g/mile	0.0004	0.000005	0.002
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.2117	g/mile	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.02	g/hp-hr	0.06	0.0007	0.25
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.01	g/hp-hr	0.004	0.00005	0.001
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.01	g/hp-hr	0.009	0.0001	0.002
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.2117	g/mile	0.01	0.0002	0.04
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.2117	g/mile	0.003	0.000004	0.0005
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.2117	g/mile	0.01	0.00003	0.01

Table H.11 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 1

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.2117	g/mile	0.007	0.000005	0.001
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.001
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.2117	g/mile	0.003	0.000006	0.001
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.2117	g/mile	0.003	0.00001	0.003
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.2117	g/mile	0.003	0.000002	0.0003
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	0.0255	g/mile	0.002	0.00002	0.007
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	0.0255	g/mile	0.0002	0.000002	0.0007
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	0.0255	g/mile	0.0004	0.000005	0.002
Total Emissions from Haul Truck Engines:										**7.35**	**0.09**	**24.24**
Total Emissions from Other Mobile Engines:										**1.24**	**0.01**	**5.16**
Total Emissions from All Mobile Engies:										**8.59**	**0.10**	**29.40**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.12 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.15	g/hp-hr	7.01	0.08	23.14
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.03	g/hp-hr	0.33	0.004	1.10
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.03	g/hp-hr	0.04	0.0005	0.19
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.02	0.0002	0.07
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.003	0.00004	0.01
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,150	hours	0.575	0.01	g/hp-hr	0.01	0.0002	0.06
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Motor Graders, 16M Class	3	297	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.008	0.00009	0.03
Water Trucks, 30,000 gallons	4	1,348	0.37	9	3,250	hours	0.35	0.03	g/hp-hr	0.05	0.0006	0.20
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.03	g/hp-hr	0.06	0.0008	0.28
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.003	0.00004	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.15	g/hp-hr	0.70	0.008	3.08
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.01	g/hp-hr	0.007	0.00009	0.03
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.0007	0.000009	0.003

Table H.12 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.007
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.04	0.0005	0.17
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.008	0.0001	0.04
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.2117	g/mile	0.004	0.00005	0.02
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.2117	g/mile	0.00005	0.0000006	0.0002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.001	0.00002	0.006
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.02	g/hp-hr	0.004	0.00005	0.02
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00003	0.01
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000008	0.003
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000009	0.003
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.002	0.00002	0.009
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.01	g/hp-hr	0.0006	0.000007	0.003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.004

Table H.12 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.005
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.002	0.00002	0.009
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.2117	g/mile	0.0002	0.000002	0.0007
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.008
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.0005	0.000006	0.002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.005	0.00006	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.01	g/hp-hr	0.002	0.00003	0.01
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.02	g/hp-hr	0.001	0.00002	0.006
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.07	0.0009	0.32
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.2117	g/mile	0.0004	0.000005	0.002
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.2117	g/mile	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.02	g/hp-hr	0.06	0.0007	0.25
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.01	g/hp-hr	0.004	0.00005	0.001
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.01	g/hp-hr	0.009	0.0001	0.002
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.2117	g/mile	0.01	0.0002	0.04
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.2117	g/mile	0.003	0.000004	0.0005
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.2117	g/mile	0.01	0.00003	0.01

Table H.12 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 1

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.2117	g/mile	0.007	0.000005	0.001
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.001
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.2117	g/mile	0.003	0.000006	0.001
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.2117	g/mile	0.003	0.00001	0.003
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.2117	g/mile	0.003	0.000002	0.0003
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	0.0255	g/mile	0.002	0.00002	0.007
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	0.0255	g/mile	0.0002	0.000002	0.0007
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	0.0255	g/mile	0.0004	0.000005	0.002
Total Emissions from Haul Truck Engines:										**7.35**	**0.09**	**24.24**
Total Emissions from Other Mobile Engines:										**1.24**	**0.01**	**5.16**
Total Emissions from All Mobile Engines:										**8.59**	**0.10**	**29.40**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.13 CO Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	CO Emission Factor		CO Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	2.60	g/hp-hr	121.52	1.46	401.01
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	2.60	g/hp-hr	29.16	0.35	96.24
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	2.60	g/hp-hr	3.84	0.05	16.81
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	2.60	g/hp-hr	3.93	0.05	17.20
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	2.60	g/hp-hr	0.77	0.009	3.36
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,150	hours	0.575	2.60	g/hp-hr	3.46	0.04	15.14
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	2.60	g/hp-hr	1.20	0.01	5.27
Motor Graders, 16M Class	3	297	0.68	16	6,000	hours	0.575	2.60	g/hp-hr	2.01	0.02	8.81
Water Trucks, 30,000 gallons	4	1,348	0.37	9	3,250	hours	0.35	2.60	g/hp-hr	4.01	0.05	17.58
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	5.55	0.07	24.29
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.79	0.009	3.44
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	2.60	g/hp-hr	12.17	0.15	53.33
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.66	0.02	7.29
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.66	0.02	7.29
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.29	0.02	5.67
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	2.60	g/hp-hr	1.30	0.02	5.67
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	2.60	g/hp-hr	1.85	0.02	8.11
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	3.70	g/hp-hr	0.27	0.003	1.16

Table H.13 CO Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	CO Emission Factor		CO Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.43	0.005	1.86
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	3.42	0.04	15.00
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	2.60	g/hp-hr	2.12	0.03	9.27
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	1.870	g/mile	0.04	0.0004	0.15
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	1.870	g/mile	0.0005	0.000006	0.002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.32	0.004	1.42
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.50	0.006	2.18
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	4.10	g/hp-hr	0.82	0.01	3.58
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.59	0.007	2.59
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.58	0.007	2.53
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.33	0.004	1.46
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.33	0.004	1.46
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	2.60	g/hp-hr	0.18	0.002	0.79
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	2.60	g/hp-hr	0.19	0.002	0.83
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	2.60	g/hp-hr	0.53	0.006	2.30
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	3.70	g/hp-hr	0.23	0.003	1.00
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.59	0.007	2.59
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.18	0.002	0.79

Table H.13 CO Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	CO Emission Factor		CO Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.23	0.003	1.00
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.36	0.004	1.58
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.29	0.02	5.67
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	1.870	g/mile	0.001	0.00002	0.006
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.49	0.006	2.16
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	3.70	g/hp-hr	0.20	0.002	0.86
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	4.90	g/hp-hr	0.08	0.001	0.37
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	3.70	g/hp-hr	0.85	0.01	3.71
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	3.70	g/hp-hr	0.27	0.003	1.17
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	6.39	0.08	28.00
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	1.870	g/mile	0.004	0.00004	0.02
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	1.870	g/mile	0.02	0.0003	0.10
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	2.60	g/hp-hr	7.45	0.09	32.61
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	2.60	g/hp-hr	1.15	0.01	0.29
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	3.70	g/hp-hr	3.26	0.04	0.82
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	1.870	g/mile	0.12	0.002	0.35
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	1.870	g/mile	0.03	0.00003	0.004
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	1.870	g/mile	0.09	0.0003	0.11

Table H.13 CO Emissions from Fuel Burning Mobile Engines - Year 1

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	CO Emission Factor		CO Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	1.870	g/mile	0.06	0.0001	0.04
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	1.870	g/mile	0.06	0.00005	0.01
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	1.870	g/mile	0.06	0.0001	0.04
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	1.870	g/mile	0.06	0.00009	0.01
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	1.870	g/mile	0.03	0.00005	0.01
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	1.870	g/mile	0.03	0.0001	0.03
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	1.870	g/mile	0.03	0.00002	0.002
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	15.51	g/mile	0.94	0.01	4.10
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	15.51	g/mile	0.09	0.001	0.41
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	15.51	g/mile	0.23	0.003	1.03
Total Emissions from Haul Truck Engines:										**150.68**	**1.81**	**497.25**
Total Emissions from Other Mobile Engines:										**81.02**	**0.97**	**334.72**
Total Emissions from All Mobile Engines:										**231.70**	**2.78**	**831.98**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.14 NO_x Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	4.50	g/hp-hr	210.32	2.52	694.06
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	2.61	g/hp-hr	29.28	0.35	96.61
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	2.60	g/hp-hr	3.84	0.05	16.81
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.30	g/hp-hr	0.45	0.005	1.99
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.30	g/hp-hr	0.09	0.001	0.39
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,150	hours	0.575	0.30	g/hp-hr	0.40	0.005	1.75
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.30	g/hp-hr	0.14	0.002	0.61
Motor Graders, 16M Class	3	297	0.68	16	6,000	hours	0.575	0.30	g/hp-hr	0.23	0.003	1.02
Water Trucks, 30,000 gallons	4	1,348	0.37	9	3,250	hours	0.35	2.60	g/hp-hr	4.01	0.05	17.58
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	5.55	0.07	24.29
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.09	0.001	0.40
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	4.50	g/hp-hr	21.07	0.25	92.29
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.19	0.002	0.84
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.19	0.002	0.84
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.15	0.002	0.65
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.30	g/hp-hr	0.15	0.002	0.65
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.30	g/hp-hr	0.21	0.003	0.94
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.30	g/hp-hr	0.02	0.0003	0.09

Table H.14 NO_x Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.05	0.0006	0.21
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	3.42	0.04	15.00
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.30	g/hp-hr	0.24	0.003	1.07
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	7.394	g/mile	0.14	0.002	0.61
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	7.394	g/mile	0.002	0.00002	0.008
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.03	0.0003	0.12
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.04	0.0005	0.18
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	3.30	g/hp-hr	0.66	0.008	2.88
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.07	0.0008	0.30
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.05	0.0006	0.21
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.03	0.0003	0.12
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.03	0.0003	0.12
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.30	g/hp-hr	0.02	0.0003	0.09
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.30	g/hp-hr	0.02	0.0003	0.10
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.30	g/hp-hr	0.06	0.0007	0.27
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.30	g/hp-hr	0.02	0.0002	0.08
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.05	0.0006	0.21
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	3.30	g/hp-hr	0.16	0.002	0.71

Table H.14 NO_x Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	3.30	g/hp-hr	0.20	0.002	0.89
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	3.30	g/hp-hr	0.32	0.004	1.41
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.15	0.002	0.65
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	7.394	g/mile	0.006	0.00007	0.02
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.06	0.0007	0.25
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.02	0.0002	0.07
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	5.00	g/hp-hr	0.09	0.001	0.38
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.30	g/hp-hr	0.07	0.0008	0.30
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	3.30	g/hp-hr	0.24	0.003	1.05
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	6.39	0.08	28.00
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	7.394	g/mile	0.01	0.0002	0.06
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	7.394	g/mile	0.09	0.001	0.39
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.50	g/hp-hr	1.43	0.02	6.27
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.30	g/hp-hr	0.13	0.002	0.03
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.30	g/hp-hr	0.26	0.003	0.07
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	7.394	g/mile	0.48	0.008	1.38
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	7.394	g/mile	0.12	0.0001	0.02
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	7.394	g/mile	0.36	0.001	0.42

Table H.14 NO_x Emissions from Fuel Burning Mobile Engines - Year 1

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	7.394	g/mile	0.24	0.0004	0.16
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	7.394	g/mile	0.24	0.0002	0.05
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	7.394	g/mile	0.24	0.0004	0.14
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	7.394	g/mile	0.24	0.0003	0.04
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	7.394	g/mile	0.12	0.0002	0.05
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	7.394	g/mile	0.12	0.0004	0.10
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	7.394	g/mile	0.12	0.00006	0.009
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	1.145	g/mile	0.07	0.0008	0.30
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	1.145	g/mile	0.007	0.00008	0.03
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	1.145	g/mile	0.02	0.0002	0.08
Total Emissions from Haul Truck Engines:										**239.60**	**2.88**	**790.67**
Total Emissions from Other Mobile Engines:										**53.73**	**0.63**	**226.01**
Total Emissions from All Mobile Engines:										**293.32**	**3.50**	**1,016.69**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.15 SO_2 Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 1		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 1	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.002	g/hp-hr	0.24	0.003	0.78
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.002	g/hp-hr	0.06	0.0007	0.19
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.003	g/hp-hr	0.007	0.00008	0.03
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.002	g/hp-hr	0.005	0.00006	0.02
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.002	g/hp-hr	0.0008	0.00001	0.004
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,150	hours	0.575	0.002	g/hp-hr	0.004	0.00005	0.02
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.002	g/hp-hr	0.001	0.00002	0.006
Motor Graders, 16M Class	3	297	0.68	16	6,000	hours	0.575	0.002	g/hp-hr	0.002	0.00003	0.01
Water Trucks, 30,000 gallons	4	1,348	0.37	9	3,250	hours	0.35	0.003	g/hp-hr	0.01	0.0002	0.06
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.008	0.0001	0.04
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.001	0.00001	0.005
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.001	g/hp-hr	0.01	0.0001	0.05
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00003	0.01
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00003	0.01
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00002	0.008
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.002	g/hp-hr	0.001	0.00002	0.006
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.001	g/hp-hr	0.003	0.00003	0.01
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.002	g/hp-hr	0.0003	0.000004	0.001

Table H.15 SO_2 Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 1		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 1	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0006	0.000007	0.003
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.004	0.00004	0.02
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.002	g/hp-hr	0.004	0.00005	0.02
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.005	0.00006	0.02
Tire Handler	1	90	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0002	0.000003	0.001
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000003	0.001
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0004	0.000004	0.002
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.003	g/hp-hr	0.001	0.00002	0.006
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0009	0.00001	0.004
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0004	0.000005	0.002
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000003	0.001
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000003	0.001
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.002	g/hp-hr	0.0005	0.000006	0.002
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.002	g/hp-hr	0.0006	0.000007	0.002
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.002	g/hp-hr	0.0009	0.00001	0.004
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.002	g/hp-hr	0.0004	0.000005	0.002
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0004	0.000005	0.002
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0001	0.000002	0.0006

Table H.15 SO_2 Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 1		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 1	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000002	0.0007
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0003	0.000003	0.001
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00002	0.008
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0007	0.000008	0.003
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0007	0.000009	0.003
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0002	0.000002	0.0009
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.00006	0.0000008	0.0003
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.40	0.002	g/hp-hr	0.0009	0.00001	0.004
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.002	g/hp-hr	0.0004	0.000005	0.002
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.007	0.00008	0.03
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.001	0.00001	0.005
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.001	g/hp-hr	0.009	0.0001	0.04
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.021	g/hp-hr	0.009	0.0001	0.002
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.021	g/hp-hr	0.02	0.0002	0.005
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.43	0.002	g/hp-hr	0.002	0.00001	0.005
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.43	0.124	g/hp-hr	0.12	0.00006	0.005
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.43	0.005	g/hp-hr	0.005	0.00001	0.005

Table H.15 SO_2 Emissions from Fuel Burning Mobile Engines - Year 1

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 1		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 1	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.43	0.014	g/hp-hr	0.01	0.00001	0.005
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.43	0.045	g/hp-hr	0.05	0.00002	0.005
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.43	0.016	g/hp-hr	0.02	0.00002	0.006
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.43	0.053	g/hp-hr	0.05	0.00003	0.005
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.43	0.042	g/hp-hr	0.04	0.00002	0.005
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.43	0.021	g/hp-hr	0.02	0.00001	0.005
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.43	0.240	g/hp-hr	0.24	0.0001	0.005
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	0.54	0.017	g/hp-hr	0.003	0.00004	0.01
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	0.54	0.0025	g/hp-hr	0.0005	0.000006	0.002
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	0.54	0.017	g/hp-hr	0.002	0.00003	0.01
Total Emissions from Haul Truck Engines:										**0.29**	**0.004**	**0.96**
Total Emissions from Other Mobile Engines:										**0.70**	**0.002**	**0.57**
Total Emissions from All Mobile Engines:										**1.00**	**0.006**	**1.54**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.16 VOC Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.30	g/hp-hr	14.02	0.17	46.27
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.14	g/hp-hr	1.59	0.02	5.24
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.14	g/hp-hr	0.21	0.002	0.91
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.14	g/hp-hr	0.21	0.003	0.93
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.14	g/hp-hr	0.04	0.0005	0.18
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,150	hours	0.575	0.14	g/hp-hr	0.19	0.002	0.82
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.14	g/hp-hr	0.06	0.0008	0.28
Motor Graders, 16M Class	3	297	0.68	16	6,000	hours	0.575	0.14	g/hp-hr	0.11	0.001	0.47
Water Trucks, 30,000 gallons	4	1,348	0.37	9	3,250	hours	0.35	0.14	g/hp-hr	0.22	0.003	0.95
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.30	0.004	1.31
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.04	0.0005	0.19
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.30	g/hp-hr	1.40	0.02	6.15
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.09	0.001	0.39
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.09	0.001	0.39
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.07	0.0008	0.31
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.14	g/hp-hr	0.07	0.0008	0.31
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.14	g/hp-hr	0.10	0.001	0.44
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.14	g/hp-hr	0.01	0.0001	0.04

Table H.16 VOC Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.02	0.0003	0.10
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.18	0.002	0.81
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.14	g/hp-hr	0.11	0.001	0.50
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.403	g/mile	0.008	0.00009	0.03
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.403	g/mile	0.0001	0.000001	0.0004
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.01	0.0001	0.05
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.02	0.0002	0.08
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.20	g/hp-hr	0.04	0.0005	0.17
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.03	0.0004	0.14
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.02	0.0003	0.10
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.01	0.0002	0.06
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.01	0.0002	0.06
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.14	g/hp-hr	0.01	0.0001	0.04
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.14	g/hp-hr	0.01	0.0001	0.04
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.14	g/hp-hr	0.03	0.0003	0.12
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.14	g/hp-hr	0.009	0.0001	0.04
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.02	0.0003	0.10
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.20	g/hp-hr	0.01	0.0001	0.04

Table H.16 VOC Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.20	g/hp-hr	0.01	0.0001	0.05
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.20	g/hp-hr	0.02	0.0002	0.09
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.07	0.0008	0.31
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.403	g/mile	0.0003	0.000004	0.001
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.03	0.0003	0.12
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.007	0.00009	0.03
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.60	g/hp-hr	0.01	0.0001	0.05
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.14	g/hp-hr	0.03	0.0004	0.14
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.20	g/hp-hr	0.01	0.0002	0.06
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.34	0.004	1.51
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.403	g/mile	0.0008	0.000009	0.003
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.403	g/mile	0.005	0.00006	0.02
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.14	g/hp-hr	0.40	0.005	1.76
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.14	g/hp-hr	0.06	0.0007	0.02
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.14	g/hp-hr	0.12	0.001	0.03
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.403	g/mile	0.03	0.0005	0.08
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.403	g/mile	0.007	0.000007	0.001
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.403	g/mile	0.02	0.00006	0.02

Table H.16 VOC Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 1		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.403	g/mile	0.01	0.00002	0.008
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.403	g/mile	0.01	0.00001	0.003
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.403	g/mile	0.01	0.00002	0.008
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.403	g/mile	0.01	0.00002	0.002
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.403	g/mile	0.007	0.00001	0.003
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.403	g/mile	0.007	0.00002	0.006
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.403	g/mile	0.007	0.000003	0.0005
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	1.329	g/mile	0.08	0.001	0.35
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	1.329	g/mile	0.008	0.0001	0.04
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	1.329	g/mile	0.02	0.0002	0.09
Total Emissions from Haul Truck Engines:										**15.61**	**0.19**	**51.52**
Total Emissions from Other Mobile Engines:										**5.14**	**0.06**	**21.32**
Total Emissions from All Mobile Engines:										**20.75**	**0.25**	**72.84**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.17 CO_2 Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 1		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	497	g/hp-hr	23,241.93	278.90	76,698.38
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	497	g/hp-hr	5,578.06	66.94	18,407.61
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	497	g/hp-hr	734.01	8.81	3,214.95
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	497	g/hp-hr	751.28	9.02	3,290.60
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	497	g/hp-hr	146.56	1.76	641.95
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,150	hours	0.575	497	g/hp-hr	661.19	7.93	2,896.01
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	497	g/hp-hr	230.13	2.76	1,007.98
Motor Graders, 16M Class	3	297	0.68	16	6,000	hours	0.575	497	g/hp-hr	384.71	4.62	1,685.01
Water Trucks, 30,000 gallons	4	1,348	0.37	9	3,250	hours	0.35	497	g/hp-hr	767.60	9.21	3,362.08
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	497	g/hp-hr	1,060.69	12.73	4,645.81
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	497	g/hp-hr	150.26	1.80	658.16
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	497	g/hp-hr	2,328.58	27.94	10,199.17
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	497	g/hp-hr	318.21	3.82	1,393.74
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	497	g/hp-hr	318.21	3.82	1,393.74
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	497	g/hp-hr	247.49	2.97	1,084.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	497	g/hp-hr	247.74	2.97	1,085.10
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	497	g/hp-hr	354.32	4.25	1,551.92
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	497	g/hp-hr	35.69	0.43	156.30

Table H.17 CO_2 Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 1		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	497	g/hp-hr	81.32	0.98	356.18
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	497	g/hp-hr	654.91	7.86	2,868.52
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	497	g/hp-hr	404.62	4.86	1,772.25
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.43	497	g/hp-hr	654.09	7.85	2,864.92
Tire Handler	1	90	0.75	18	6,570	hours	0.43	497	g/hp-hr	31.82	0.38	139.37
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	497	g/hp-hr	43.66	0.52	191.23
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	497	g/hp-hr	66.95	0.80	293.23
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	497	g/hp-hr	99.00	1.19	433.61
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	497	g/hp-hr	113.14	1.36	495.55
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	497	g/hp-hr	77.62	0.93	339.97
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	497	g/hp-hr	44.87	0.54	196.55
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	497	g/hp-hr	44.87	0.54	196.55
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	497	g/hp-hr	34.53	0.41	151.26
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	497	g/hp-hr	36.26	0.44	158.82
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	497	g/hp-hr	100.44	1.21	439.91
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	497	g/hp-hr	30.63	0.37	134.15
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	497	g/hp-hr	79.56	0.95	348.47
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	497	g/hp-hr	24.26	0.29	106.24

Table H.17 CO_2 Emissions from Fuel Burning Mobile Engines - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 1		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	497	g/hp-hr	30.56	0.37	133.86
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	497	g/hp-hr	48.51	0.58	212.48
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	497	g/hp-hr	247.49	2.97	1,084.02
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.43	497	g/hp-hr	88.39	1.06	387.15
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	497	g/hp-hr	94.40	1.13	413.48
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	497	g/hp-hr	26.52	0.32	116.15
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	497	g/hp-hr	8.52	0.10	37.32
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	497	g/hp-hr	113.80	1.37	498.43
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	497	g/hp-hr	36.01	0.43	157.74
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	497	g/hp-hr	1,222.50	14.67	5,354.57
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.43	497	g/hp-hr	159.10	1.91	696.87
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.43	497	g/hp-hr	361.34	4.34	1,582.67
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	497	g/hp-hr	1,424.15	17.09	6,237.78
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	497	g/hp-hr	219.26	2.63	54.82
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	497	g/hp-hr	438.53	5.26	109.63
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.43	497	g/hp-hr	212.14	1.97	720.72
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.43	497	g/hp-hr	212.14	0.11	9.10
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.43	497	g/hp-hr	212.14	0.60	220.71

Table H.17 CO_2 Emissions from Fuel Burning Mobile Engines - Year 1

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 1		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.43	497	g/hp-hr	212.14	0.22	80.92
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.43	497	g/hp-hr	212.14	0.11	24.86
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.43	497	g/hp-hr	235.71	0.22	80.78
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.43	497	g/hp-hr	212.14	0.11	21.20
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.43	497	g/hp-hr	212.14	0.11	27.09
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.43	497	g/hp-hr	212.14	0.15	52.98
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.43	497	g/hp-hr	212.14	0.11	4.71
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	0.54	1.08	lb/hp-hr	51.03	0.61	223.51
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	0.54	1.08	lb/hp-hr	51.03	0.61	223.51
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	0.54	1.08	lb/hp-hr	36.45	0.44	159.65
Total Emissions from Haul Truck Engines:										**28,820.00**	**345.84**	**95,105.99**
Total Emissions from Other Mobile Engines:										**18,161.76**	**195.90**	**68,680.05**
Total Emissions from All Mobile Engines:										**46,981.76**	**541.74**	**163,786.04**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.18 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 1		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 1	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.00003	g/hp-hr	0.005	0.00006	0.02
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.00003	g/hp-hr	0.001	0.00001	0.004
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.00005	g/hp-hr	0.0001	0.000002	0.0006
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.00004	g/hp-hr	0.00009	0.000001	0.0004
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.00003	g/hp-hr	0.00002	0.0000002	0.00007
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,150	hours	0.575	0.00003	g/hp-hr	0.00008	0.000001	0.0004
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.00004	g/hp-hr	0.00003	0.0000003	0.0001
Motor Graders, 16M Class	3	297	0.68	16	6,000	hours	0.575	0.00004	g/hp-hr	0.00005	0.0000006	0.0002
Water Trucks, 30,000 gallons	4	1,348	0.37	9	3,250	hours	0.35	0.00007	g/hp-hr	0.0003	0.000003	0.001
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.0002	0.000002	0.0007
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00002	0.0000003	0.0001
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.00003	g/hp-hr	0.0002	0.000003	0.0009
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00005	0.0000006	0.0002
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00005	0.0000006	0.0002
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00004	0.0000005	0.0002
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.00003	g/hp-hr	0.00003	0.0000003	0.0001
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.00003	g/hp-hr	0.00005	0.0000007	0.0002
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.00003	g/hp-hr	0.000007	0.00000008	0.00003

Table H.18 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 1		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 1	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00001	0.0000001	0.00005
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.00007	0.0000009	0.0003
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.00003	g/hp-hr	0.00008	0.0000009	0.0003
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.0001	0.000001	0.0004
Tire Handler	1	90	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000007	0.00000009	0.00003
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.00006	g/hp-hr	0.00003	0.0000003	0.0001
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00002	0.0000002	0.00008
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000009	0.0000001	0.00004
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.00003	g/hp-hr	0.00001	0.0000001	0.00005
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.00003	g/hp-hr	0.00001	0.0000001	0.00005
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.00003	g/hp-hr	0.00002	0.0000002	0.00008
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.00003	g/hp-hr	0.000008	0.0000001	0.00003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000009	0.0000001	0.00004
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000003	0.00000003	0.00001

Table H.18 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 1												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 1		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 1	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000003	0.00000004	0.00001
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00004	0.0000005	0.0002
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00001	0.0000002	0.00006
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00001	0.0000002	0.00006
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.000004	0.00000005	0.00002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.000001	0.00000002	0.000006
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.40	0.00003	g/hp-hr	0.00002	0.0000002	0.00008
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.00003	g/hp-hr	0.000008	0.00000009	0.00003
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.0001	0.000002	0.0006
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00002	0.0000003	0.0001
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00005	0.0000007	0.0002
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.00003	g/hp-hr	0.0002	0.000002	0.0008
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.0004	g/hp-hr	0.0002	0.000002	0.00005
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.0004	g/hp-hr	0.0004	0.000005	0.00009
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.43	0.00003	g/hp-hr	0.00003	0.0000003	0.0001
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.43	0.002	g/hp-hr	0.002	0.000001	0.0001
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.43	0.0001	g/hp-hr	0.0001	0.0000003	0.0001

Table H.18 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 1

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 1		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 1	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.43	0.0003	g/hp-hr	0.0003	0.0000003	0.0001
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.43	0.0009	g/hp-hr	0.0009	0.0000005	0.0001
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.43	0.0003	g/hp-hr	0.0003	0.0000003	0.0001
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.43	0.001	g/hp-hr	0.001	0.0000005	0.0001
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.43	0.0008	g/hp-hr	0.0008	0.0000004	0.0001
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.43	0.0004	g/hp-hr	0.0004	0.0000003	0.0001
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.43	0.005	g/hp-hr	0.005	0.000002	0.0001
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	0.54	--	--	--	--	--
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	0.54	--	--	--	--	--
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	0.54	--	--	--	--	--
Total Emissions from Haul Truck Engines:										**0.006**	**0.00007**	**0.02**
Total Emissions from Other Mobile Engines:										**0.01**	**0.00004**	**0.01**
Total Emissions from All Mobile Engines:										**0.02**	**0.0001**	**0.03**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.19 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 1													
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 1			Soot Emissions - Year 1		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.24	1.68	0.02	5.55	5.32	0.06	17.57
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.24	0.08	0.001	0.26	0.25	0.003	0.84
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.24	0.01	0.0001	0.05	0.03	0.0004	0.15
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.24	0.004	0.00004	0.02	0.01	0.0001	0.05
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.24	0.0007	0.000008	0.003	0.002	0.00003	0.01
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,150	hours	0.24	0.003	0.00004	0.01	0.01	0.0001	0.04
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.24	0.001	0.00001	0.005	0.003	0.00004	0.02
Motor Graders, 16M Class	3	297	0.68	16	6,000	hours	0.24	0.002	0.00002	0.008	0.006	0.00007	0.03
Water Trucks, 30,000 gallons	4	1,348	0.37	9	3,250	hours	0.24	0.01	0.0001	0.05	0.03	0.0004	0.15
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.24	0.02	0.0002	0.07	0.05	0.0006	0.21
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.24	0.0007	0.000009	0.003	0.002	0.00003	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.24	0.17	0.002	0.74	0.53	0.006	2.34
Stemming Truck	2	450	0.75	18	6,570	hours	0.24	0.002	0.00002	0.007	0.005	0.00006	0.02
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.24	0.002	0.00002	0.007	0.005	0.00006	0.02
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.44	0.002	0.00003	0.01	0.003	0.00003	0.01
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.24	0.001	0.00001	0.005	0.004	0.00005	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.24	0.002	0.00002	0.007	0.005	0.00006	0.02
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.44	0.0003	0.000004	0.001	0.0004	0.000005	0.002

Table H.19 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 1													
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 1			Soot Emissions - Year 1		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.24	0.0004	0.000005	0.002	0.001	0.00001	0.005
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.24	0.009	0.0001	0.04	0.03	0.0004	0.13
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.24	0.002	0.00002	0.008	0.006	0.00007	0.03
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.44	0.002	0.00002	0.008	0.002	0.00003	0.01
Tire Handler	1	90	0.75	18	6,570	hours	0.51	0.00002	0.0000003	0.0001	0.00002	0.0000003	0.0001
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.51	0.0004	0.000005	0.002	0.0004	0.000005	0.002
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.44	0.0006	0.000007	0.003	0.0007	0.000009	0.003
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.5	0.002	0.00002	0.009	0.002	0.00002	0.009
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.24	0.0005	0.000007	0.002	0.002	0.00002	0.008
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.44	0.0007	0.000008	0.003	0.0009	0.00001	0.004
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.51	0.0005	0.000005	0.002	0.0004	0.000005	0.002
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.44	0.0004	0.000005	0.002	0.0005	0.000006	0.002
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.44	0.0003	0.000004	0.001	0.0004	0.000005	0.002
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.44	0.0003	0.000004	0.001	0.0004	0.000005	0.002
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.24	0.0005	0.000006	0.002	0.002	0.00002	0.007
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.44	0.0003	0.000003	0.001	0.0003	0.000004	0.001
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.5	0.0008	0.00001	0.003	0.0008	0.00001	0.003
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.5	0.0005	0.000006	0.002	0.0005	0.000006	0.002

Table H.19 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 1													
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 1			Soot Emissions - Year 1		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.48	0.0006	0.000007	0.003	0.0006	0.000008	0.003
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.5	0.001	0.00001	0.004	0.001	0.00001	0.004
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.44	0.002	0.00003	0.01	0.003	0.00003	0.01
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.24	0.00004	0.0000004	0.0002	0.0001	0.000001	0.0005
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.24	0.0005	0.000005	0.002	0.001	0.00002	0.006
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.24	0.0001	0.000002	0.0006	0.0004	0.000005	0.002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.24	0.001	0.00001	0.005	0.004	0.00005	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.24	0.0005	0.000007	0.002	0.002	0.00002	0.008
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.48	0.0007	0.000008	0.003	0.0007	0.000009	0.003
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.24	0.02	0.0002	0.08	0.06	0.0007	0.25
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.24	0.00009	0.000001	0.0004	0.0003	0.000003	0.001
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.24	0.0006	0.000007	0.003	0.002	0.00002	0.008
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.24	0.01	0.0002	0.06	0.04	0.0005	0.19
Storm Water Pond Pump	1	200	1.00	24	500	hours	0.5	0.002	0.00003	0.0005	0.002	0.00003	0.0005
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	0.5	0.004	0.00005	0.001	0.004	0.00005	0.001
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.24	0.003	0.00006	0.009	0.01	0.0002	0.03
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.24	0.0002	0.0000006	0.00009	0.0008	0.000002	0.0003
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.24	0.002	0.000008	0.003	0.008	0.00003	0.009

Table H.19 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 1

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 1			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 1			Soot Emissions - Year 1		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.24	0.002	0.000003	0.001	0.005	0.000009	0.003
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.24	0.001	0.000001	0.0003	0.005	0.000004	0.001
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.24	0.002	0.000003	0.0009	0.005	0.000008	0.003
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.24	0.001	0.000002	0.0003	0.004	0.000007	0.0008
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.44	0.001	0.000002	0.0006	0.001	0.000003	0.0008
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.44	0.001	0.000005	0.001	0.002	0.000006	0.002
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.44	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	--	--	--	--	--	--	--
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	--	--	--	--	--	--	--
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	--	--	--	--	--	--	--
Total Emissions from Haul Truck Engines:											**5.58**	**0.07**	**18.41**
Total Emissions from Other Mobile Engines:											**0.92**	**0.01**	**3.87**
Total Emissions from All Mobile Engines:											**6.50**	**0.08**	**22.28**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

YEAR 5

Table H.20 Particulate Matter Emission Factors - Year 5

Process Code	Process Description	SCC Code	Emission Factors				Prod. Rate Units	Particulate Matter Emission Factor Inputs [a]																							Reference
			PM/TSP	PM_{10}	$PM_{2.5}$	Units		k (PM/TSP)	k (PM_{10})	k ($PM_{2.5}$)	A (ft^2)	U (mph)	M (%)	W (tons)	s (%)	sL (g/m^2)	S (mph)	P (days/yr)	a (PM/TSP)	a (PM_{10})	a ($PM_{2.5}$)	b (PM/TSP)	b (PM_{10})	b ($PM_{2.5}$)	u^*	u_t^*	e	f (%)	PE	
Drilling	Drilling	3-05-020-10	1.30	0.43	0.08	lb/hole	holes	1	0.33	0.06																					AP-42, Section 11.9, Table 11.9-4 (10/98)
Blast	Blasting	3-05-020-09	328.26	170.69	9.85	lb/blast	blasts	1	0.52	0.03	81,920																				AP-42, Section 11.9, Table 11.9-1 (10/98)
Loading	Loading	3-03-024-08	0.0007	0.0003	0.00005	lb/ton	tons	0.74	0.35	0.053		4.14	4																		AP-42, Section 13.2.4, Expression 1 (11/06)
HaulingHD	Haul Trucks - Hourly/Daily	3-05-020-11	21.25	5.46	0.55	lb/VMT	VMT	4.9	1.5	0.15				305	5.0				0.7	0.9	0.9	0.45	0.45	0.45						AP-42, Section 13.2.2, Expression 1a (11/06)
HaulingA	Haul Trucks - Annual	3-05-020-11	17.70	4.55	0.45	lb/VMT	VMT	4.9	1.5	0.15				305	5.0			61	0.7	0.9	0.9	0.45	0.45	0.45						AP-42, Section 13.2.2, Expressions 1a and 2 (11/06)
Bldzrs	Bulldozers	3-05-020-99	2.82	0.43	0.30	lb/hr	hrs	5.7	0.75	0.60			4		2.5				1.2	1.5	1.2	1.3	1.4	1.3						AP-42, Section 11.9, Table 11.9-1 (10/98)
SupVehUY5H	Support Vehicular Traffic on Unpaved Roads - Year 5 Hourly	3-03-999-99	8.89	2.29	0.23	lb/VMT	VMT	4.9	1.5	0.15				44.0	5.0				0.7	0.9	0.9	0.45	0.45	0.45						AP-42, Section 13.2.2, Expression 1a (11/06)
SupVehUY5D	Support Vehicular Traffic on Unpaved Roads - Year 5 Daily	3-03-999-99	8.78	2.26	0.23	lb/VMT	VMT	4.9	1.5	0.15				42.8	5.0				0.7	0.9	0.9	0.45	0.45	0.45						AP-42, Section 13.2.2, Expression 1a (11/06)
SupVehUY5A	Support Vehicular Traffic on Unpaved Roads - Year 5 Annual	3-03-999-99	7.31	1.88	0.19	lb/VMT	VMT	4.9	1.5	0.15				42.8	5.0			61	0.7	0.9	0.9	0.45	0.45	0.45						AP-42, Section 13.2.2, Expressions 1a and 2 (11/06)
SupVehPEY5H	Support Vehicular Traffic on Paved Entrance Road - Year 5 Hourly	3-03-999-99	0.05	0.01	0.003	lb/VMT	VMT	0.011	0.0022	0.00054				19.8		0.2														AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPEY5D	Support Vehicular Traffic on Paved Entrance Road - Year 5 Daily	3-03-999-99	0.05	0.01	0.002	lb/VMT	VMT	0.011	0.0022	0.00054				18.7		0.2														AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPEY5A	Support Vehicular Traffic on Paved Entrance Road - Year 5 Annual	3-03-999-99	0.04	0.008	0.002	lb/VMT	VMT	0.011	0.0022	0.00054				16.5		0.2		61												AP-42, Section 13.2.1, Expression 2 (01/11)
SupVehPIY5H	Support Vehicular Traffic on Paved Industrial Roads - Year 5 Hourly	3-03-999-99	1.23	0.25	0.06	lb/VMT	VMT	0.011	0.0022	0.00054				15.5		8.2														AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPIY5D	Support Vehicular Traffic on Paved Industrial Roads - Year 5 Daily	3-03-999-99	1.01	0.20	0.05	lb/VMT	VMT	0.011	0.0022	0.00054				12.8		8.2														AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPIY5A	Support Vehicular Traffic on Paved Industrial Roads - Year 5 Annual	3-03-999-99	0.80	0.16	0.04	lb/VMT	VMT	0.011	0.0022	0.00054				10.7		8.2		61												AP-42, Section 13.2.1, Expression 2 (01/11)
WtrTrksHD	Water Trucks - Hourly/Daily	3-05-020-99	17.06	4.38	0.44	lb/VMT	VMT	4.9	1.5	0.15				187.4	5.0				0.7	0.9	0.9	0.45	0.45	0.45						AP-42, Section 13.2.2, Expression 1a (11/06)
WtrTrksA	Water Trucks - Annual	3-05-020-99	14.21	3.65	0.37	lb/VMT	VMT	4.9	1.5	0.15				187.4	5.0			61	0.7	0.9	0.9	0.45	0.45	0.45						AP-42, Section 13.2.2, Expressions 1a and 2 (11/06)
GradersY5	Graders - Year 5	3-05-020-99	1.99	0.70	0.06	lb/VMT	VMT	1	0.60	0.031							4.78		0.040	0.051	0.040	2.5	2.0	2.5						AP-42, Section 11.9, Table 11.9-1 (10/98)
TrMlyCncPrt	Molybdnum Concentrate Transfer (Protected)	3-03-024-08	0.00002	0.00001	0.000002	lb/ton	tons	0.74	0.35	0.053		1.3	15																	AP-42, Section 13.2.4, Expression 1 (11/06)
DTrMlyCncPrt	Dried Molybdenum Concentrate Transfer (Protected)	3-03-024-08	0.00004	0.00002	0.000003	lb/ton	tons	0.74	0.35	0.053		1.3	10																	AP-42, Section 13.2.4, Expression 1 (11/06)
DTrMlyCnc	Dried Molybdenum Concentrate Transfer (Unprotected)	3-03-024-08	0.0003	0.0002	0.00002	lb/ton	tons	0.74	0.35	0.053		6.21	10																	AP-42, Section 13.2.4, Expression 1 (11/06)
TrCuCncPrt	Copper Concentrate Transfer (Protected)	3-03-024-08	0.00004	0.00002	0.000003	lb/ton	tons	0.74	0.35	0.053		1.3	10																	AP-42, Section 13.2.4, Expression 1 (11/06)
TrCuCnc	Copper Concentrate Loadout	3-03-024-08	0.0003	0.0002	0.00002	lb/ton	tons	0.74	0.35	0.053		6.21	10																	AP-42, Section 13.2.4, Expression 1 (11/06)
FiltTailPrt	Filtered Tailings Transfer (Protected)	3-03-024-08	0.00002	0.00001	0.000002	lb/ton	tons	0.74	0.35	0.053		1.3	15																	AP-42, Section 13.2.4, Expression 1 (11/06)
FiltTail	Filtered Tailings Transfer (Unprotected)	3-03-024-08	0.0002	0.00009	0.00001	lb/ton	tons	0.74	0.35	0.053		6.21	15																	AP-42, Section 13.2.4, Expression 1 (11/06)
CrushP	Primary Crushing - High Moisture Ore	3-03-024-05	0.02	0.009	0.002	lb/ton	tons			0.185																				AP-42, Section 11.24, Table 11.24-2 (08/82) and 11.19.2-2 (08/04)
CrushS	Secondary Crushing - High Moisture Ore	3-03-024-06	0.05	0.02	0.004	lb/ton	tons			0.185																				AP-42, Section 11.24, Table 11.24-2 (08/82) and 11.19.2-2 (08/04)
CrushT	Tertiary Crushing - High Moisture Ore	3-03-024-07	0.06	0.02	0.004	lb/ton	tons			0.185																				AP-42, Section 11.24, Table 11.24-2 (08/82) and 11.19.2-2 (08/04)
Screen	Screening	3-05-020-02	0.025	0.0087	0.0006	lb/ton	tons			0.068																				AP-42, Section 11.19, Table 11.19.2-2 (08/04)
MolyDry	Drying of High Moisture Ore	3-03-024-11	19.70	12.00	5.91	lb/ton	tons			0.30																				AP-42, Section 11.24, Table 11.24-2 (08/82) and Appendix B.2 (09/96)

Table H.20 Particulate Matter Emission Factors - Year 5

Process Code	Process Description	SCC Code	Emission Factors				Prod. Rate Units	Particulate Matter Emission Factor Inputs [a]																							Reference
			PM/TSP	PM_{10}	$PM_{2.5}$	Units		k (PM/TSP)	k (PM_{10})	k ($PM_{2.5}$)	A (ft^2)	U (mph)	M (%)	W (tons)	s (%)	sL (g/m^2)	S (mph)	P (days/yr)	a (PM/TSP)	a (PM_{10})	a ($PM_{2.5}$)	b (PM/TSP)	b (PM_{10})	b ($PM_{2.5}$)	u^*	u_t^*	e	f (%)	PE	
TrStnPrt	Material Transfer (Protected)	3-03-024-08	0.0002	0.00007	0.00001	lb/ton	tons	0.74	0.35	0.053		1.3	4																		AP-42, Section 13.2.4, Expression 1 (11/06)
TrStnUnp	Material Transfer (Unprotected)	3-03-024-08	0.001	0.0006	0.00009	lb/ton	tons	0.74	0.35	0.053		6.21	4																		AP-42, Section 13.2.4, Expression 1 (11/06)
LimeLd	Lime Product Loading, Enclosed Truck	3-05-016-26	0.61	0.29	0.04	lb/ton	tons	1	0.47	0.07																					AP-42, Section 11.17, Table 11.17-4 (02/98) and AP-42, Section 13.2.4 (11/06)
LimeSlk	Lime Slaking	3-05-016-09	8.00	8.00	8.00	lb/ton	tons																								AP-42, Section 11.17, Table 11.17-2 (02/98), Scrubber CE = 99%
ReagTr	Miscellaneous Reagent Material Transfer	3-03-024-04	0.008	0.004	0.0006	lb/ton	tons	0.74	0.35	0.053		6.21	1																		AP-42, Section 13.2.4, Expression 1 (11/06)
ICDE1	Internal Combustion Diesel Engine 37 ≤ kW > 75	2-02-001-02	0.40	0.40	0.40	g/kW-hr	hours	1	1	1																					NSPS Emission Standard
ICDE2	Internal Combustion Diesel Engine 225 ≤ kW > 450	2-02-001-02	0.20	0.20	0.20	g/kW-hr	hours	1	1	1																					NSPS Emission Standard
ICDE3	Internal Combustion Diesel Engine > 560 kW	2-02-001-02	0.20	0.20	0.20	g/kW-hr	hours	1	1	1																					NSPS Emission Standard
DFB	Diesel (Distillate Oil) Fired Boiler <100 MMBtu/hr	1-02-005-03	3.30	2.30	1.54	lb/1000 gal	hours	1	0.5	0.12																					AP-42, Section 1.3, Tables 1.3-1, 1.3-2 and 1.3-6 (09/98)
CADC	Crushing Area Dust Collector	none	1.42	0.64	0.12	lb/hr	hours	2.22	1.00	0.18																					Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
SARTDC	Stockpile Area and Reclaim Tunnel Dust Collector	none	3.11	1.47	0.22	lb/hr	hours	2.11	1.00	0.15																					Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
SFCDC	Stockpile Feed Conveyor Transfer Point Dust Collector	none	0.76	0.36	0.05	lb/hr	hours	2.11	1.00	0.15																					Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
PCADC	Pebble Crusher Area Dust Collector	none	0.96	0.32	0.06	lb/hr	hours	2.99	1.00	0.18																					Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
CCDC	Copper Concentrate Dust Collectors	none	3.76	1.78	0.27	lb/hr	hours	2.11	1.00	0.15																					Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
MS/EP	Molybdenum Scrubber / Electrostatic Precipitator	none	0.015	0.014	0.013	lb/hr	hours	1.10	1.00	0.94																					Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
MDC	Molybdenum Dust Collector	none	0.112	0.053	0.008	lb/hr	hours	2.11	1.00	0.15																					Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
LDC	Laboratory Dust Collectors	none	0.008	0.005	0.002	gr/dscf	dscf	1.65	1.00	0.49																					Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
SFDC	SAG Feed Conveyor Dust Collector	none	0.97	0.46	0.07	lb/hr	hours	2.11	1.00	0.15																					Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
WindROM	Wind Erosion - Run of Mine Stockpile	3-03-888-01	0.21	0.11	0.02	ton/acre-yr	acres	1	0.5	0.075					2.5												38	4.77	22	FDEMI[b] (07/83), p. 51-57, MRI Equation, AP-42, Section 13.2.5 (11/06) and Table 13.2.4-1 (11/06)
WindCvd	Wind Erosion - Covered Stockpile	3-03-888-01	0	0	0	ton/acre-yr	acres																								Assumed
TailStrg	Wind Erosion - Tailings Storage	3-03-888-01	0.02	0.01	0.002	ton/acre-yr	acres	1	0.5	0.075															0.57	0.43				AP-42, Section 13.2.5 (11/06)

[a] k = particle size multiplier, A = horizonal area of blasting surface, U = mean wind speed, M = material moisture content, W = mean vehicle weight, s = surface material silt content, sL = road surface silt loading, S = mean vehicle speed, P = number of days per year with at least 0.01 inches of precipitation, a = constant based on particle size, b = constant based on particle size, u^* = friction velocity, u_t^* = threshold friction velocity, e = surface erodibility, f = percentage of time the wind speed exceeds 12 mph, PE = Thornthwaite's Precipitation-Evaporation Index

[b] FDEMI = *Fugitive Dust Emission Factors for the Mining Industry*

Table H.21 Gaseous Emission Factors - Year 5

Process Code	Process Description	SCC Code	Emission Factor									Prod. Rate Units	Reference
			CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	Units		
Blast	Blasting	3-05-020-09	67.00	17.00	2.00	0	0	566	0.02	0.005	lb/tons ANFO	tons ANFO	AP-42 Section 13.3, Table 13.3-1 (02/80) and 40 CFR 98, Tables C-1 and C-2[a]
SX	Solvent Extraction Mixers and Settlers	4-90-001-99	0	0	0	9.43E-05	0	0	0	0	lb/hr-ft^2	hours	Hydrometallurgy of Copper (Control Efficiency of 66%)
EW	Electrowining Tankhouse	none	0	0	0	0	1.57E-04	0	0	0	lb/hr-ft^2	hours	Applied Environmental Consultants - Report[b]
ICDE1	Internal Combustion Diesel Engine 37 ≤ kW > 75	2-02-001-02	5.0	4.4	0.0066	0.3	0	694	0.03	0.006	g/kW-hr	hours	NSPS Emission Standard, Complete Sulfur Conversion[c], and 40 CFR 98, Tables C-1 and C-2
ICDE2	Internal Combustion Diesel Engine 225 ≤ kW > 450	2-02-001-02	3.5	3.7	0.0066	0.3	0	694	0.03	0.006	g/kW-hr	hours	NSPS Emission Standard, Complete Sulfur Conversion[c], and 40 CFR 98, Tables C-1 and C-2
ICDE3	Internal Combustion Diesel Engine > 560 kW	2-02-001-02	3.5	6.0	0.0066	0.40	0	694	0.03	0.006	g/kW-hr	hours	NSPS Emission Standard, Complete Sulfur Conversion[c], and 40 CFR 98, Tables C-1 and C-2
DFB	Diesel (Distillate Oil) Fired Boiler <100 MMBtu/hr	1-02-005-03	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	lb/1000 gal	hours	AP-42 Section 1.3, Tables 1.3-1 and 1.3-3 (05/10)[c] and 40 CFR 98, Tables C-1 and C-2
C7DT	C7 Distribution Tank	4-03-010-19	0	0	0	1.08E-01	0	0	0	0	lb/hr	hours	EPA Tanks Program 4.0[d]
MST	MIBC Storage Tank	4-90-999-98	0	0	0	3.53E-03	0	0	0	0	lb/hr	hours	EPA Tanks Program 4.0[d]
DFSTHV	Diesel Fuel Storage Tank - Heavy Vehicles	4-03-010-19	0	0	0	1.39E-02	0	0	0	0	lb/hr	hours	EPA Tanks Program 4.0[d]

[a] Assumes a fuel oil to ammonium nitrate ratio of 9.0%.

[b] "Measurement of Sulfuric Acid Mist Emissions from the Cyprus Twin Buttes Copper Company Electrowinning Tankhouse" (02/93).

[c] SO_2 emissions are calculated using a sulfur content of 0.0015% for diesel fuel.

[d] Assumes continuous operation.

Table H.22 Particulate Matter Control Efficiencies - Year 5

Control Code	Control Description	Pick-up Efficiency (%)	Control Efficiency (%)	Reference
CADC	Crushing Area Dust Collector (PC-CADC)	100%	--	Assumed
SARTDC	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	100%	--	Assumed
SFCDC	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	100%	--	Assumed
PCADC	Pebble Crusher Area Dust Collector (PC-PCADC)	100%	--	Assumed
CCDC	Copper Concentrate Dust Collectors (PC-CCDC1/CCDC2)	100%	--	Assumed
MS/EP	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	100%	--	Assumed
LSV	Lime Storage Bin Vent (PC-LSBV)	100%	90%	Vendor Specification
LSS	Lime Slaker Scrubber (PC-LSS)	100%	99%	AP-42, Table B.2-3 (09/96)
SMSV	Sodium Metasilicate Storage Bin Vent (PC-SMSBV)	100%	90%	Vendor Specification
CVS	EW Cell Ventilation Scrubbers (PC-CVS)	100%	99%	Engineering Design
MDC	Molybdenum Dust Collector (PC-MDC)	100%	--	Assumed
SFDC	SAG Feed Conveyor Dust Collector (PC-SFDC)	100%	--	Assumed
HaulRdUI	Road Watering (Inside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
HaulRdUO	Road Watering (Outside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
HaulRdWTI	Road Watering - Water Trucks (Inside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
HaulRdWTO	Road Watering - Water Trucks (Outside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
Water	Addition of Process Water	N/A	100%	Assumed
WSpry	Water Spray at Unprotected Points	N/A	82.5%	Average Value of AP-42, p. 11.19.1-5 (11/95)
Wet	Wet Process	N/A	100%	Assumed
Clean	Wet, Cleaned Ore (no fines)	N/A	100%	Assumed
Enclosed	Totally Enclosed Transfer Point	N/A	100%	Assumed
UndrGrd	Underground Transfer Point	N/A	100%	Assumed
None	No Pollution Controls	0%	0%	Assumed

[a] EPA Document gives methods for calculating efficiencies - pages 5-9 to 5-14

Table H.23 Annual Particulate Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 5	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 5		PM_{10} Emissions (tpy) - Year 5		$PM_{2.5}$ Emissions (tpy) - Year 5	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Mining																		
MN01	Drilling	Drilling	3-05-020-10	F	27,840	holes	1.30	0.43	0.08	lb/hole	None	0%	18.10	18.10	6.03	6.03	1.12	1.12
MN02	Blasting	Blast	3-05-020-09	F	348	blasts	328.26	170.69	9.85	lb/blast	None	0%	57.12	57.12	29.70	29.70	1.71	1.71
MN03	Loading Concentrate Ore	Loading	3-03-024-08	F	27,375,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	9.60	9.60	4.54	4.54	0.69	0.69
MN04	Loading Leach Ore	Loading	3-03-024-08	F	1,825,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0.64	0.64	0.30	0.30	0.05	0.05
MN05	Loading Waste Rock	Loading	3-03-024-08	F	80,300,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	28.16	28.16	13.32	13.32	2.02	2.02
MN06a	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Inside the Pit)	HaulingA	3-05-020-11	F	373,295	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUI	90%	3,302.80	330.28	848.66	84.87	84.87	8.49
MN06b	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Outside the Pit)	HaulingA	3-05-020-11	F	215,889	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUO	90%	1,910.12	191.01	490.81	49.08	49.08	4.91
MN07a	Hauling Leach Ore to Leach Pad (Inside the Pit)	HaulingA	3-05-020-11	F	11,033	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUI	90%	97.62	9.76	25.08	2.51	2.51	0.25
MN07b	Hauling Leach Ore to Leach Pad (Outside the Pit)	HaulingA	3-05-020-11	F	18,206	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUO	90%	161.08	16.11	41.39	4.14	4.14	0.41
MN08a	Hauling Waste Rock to Waste Rock Storage Area (Inside the Pit)	HaulingA	3-05-020-11	F	786,088	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUI	90%	6,955.06	695.51	1,787.12	178.71	178.71	17.87
MN08b	Hauling Waste Rock to Waste Rock Storage Area (Outside the Pit)	HaulingA	3-05-020-11	F	1,392,110	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUO	90%	12,316.94	1,231.69	3,164.87	316.49	316.49	31.65
MN09	Unloading Concentrate Ore to Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	2,737,500	tons	0.001	0.0006	0.00009	lb/ton	None	0%	1.63	1.63	0.77	0.77	0.12	0.12
MN10	Unloading Leach Ore to Leach Pad	TrStnUnp	3-03-024-08	F	1,825,000	tons	0.001	0.0006	0.00009	lb/ton	None	0%	1.08	1.08	0.51	0.51	0.08	0.08
MN11	Unloading Waste Rock to Waste Rock Storage Area	TrStnUnp	3-03-024-08	F	80,300,000	tons	0.001	0.0006	0.00009	lb/ton	None	0%	47.71	47.71	22.57	22.57	3.42	3.42
MN12	Bulldozer Use	Bldzrs	3-05-020-99	F	55,170	hrs	2.82	0.43	0.30	lb/hr	None	0%	77.87	77.87	11.74	11.74	8.18	8.18
MN13a	Water Truck Use (Inside the Pit)	WtrTrksA	3-05-020-99	F	59,847	VMT	14.21	3.65	0.37	lb/VMT	HaulRdWTI	90%	425.29	42.53	109.28	10.93	10.93	1.09
MN13b	Water Truck Use (Outside the Pit)	WtrTrksA	3-05-020-99	F	83,153	VMT	14.21	3.65	0.37	lb/VMT	HaulRdWTO	90%	590.91	59.09	151.83	15.18	15.18	1.52
MN14	Grader Use	GradersY5	3-05-020-99	F	87,000	VMT	1.99	0.70	0.06	lb/VMT	None	0%	86.69	86.69	30.35	30.35	2.69	2.69
MN15a	Support Vehicle Use on Unpaved Roads (Inside the Pit)	SupVehUY5A	3-03-999-99	F	272,396	VMT	7.31	1.88	0.19	lb/VMT	HaulRdUI	90%	995.53	99.55	255.80	25.58	25.58	2.56
MN15b	Support Vehicle Use on Unpaved Roads (Outside the Pit)	SupVehUY5A	3-03-999-99	F	272,396	VMT	7.31	1.88	0.19	lb/VMT	HaulRdUO	90%	995.53	99.55	255.80	25.58	25.58	2.56
M16a	Support Vehicle Use on the Paved Entrance Road (within the process area boundary)	SupVehPEY5A	3-03-999-99	F	74,399	VMT	0.04	0.008	0.002	lb/VMT	None	0%	1.58	1.58	0.32	0.32	0.08	0.08
M16b	Support Vehicle Use on the Paved Entrance Road (outside of the process area boundary)	SupVehPEY5A	3-03-999-99	F	322,577	VMT	0.04	0.008	0.002	lb/VMT	None	0%	6.84	6.84	1.37	1.37	0.34	0.34
M16c	Support Vehicle Use on Paved Industrial Roads	SupVehPIY5A	3-03-999-99	F	185,705	VMT	0.80	0.16	0.04	lb/VMT	None	0%	74.37	74.37	14.87	14.87	3.65	3.65
Primary Crushing, Conveying, Coarse Ore Storage, and Reclaim Conveying																		
PC01	Wind Erosion of the Run of Mine Stockpile	WindROM	3-03-888-01	F	26	acres	0.21	0.11	0.02	ton/acre-yr	None	0%	5.43	5.43	2.72	2.72	0.41	0.41
PC02	Unloading to Primary Crusher Dump Hopper (H-CDp) from Haul Trucks or Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	27,375,000	tons	0.001	0.0006	0.00009	lb/ton	WSpry	82.5%	16.27	2.85	7.69	1.35	1.16	0.20
PC03	Primary Crusher (PCr)	CrushP	3-03-024-05	NF	43,362,000	tons	0.02	0.009	0.002	lb/ton	CADC	100%	433.62	0	195.13	0	36.14	0
PC04	Primary Crusher (PCr) to Crusher Discharge Hopper (H-CDs)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
PC05	Crusher Discharge Hopper (H-CDs) to Crusher Discharge Feeder (F-CD)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	3.38	0	1.60	0	0.24	0
PC06	Crusher Discharge Feeder (F-CD) to Stockpile Feed Conveyor No. 1 (CV-SF1)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	3.38	0	1.60	0	0.24	0

Table H.23 Annual Particulate Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 5	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 5		PM_{10} Emissions (tpy) - Year 5		$PM_{2.5}$ Emissions (tpy) - Year 5	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
PC07	Stockpile Feed Conveyor No. 1 (CV-SF1) to Stockpile Feed Conveyor No. 2 (CV-SF2)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SFCDC	100%	3.38	0	1.60	0	0.24	0
PC08	Stockpile Feed Conveyor No. 2 (CV-SF2) to Covered Coarse Ore Stockpile	TrStnPrt	3-03-024-08	F	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	3.38	0	1.60	0	0.24	0
PC09	Wind Erosion of the Coarse Ore Stockpile	WindCvd	3-03-888-01	F	5	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
PC10	Coarse Ore Stockpile to Reclaim Feeders (F-R1/R4)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	UndrGrd [a]	100%	0	0	0	0	0	0
PC11	Reclaim Feeders (F-R1/R4) to Reclaim Conveyor (CV-R)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	3.38	0	1.60	0	0.24	0
PC12	Reclaim Conveyor (CV-R) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	3.38	0	1.60	0	0.24	0
PC13	Pebble Conveyor No. 3 (CV-Pb3) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.49	0	0.23	0	0.03	0
PC14	SAG Mill Feed Conveyor (CV-SMF) to SAG Mill (M-SAG)	TrStnPrt	3-03-024-08	NF	49,631,400	tons	0.0002	0.00007	0.00001	lb/ton	Water [a]	100%	0	0	0	0	0	0
Milling																		
M01	SAG Mill (M-SAG)	CrushS	3-03-024-06	NF	49,669,200	tons	0.05	0.02	0.004	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M02	SAG Mill (M-SAG) to Trommel Screen (Sn-T)	TrStnPrt	3-03-024-08	NF	49,669,200	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M03	Trommel Screen (Sn-T)	Screen	3-05-020-02	NF	49,669,200	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M04	Trommel Screen (Sn-T) to Pebble Conveyor No. 1 (CV-Pb1)	TrStnPrt	3-03-024-08	NF	10,505,042	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M05	Pebble Conveyor No. 1 (CV-Pb1) to Pebble Wash Screen (Sn-PbW)	TrStnPrt	3-03-024-08	NF	10,505,042	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M06	Pebble Wash Screen (Sn-PbW)	Screen	3-05-020-02	NF	10,505,042	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M07	Pebble Wash Screen (Sn-PbW) to Pebble Conveyor No. 2	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M08	Pebble Conveyor No. 2 (CV-Pb2) to SAG Oversize Surge Bin (B-SAGOS)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.49	0	0.23	0	0.03	0
M09	SAG Oversize Surge Bin (B-SAGOS) to Pebble Crusher Feeder (F-PbC)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.49	0	0.23	0	0.03	0
M10	Pebble Crusher Feeder (F-PbC) to Pebble Crusher (PbC)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M11	Pebble Crusher (PbC)	CrushT	3-03-024-07	NF	6,269,400	tons	0.06	0.02	0.004	lb/ton	PCADC	100%	188.08	0	62.69	0	11.61	0
M12	Pebble Crusher (PbC) to Pebble Conveyor No. 3 (CV-Pb3)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.49	0	0.23	0	0.03	0
Copper Concentrate Dewatering and Stacking																		
CCD01	Copper Concentrate Filters (Ft-CC1/CC4) to Copper Concentrate Conveyor (CV-CC)	TrCuCncPrt	3-03-024-08	NF	550,936	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
CCD02	Copper Concentrate Conveyor (CV-CC) to Copper Concentrate Loadout Stockpile	TrCuCncPrt	3-03-024-08	F	550,936	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.01	0	0.006	0	0.0009	0
CCD03	Wind Erosion of Copper Concentrate Loadout Stockpile	WindCvd	3-03-888-01	F	1.17	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
CCD04	Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loaders	TrCuCncPrt	3-03-024-08	F	550,936	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.01	0	0.006	0	0.0009	0
Molybdenum Dewatering and Packaging																		
MD01	Molybdenum Concentrate Filter (Ft-MC) to Molybdenum Concentrate Dryer (D-MC)	TrMlyCncPrt	3-03-024-08	NF	6,377	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD02	Molybdenum Concentrate Dryer	MolyDry	3-03-024-11	NF	6,377	tons	19.70	12.00	5.91	lb/ton	MS/EP	100%	62.81	0	38.26	0	18.84	0
MD03	Molybdenum Concentrate Dryer (D-MC) to Molybdenum Concentrate Bin (B-MC)	DTrMlyCncPrt	3-03-024-08	NF	6,377	tons	0.00004	0.00002	0.000003	lb/ton	MDC	100%	0.0001	0	0.00007	0	0.00001	0
MD04	Molybdenum Concentrate Bin (B-MC) to Molybdenum Concentrate Hopper (H-MC)	DTrMlyCnc	3-03-024-08	NF	6,377	tons	0.0003	0.0002	0.00002	lb/ton	None	0%	0.001	0.001	0.0005	0.0005	0.00008	0.00008

Table H.23 Annual Particulate Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 5	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 5		PM_{10} Emissions (tpy) - Year 5		$PM_{2.5}$ Emissions (tpy) - Year 5	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
MD05	Molybdenum Concentrate Hopper (H-MC) to Molybdenum Concentrate Conveyor (CV-MC)	DTrMlyCncPrt	3-03-024-08	NF	6,377	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD06	Molybdenum Concentrate Conveyor (CV-MC) to Molybdenum Packaging and Weigh System (MPS)	DTrMlyCnc	3-03-024-08	NF	6,377	tons	0.0003	0.0002	0.00002	lb/ton	MDC	100%	0.001	0	0.0005	0	0.00008	0
Tailings Dewatering and Placement																		
TDS01	Tailings Filters (Ft-T1/T14) to Tailings Belt Feeders (F-T1/T14)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS02	Tailings Belt Feeders (F-T1/T14) to Fixed Tailings Conveyor No. 1 (CV-F1)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS03	Fixed Tailings Conveyor No. 1 (CV-F1) to Fixed Tailings Conveyor No. 2 (CV-F2)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS04	Fixed Tailings Conveyor No. 2 (CV-F2) to Fixed Tailings Conveyor No. 3 (CV-F3)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.52	0.52	0.25	0.25	0.04	0.04
TDS05	Fixed Tailings Conveyor No. 3 (CV-F3) to Relocatable Conveyor (CV-R1)	FiltTailPrt	3-03-024-08	F	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.52	0.52	0.25	0.25	0.04	0.04
TDS06	Relocatable Conveyor (CV-R1) to Shiftable Conveyor (CV-S1)	FiltTailPrt	3-03-024-08	F	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.52	0.52	0.25	0.25	0.04	0.04
TDS07	Shiftable Conveyor (CV-S1) to Belt Wagon Conveyor (CV-BW1)	FiltTail	3-03-024-08	F	42,804,687	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	4.00	4.00	1.89	1.89	0.29	0.29
TDS08	Belt Wagon Conveyor (CV-BW1) to Spreader Crawler Mounted Conveyor (CV-SP1)	FiltTail	3-03-024-08	F	42,804,687	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	4.00	4.00	1.89	1.89	0.29	0.29
TDS09	Spreader Crawler Mounted Conveyor (CV-SP1) to Tailings Storage	FiltTail	3-03-024-08	F	42,804,687	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	4.00	4.00	1.89	1.89	0.29	0.29
TDS10	Wind Erosion of Tailings Storage	TailStrg	3-03-888-01	F	1,500	acres	0.02	0.01	0.002	ton/acre-yr	None	0%	30.23	30.23	15.11	15.11	2.27	2.27
Fuel Burning Equipment																		
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	8,760	hours	3.30	2.30	1.54	lb/1000 gal	None	0%	0.63	0.63	0.44	0.44	0.30	0.30
					6.0	MMBtu/hr												
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.11	0.11	0.11	0.11	0.11	0.11
					1,000	kW												
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.11	0.11	0.11	0.11	0.11	0.11
					1,000	kW												
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.08	0.08	0.08	0.08	0.08	0.08
					750	kW												
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.08	0.08	0.08	0.08	0.08	0.08
					750	kW												
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	500	hours	0.40	0.40	0.40	g/kW-hr	None	0%	0.01	0.01	0.01	0.01	0.01	0.01
					50	kW												
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.03	0.03	0.03	0.03	0.03	0.03
					400	hp												
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.03	0.03	0.03	0.03	0.03	0.03
					400	hp												

Table H.23 Annual Particulate Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 5	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 5		PM_{10} Emissions (tpy) - Year 5		$PM_{2.5}$ Emissions (tpy) - Year 5	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Miscellaneous Sources																		
MS01	Transfer of Lime to the Lime Storage Bin (B-L)	LimeLd	3-05-016-26	NF	56,700	tons	0.61	0.29	0.04	lb/ton	LSV [a]	90%	1.73	1.73	0.82	0.82	0.12	0.12
MS02	Lime Storage Bin (B-L) to Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2)	ReagTr	3-03-024-04	NF	56,700	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS03	Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2) to Lime Slakers 1 and 2 (T-LS1/2)	ReagTr	3-03-024-04	NF	56,700	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS04	Lime Slaking in Lime Slakers 1 and 2 (T-LS1/2)	LimeSlk	3-05-016-09	NF	56,700	tons	8.00	8.00	8.00	lb/ton	LSS	99%	226.80	2.27	226.80	2.27	226.80	2.27
MS05	Transfer of Sodium Metasilicate to the Sodium Metasilicate Storage Bin (B-SM)	ReagTr	3-03-024-04	NF	3,000	tons	0.008	0.004	0.0006	lb/ton	SMSV [a]	90%	0.001	0.001	0.0006	0.0006	0.00009	0.00009
MS06	Transfer of Flocculant from Supersacks to Flocculant Storage Bins (B-F1/F2)	ReagTr	3-03-024-04	NF	1,100	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.005	0.005	0.002	0.002	0.0003	0.0003
MS07	Transfer of Guar from Bags to Guar Feeder (F-Gu)	ReagTr	3-03-024-04	NF	150	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.0006	0.0006	0.0003	0.0003	0.00004	0.00004
MS08	Transfer of Granular Cobalt Sulfate from Bags to Cobalt Sulfate Feeder (F-CoS)	ReagTr	3-03-024-04	NF	6	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.00002	0.00002	0.00001	0.00001	0.000002	0.000002
Particulate Matter Pollution Control Equipment with Emission Limits																		
PCL01	Crushing Area Dust Collector (PC-CADC)	CADC	none	NF	8,760	hours	1.42	0.64	0.12	lb/hr	--	--	--	6.22	--	2.80	--	0.52
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	SARTDC	none	NF	8,760	hours	3.11	1.47	0.22	lb/hr	--	--	--	13.61	--	6.44	--	0.97
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	SFCDC	none	NF	8,760	hours	0.76	0.36	0.05	lb/hr	--	--	--	3.33	--	1.58	--	0.24
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	PCADC	none	NF	8,760	hours	0.96	0.32	0.06	lb/hr	--	--	--	4.19	--	1.40	--	0.26
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	CCDC	none	NF	8,760	hours	3.76	1.78	0.27	lb/hr	--	--	--	16.48	--	7.80	--	1.18
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	CCDC	none	NF	8,760	hours	3.76	1.78	0.27	lb/hr	--	--	--	16.48	--	7.80	--	1.18
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	MS/EP	none	NF	8,760	hours	0.015	0.014	0.013	lb/hr	--	--	--	0.07	--	0.06	--	0.06
PCL08	Molybdenum Dust Collector (PC-MDC)	MDC	none	NF	8,760	hours	0.112	0.053	0.008	lb/hr	--	--	--	0.49	--	0.23	--	0.04
PCL09	Laboratory Dust Collector 1 (PC-L1)	LDC	none	NF	4,357,315,176	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	2.56	--	1.56	--	0.76
PCL10	Laboratory Dust Collector 2 (PC-L2)	LDC	none	NF	4,357,315,176	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	2.56	--	1.56	--	0.76
PCL11	Laboratory Dust Collector 3 (PC-L3)	LDC	none	NF	4,357,315,176	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	2.56	--	1.56	--	0.76
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	SFDC	none	NF	8,760	hours	0.97	0.46	0.07	lb/hr	--	--	--	4.26	--	2.01	--	0.31
Total Non-Fugitive Emissions (excluding tailpipe emissions):													**933.50**	**78.46**	**533.76**	**39.03**	**295.66**	**10.23**
Total Fugitive Emissions (excluding tailpipe emissions):													**28,230.63**	**3,238.04**	**7,300.35**	**874.81**	**742.20**	**99.24**
Total Emissions (excluding tailpipe emissions):													**29,164.13**	**3,316.50**	**7,834.12**	**913.84**	**1,037.86**	**109.47**
Tailpipe Emissions (see Tables H.29-H.31):													**29.39**	**29.39**	**29.39**	**29.39**	**29.39**	**29.39**

[a] The control efficiency for this emission unit is inherent to the process. Therefore, the control efficiency is applied to both uncontrolled and controlled emissions.

Table H.24 Maximum Daily Particulate Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 5	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 5		PM_{10} Emissions (tpd) - Year 5		$PM_{2.5}$ Emissions (tpd) - Year 5	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Mining																		
MN01	Drilling	Drilling	3-05-020-10	F	80	holes	1.30	0.43	0.08	lb/hole	None	0%	0.05	0.05	0.02	0.02	0.003	0.003
MN02	Blasting	Blast	3-05-020-09	F	1.0	blasts	328.26	170.69	9.85	lb/blast	None	0%	0.16	0.16	0.09	0.09	0.005	0.005
MN03	Loading Concentrate Ore	Loading	3-03-024-08	F	90,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0.03	0.03	0.01	0.01	0.002	0.002
MN04	Loading Leach Ore	Loading	3-03-024-08	F	6,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0.002	0.002	0.001	0.001	0.0002	0.0002
MN05	Loading Waste Rock	Loading	3-03-024-08	F	264,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0.09	0.09	0.04	0.04	0.007	0.007
MN06a	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Inside the Pit)	HaulingHD	3-05-020-11	F	1,227	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	13.04	1.30	3.35	0.33	0.33	0.03
MN06b	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Outside the Pit)	HaulingHD	3-05-020-11	F	710	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	7.54	0.75	1.94	0.19	0.19	0.02
MN07a	Hauling Leach Ore to Leach Pad (Inside the Pit)	HaulingHD	3-05-020-11	F	36	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	0.39	0.04	0.10	0.01	0.01	0.001
MN07b	Hauling Leach Ore to Leach Pad (Outside the Pit)	HaulingHD	3-05-020-11	F	60	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	0.64	0.06	0.16	0.02	0.02	0.002
MN08a	Hauling Waste Rock to Waste Rock Storage Area (Inside the Pit)	HaulingHD	3-05-020-11	F	2,584	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	27.45	2.75	7.05	0.71	0.71	0.071
MN08b	Hauling Waste Rock to Waste Rock Storage Area (Outside the Pit)	HaulingHD	3-05-020-11	F	4,577	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	48.62	4.86	12.49	1.25	1.25	0.125
MN09	Unloading Concentrate Ore to Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	90,000	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0.05	0.05	0.03	0.03	0.004	0.004
MN10	Unloading Leach Ore to Leach Pad	TrStnUnp	3-03-024-08	F	6,000	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0.004	0.004	0.002	0.002	0.0003	0.0003
MN11	Unloading Waste Rock to Waste Rock Storage Area	TrStnUnp	3-03-024-08	F	264,000	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0.16	0.16	0.07	0.07	0.01	0.01
MN12	Bulldozer Use	Bldzrs	3-05-020-99	F	151	hrs	2.82	0.43	0.30	lb/hr	None	0%	0.21	0.21	0.03	0.03	0.02	0.02
MN13a	Water Truck Use (Inside the Pit)	WtrTrksHD	3-05-020-99	F	197	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTI	90%	1.68	0.17	0.43	0.04	0.04	0.004
MN13b	Water Truck Use (Outside the Pit)	WtrTrksHD	3-05-020-99	F	273	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTO	90%	2.33	0.23	0.60	0.06	0.06	0.006
MN14	Grader Use	GradersY5	3-05-020-99	F	238	VMT	1.99	0.70	0.06	lb/VMT	None	0%	0.24	0.24	0.08	0.08	0.007	0.007
MN15a	Support Vehicle Use on Unpaved Roads (Inside the Pit)	SupVehUY5D	3-03-999-99	F	746	VMT	8.78	2.26	0.23	lb/VMT	HaulRdUI	90%	3.27	0.33	0.84	0.08	0.08	0.008
MN15b	Support Vehicle Use on Unpaved Roads (Outside the Pit)	SupVehUY5D	3-03-999-99	F	746	VMT	8.78	2.26	0.23	lb/VMT	HaulRdUO	90%	3.27	0.33	0.84	0.08	0.08	0.008
M16a	Support Vehicle Use on the Paved Entrance Road (within the process area boundary)	SupVehPEY5D	3-03-999-99	F	302	VMT	0.05	0.01	0.002	lb/VMT	None	0%	0.008	0.008	0.002	0.002	0.0004	0.0004
M16b	Support Vehicle Use on the Paved Entrance Road (outside of the process area boundary)	SupVehPEY5D	3-03-999-99	F	1,310	VMT	0.05	0.01	0.002	lb/VMT	None	0%	0.03	0.03	0.007	0.007	0.002	0.002
M16c	Support Vehicle Use on Paved Industrial Roads	SupVehPIY5D	3-03-999-99	F	610	VMT	1.01	0.20	0.05	lb/VMT	None	0%	0.31	0.31	0.06	0.06	0.02	0.02
Primary Crushing, Conveying, Coarse Ore Storage, and Reclaim Conveying																		
PC01	Wind Erosion of the Run of Mine Stockpile	WindROM	3-03-888-01	F	26	acres	0.21	0.11	0.02	ton/acre-yr	None	0%	0.01	0.01	0.007	0.007	0.001	0.001
PC02	Unloading to Primary Crusher Dump Hopper (H-CDp) from Haul Trucks or Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	166,800	tons	0.001	0.0006	0.00009	lb/ton	WSpry	82.5%	0.10	0.02	0.05	0.008	0.007	0.001
PC03	Primary Crusher (PCr)	CrushP	3-03-024-05	NF	166,800	tons	0.02	0.009	0.002	lb/ton	CADC	100%	1.67	0	0.75	0	0.14	0
PC04	Primary Crusher (PCr) to Crusher Discharge Hopper (H-CDs)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
PC05	Crusher Discharge Hopper (H-CDs) to Crusher Discharge Feeder (F-CD)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	0.01	0	0.006	0	0.0009	0
PC06	Crusher Discharge Feeder (F-CD) to Stockpile Feed Conveyor No. 1 (CV-SF1)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	0.01	0	0.006	0	0.0009	0

Table H.24 Maximum Daily Particulate Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 5	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 5		PM_{10} Emissions (tpd) - Year 5		$PM_{2.5}$ Emissions (tpd) - Year 5	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
PC07	Stockpile Feed Conveyor No. 1 (CV-SF1) to Stockpile Feed Conveyor No. 2 (CV-SF2)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SFCDC	100%	0.01	0	0.006	0	0.0009	0
PC08	Stockpile Feed Conveyor No. 2 (CV-SF2) to Covered Coarse Ore Stockpile	TrStnPrt	3-03-024-08	F	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	0.01	0	0.006	0	0.0009	0
PC09	Wind Erosion of the Coarse Ore Stockpile	WindCvd	3-03-888-01	F	5	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
PC10	Coarse Ore Stockpile to Reclaim Feeders (F-R1/R4)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	UndrGrd [a]	100%	0	0	0	0	0	0
PC11	Reclaim Feeders (F-R1/R4) to Reclaim Conveyor (CV-R)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	0.01	0	0.006	0	0.0009	0
PC12	Reclaim Conveyor (CV-R) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.01	0	0.006	0	0.0009	0
PC13	Pebble Conveyor No. 3 (CV-Pb3) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.003	0	0.002	0	0.0002	0
PC14	SAG Mill Feed Conveyor (CV-SMF) to SAG Mill (M-SAG)	TrStnPrt	3-03-024-08	NF	209,308	tons	0.0002	0.00007	0.00001	lb/ton	Water [a]	100%	0	0	0	0	0	0
Milling																		
M01	SAG Mill (M-SAG)	CrushS	3-03-024-06	NF	209,432	tons	0.05	0.02	0.004	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M02	SAG Mill (M-SAG) to Trommel Screen (Sn-T)	TrStnPrt	3-03-024-08	NF	209,432	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M03	Trommel Screen (Sn-T)	Screen	3-05-020-02	NF	209,432	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M04	Trommel Screen (Sn-T) to Pebble Conveyor No. 1 (CV-Pb1)	TrStnPrt	3-03-024-08	NF	44,426	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M05	Pebble Conveyor No. 1 (CV-Pb1) to Pebble Wash Screen (Sn-PbW)	TrStnPrt	3-03-024-08	NF	44,426	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M06	Pebble Wash Screen (Sn-PbW)	Screen	3-05-020-02	NF	44,426	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M07	Pebble Wash Screen (Sn-PbW) to Pebble Conveyor No. 2	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M08	Pebble Conveyor No. 2 (CV-Pb2) to SAG Oversize Surge Bin (B-SAGOS)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.003	0	0.002	0	0.0002	0
M09	SAG Oversize Surge Bin (B-SAGOS) to Pebble Crusher Feeder (F-PbC)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.003	0	0.002	0	0.0002	0
M10	Pebble Crusher Feeder (F-PbC) to Pebble Crusher (PbC)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M11	Pebble Crusher (PbC)	CrushT	3-03-024-07	NF	42,508	tons	0.06	0.02	0.004	lb/ton	PCADC	100%	1.28	0	0.43	0	0.08	0
M12	Pebble Crusher (PbC) to Pebble Conveyor No. 3 (CV-Pb3)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.003	0	0.002	0	0.0002	0
Copper Concentrate Dewatering and Stacking																		
CCD01	Copper Concentrate Filters (Ft-CC1/CC4) to Copper Concentrate Conveyor (CV-CC)	TrCuCncPrt	3-03-024-08	NF	3,312	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
CCD02	Copper Concentrate Conveyor (CV-CC) to Copper Concentrate Loadout Stockpile	TrCuCncPrt	3-03-024-08	F	3,312	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.00007	0	0.00003	0	0.000005	0
CCD03	Wind Erosion of Copper Concentrate Loadout Stockpile	WindCvd	3-03-888-01	F	1.17	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
CCD04	Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loaders	TrCuCncPrt	3-03-024-08	F	3,312	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.00007	0	0.00003	0	0.000005	0
Molybdenum Dewatering and Packaging																		
MD01	Molybdenum Concentrate Filter (Ft-MC) to Molybdenum Concentrate Dryer (D-MC)	TrMlyCncPrt	3-03-024-08	NF	45.6	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD02	Molybdenum Concentrate Dryer	MolyDry	3-03-024-11	NF	45.6	tons	19.70	12.00	5.91	lb/ton	MS/EP	100%	0.45	0	0.27	0	0.13	0
MD03	Molybdenum Concentrate Dryer (D-MC) to Molybdenum Concentrate Bin (B-MC)	DTrMlyCncPrt	3-03-024-08	NF	45.6	tons	0.00004	0.00002	0.000003	lb/ton	MDC	100%	0.000001	0	0.0000005	0	0.00000007	0
MD04	Molybdenum Concentrate Bin (B-MC) to Molybdenum Concentrate Hopper (H-MC)	DTrMlyCnc	3-03-024-08	NF	45.6	tons	0.0003	0.0002	0.00002	lb/ton	None	0%	0.000008	0.000008	0.000004	0.000004	0.0000005	0.0000005

Table H.24 Maximum Daily Particulate Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 5	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 5		PM_{10} Emissions (tpd) - Year 5		$PM_{2.5}$ Emissions (tpd) - Year 5	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
MD05	Molybdenum Concentrate Hopper (H-MC) to Molybdenum Concentrate Conveyor (CV-MC)	DTrMlyCncPrt	3-03-024-08	NF	45.6	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD06	Molybdenum Concentrate Conveyor (CV-MC) to Molybdenum Packaging and Weigh System (MPS)	DTrMlyCnc	3-03-024-08	NF	45.6	tons	0.0003	0.0002	0.00002	lb/ton	MDC	100%	0.000008	0	0.000004	0	0.0000005	0
Tailings Dewatering and Placement																		
TDS01	Tailings Filters (Ft-T1/T14) to Tailings Belt Feeders (F-T1/T14)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS02	Tailings Belt Feeders (F-T1/T14) to Fixed Tailings Conveyor No. 1 (CV-F1)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS03	Fixed Tailings Conveyor No. 1 (CV-F1) to Fixed Tailings Conveyor No. 2 (CV-F2)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS04	Fixed Tailings Conveyor No. 2 (CV-F2) to Fixed Tailings Conveyor No. 3 (CV-F3)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.003	0.003	0.001	0.001	0.0002	0.0002
TDS05	Fixed Tailings Conveyor No. 3 (CV-F3) to Relocatable Conveyor (CV-R1)	FiltTailPrt	3-03-024-08	F	257,328	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.003	0.003	0.001	0.001	0.0002	0.0002
TDS06	Relocatable Conveyor (CV-R1) to Shiftable Conveyor (CV-S1)	FiltTailPrt	3-03-024-08	F	257,328	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.003	0.003	0.001	0.001	0.0002	0.0002
TDS07	Shiftable Conveyor (CV-S1) to Belt Wagon Conveyor (CV-BW1)	FiltTail	3-03-024-08	F	257,328	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	0.02	0.02	0.01	0.01	0.002	0.002
TDS08	Belt Wagon Conveyor (CV-BW1) to Spreader Crawler Mounted Conveyor (CV-SP1)	FiltTail	3-03-024-08	F	257,328	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	0.02	0.02	0.01	0.01	0.002	0.002
TDS09	Spreader Crawler Mounted Conveyor (CV-SP1) to Tailings Storage	FiltTail	3-03-024-08	F	257,328	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	0.02	0.02	0.01	0.01	0.002	0.002
TDS10	Wind Erosion of Tailings Storage	TailStrg	3-03-888-01	F	1,500	acres	0.02	0.01	0.002	ton/acre-yr	None	0%	0.08	0.08	0.04	0.04	0.006	0.006
Fuel Burning Equipment																		
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	24	hours	3.30	2.30	1.54	lb/1000 gal	None	0%	0.002	0.002	0.001	0.001	0.0008	0.0008
					6.0	MMBtu/hr												
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.005	0.005	0.005	0.005	0.005	0.005
					1,000	kW												
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.005	0.005	0.005	0.005	0.005	0.005
					1,000	kW												
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.004	0.004	0.004	0.004	0.004	0.004
					750	kW												
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.004	0.004	0.004	0.004	0.004	0.004
					750	kW												
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	24	hours	0.40	0.40	0.40	g/kW-hr	None	0%	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
					50	kW												
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.002	0.002	0.002	0.002	0.002	0.002
					400	hp												
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.002	0.002	0.002	0.002	0.002	0.002
					400	hp												

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Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 5	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 5		PM_{10} Emissions (tpd) - Year 5		$PM_{2.5}$ Emissions (tpd) - Year 5	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Miscellaneous Sources																		
MS01	Transfer of Lime to the Lime Storage Bin (B-L)	LimeLd	3-05-016-26	NF	186.41	tons	0.61	0.29	0.04	lb/ton	BPLSV [a]	90%	0.006	0.006	0.003	0.003	0.0004	0.0004
MS02	Lime Storage Bin (B-L) to Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2)	ReagTr	3-03-024-04	NF	186.41	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS03	Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2) to Lime Slakers 1 and 2 (T-LS1/2)	ReagTr	3-03-024-04	NF	186.41	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS04	Lime Slaking in Lime Slakers 1 and 2 (T-LS1/2)	LimeSlk	3-05-016-09	NF	186.41	tons	8.00	8.00	8.00	lb/ton	LSS	99%	0.75	0.007	0.75	0.007	0.75	0.007
MS05	Transfer of Sodium Metasilicate to the Sodium Metasilicate Storage Bin (B-SM)	ReagTr	3-03-024-04	NF	9.86	tons	0.008	0.004	0.0006	lb/ton	SMSV [a]	90%	0.000004	0.000004	0.000002	0.000002	0.0000003	0.0000003
MS06	Transfer of Flocculant from Supersacks to Flocculant Storage Bins (B-F1/F2)	ReagTr	3-03-024-04	NF	3.62	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.00001	0.00001	0.000007	0.000007	0.000001	0.000001
MS07	Transfer of Guar from Bags to Guar Feeder (F-Gu)	ReagTr	3-03-024-04	NF	0.49	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.000002	0.000002	0.000001	0.000001	0.0000001	0.0000001
MS08	Transfer of Granular Cobalt Sulfate from Bags to Cobalt Sulfate Feeder (F-CoS)	ReagTr	3-03-024-04	NF	0.02	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.00000008	0.00000008	0.00000004	0.00000004	0.000000006	0.000000006
Particulate Matter Pollution Control Equipment with Emission Limits																		
PCL01	Crushing Area Dust Collector (PC-CADC)	CADC	none	NF	24	hours	1.42	0.64	0.12	lb/hr	--	--	--	0.02	--	0.008	--	0.001
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	SARTDC	none	NF	24	hours	3.11	1.47	0.22	lb/hr	--	--	--	0.04	--	0.02	--	0.003
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	SFCDC	none	NF	24	hours	0.76	0.36	0.05	lb/hr	--	--	--	0.01	--	0.004	--	0.001
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	PCADC	none	NF	24	hours	0.96	0.32	0.06	lb/hr	--	--	--	0.01	--	0.004	--	0.0007
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	CCDC	none	NF	24	hours	3.76	1.78	0.27	lb/hr	--	--	--	0.05	--	0.02	--	0.003
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	CCDC	none	NF	24	hours	3.76	1.78	0.27	lb/hr	--	--	--	0.05	--	0.02	--	0.003
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	MS/EP	none	NF	24	hours	0.015	0.014	0.013	lb/hr	--	--	--	0.0002	--	0.0002	--	0.0002
PCL08	Molybdenum Dust Collector (PC-MDC)	MDC	none	NF	24	hours	0.112	0.053	0.008	lb/hr	--	--	--	0.001	--	0.0006	--	0.0001
PCL09	Laboratory Dust Collector 1 (PC-L1)	LDC	none	NF	11,937,850	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.007	--	0.004	--	0.002
PCL10	Laboratory Dust Collector 2 (PC-L2)	LDC	none	NF	11,937,850	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.007	--	0.004	--	0.002
PCL11	Laboratory Dust Collector 3 (PC-L3)	LDC	none	NF	11,937,850	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.007	--	0.004	--	0.002
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	SFDC	none	NF	24	hours	0.97	0.46	0.07	lb/hr	--	--	--	0.01	--	0.006	--	0.0008
Total Non-Fugitive Emissions (excluding tailpipe emissions):													**4.25**	**0.24**	**2.26**	**0.13**	**1.13**	**0.05**
Total Fugitive Emissions (excluding tailpipe emissions):													**109.88**	**12.37**	**28.40**	**3.32**	**2.88**	**0.37**
Total Emissions (excluding tailpipe emissions):													**114.13**	**12.61**	**30.66**	**3.45**	**4.01**	**0.42**
Tailpipe Emissions (see Tables H.29-H.31):													**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**

[a] The control efficiency for this emission unit is inherent to the process. Therefore, the control efficiency is applied to both uncontrolled and controlled emissions.

Table H.25 Maximum Hourly Particulate Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 5	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (lb/hr) - Year 5		PM_{10} Emissions (lb/hr) - Year 5		$PM_{2.5}$ Emissions (lb/hr) - Year 5	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Mining																		
MN01	Drilling	Drilling	3-05-020-10	F	80	holes	1.30	0.43	0.08	lb/hole	None	0%	104.00	104.00	34.67	34.67	6.42	6.42
MN02	Blasting	Blast	3-05-020-09	F	1.00	blasts	328.26	170.69	9.85	lb/blast	None	0%	328.26	328.26	170.69	170.69	9.85	9.85
MN03	Loading Concentrate Ore	Loading	3-03-024-08	F	3,750	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	2.63	2.63	1.24	1.24	0.19	0.19
MN04	Loading Leach Ore	Loading	3-03-024-08	F	250	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0.18	0.18	0.08	0.08	0.01	0.01
MN05	Loading Waste Rock	Loading	3-03-024-08	F	11,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	7.72	7.72	3.65	3.65	0.55	0.55
MN06a	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Inside the Pit)	HaulingHD	3-05-020-11	F	51	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	1,086.45	108.64	279.17	27.92	27.92	2.79
MN06b	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Outside the Pit)	HaulingHD	3-05-020-11	F	30	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	628.33	62.83	161.45	16.15	16.15	1.61
MN07a	Hauling Leach Ore to Leach Pad (Inside the Pit)	HaulingHD	3-05-020-11	F	2	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	32.11	3.21	8.25	0.83	0.83	0.08
MN07b	Hauling Leach Ore to Leach Pad (Outside the Pit)	HaulingHD	3-05-020-11	F	2	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	52.99	5.30	13.61	1.36	1.36	0.14
MN08a	Hauling Waste Rock to Waste Rock Storage Area (Inside the Pit)	HaulingHD	3-05-020-11	F	108	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	2,287.85	228.78	587.87	58.79	58.79	5.88
MN08b	Hauling Waste Rock to Waste Rock Storage Area (Outside the Pit)	HaulingHD	3-05-020-11	F	191	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	4,051.63	405.16	1,041.08	104.11	104.11	10.41
MN09	Unloading Concentrate Ore to Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	3,750	tons	0.001	0.0006	0.00009	lb/ton	None	0%	4.46	4.46	2.11	2.11	0.32	0.32
MN10	Unloading Leach Ore to Leach Pad	TrStnUnp	3-03-024-08	F	250	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0.30	0.30	0.14	0.14	0.02	0.02
MN11	Unloading Waste Rock to Waste Rock Storage Area	TrStnUnp	3-03-024-08	F	11,000	tons	0.001	0.0006	0.00009	lb/ton	None	0%	13.07	13.07	6.18	6.18	0.94	0.94
MN12	Bulldozer Use	Bldzrs	3-05-020-99	F	6	hrs	2.82	0.43	0.30	lb/hr	None	0%	17.78	17.78	2.68	2.68	1.87	1.87
MN13a	Water Truck Use (Inside the Pit)	WtrTrksHD	3-05-020-99	F	8	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTI	90%	139.90	13.99	35.95	3.59	3.59	0.36
MN13b	Water Truck Use (Outside the Pit)	WtrTrksHD	3-05-020-99	F	11	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTO	90%	194.38	19.44	49.95	4.99	4.99	0.50
MN14	Grader Use	GradersY5	3-05-020-99	F	10	VMT	1.99	0.70	0.06	lb/VMT	None	0%	19.79	19.79	6.93	6.93	0.61	0.61
MN15a	Support Vehicle Use on Unpaved Roads (Inside the Pit)	SupVehUY5H	3-03-999-99	F	31	VMT	8.89	2.29	0.23	lb/VMT	HaulRdUI	90%	279.67	27.97	71.86	7.19	7.19	0.72
MN15b	Support Vehicle Use on Unpaved Roads (Outside the Pit)	SupVehUY5H	3-03-999-99	F	31	VMT	8.89	2.29	0.23	lb/VMT	HaulRdUO	90%	279.67	27.97	71.86	7.19	7.19	0.72
M16a	Support Vehicle Use on the Paved Entrance Road (within the process area boundary)	SupVehPEY5H	3-03-999-99	F	25	VMT	0.05	0.01	0.003	lb/VMT	None	0%	1.35	1.35	0.27	0.27	0.07	0.07
M16b	Support Vehicle Use on the Paved Entrance Road (outside of the process area boundary)	SupVehPEY5H	3-03-999-99	F	110	VMT	0.05	0.01	0.003	lb/VMT	None	0%	5.87	5.87	1.17	1.17	0.29	0.29
M16c	Support Vehicle Use on Paved Industrial Roads	SupVehPIY5H	3-03-999-99	F	39	VMT	1.23	0.25	0.06	lb/VMT	None	0%	47.33	47.33	9.47	9.47	2.32	2.32
Primary Crushing, Conveying, Coarse Ore Storage, and Reclaim Conveying																		
PC01	Wind Erosion of the Run of Mine Stockpile	WindROM	3-03-888-01	F	26	acres	0.21	0.11	0.02	ton/acre-yr	None	0%	1.24	1.24	0.62	0.62	0.09	0.09
PC02	Unloading to Primary Crusher Dump Hopper (H-CDp) from Haul Trucks or Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	6,950	tons	0.001	0.0006	0.00009	lb/ton	WSpry	82.5%	8.26	1.45	3.91	0.68	0.59	0.10
PC03	Primary Crusher (PCr)	CrushP	3-03-024-05	NF	6,950	tons	0.02	0.009	0.002	lb/ton	CADC	100%	139.00	0	62.55	0	11.58	0
PC04	Primary Crusher (PCr) to Crusher Discharge Hopper (H-CDs)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
PC05	Crusher Discharge Hopper (H-CDs) to Crusher Discharge Feeder (F-CD)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	1.08	0	0.51	0	0.08	0
PC06	Crusher Discharge Feeder (F-CD) to Stockpile Feed Conveyor No. 1 (CV-SF1)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	1.08	0	0.51	0	0.08	0

Table H.25 Maximum Hourly Particulate Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 5	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (lb/hr) - Year 5		PM_{10} Emissions (lb/hr) - Year 5		$PM_{2.5}$ Emissions (lb/hr) - Year 5	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
PC07	Stockpile Feed Conveyor No. 1 (CV-SF1) to Stockpile Feed Conveyor No. 2 (CV-SF2)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SFCDC	100%	1.08	0	0.51	0	0.08	0
PC08	Stockpile Feed Conveyor No. 2 (CV-SF2) to Covered Coarse Ore Stockpile	TrStnPrt	3-03-024-08	F	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	1.08	0	0.51	0	0.08	0
PC09	Wind Erosion of the Coarse Ore Stockpile	WindCvd	3-03-888-01	F	5	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
PC10	Coarse Ore Stockpile to Reclaim Feeders (F-R1/R4)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	UndrGrd [a]	100%	0	0	0	0	0	0
PC11	Reclaim Feeders (F-R1/R4) to Reclaim Conveyor (CV-R)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	1.08	0	0.51	0	0.08	0
PC12	Reclaim Conveyor (CV-R) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	1.08	0	0.51	0	0.08	0
PC13	Pebble Conveyor No. 3 (CV-Pb3) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.28	0	0.13	0	0.02	0
PC14	SAG Mill Feed Conveyor (CV-SMF) to SAG Mill (M-SAG)	TrStnPrt	3-03-024-08	NF	8,721	tons	0.0002	0.00007	0.00001	lb/ton	Water [a]	100%	0	0	0	0	0	0
Milling																		
M01	SAG Mill (M-SAG)	CrushS	3-03-024-06	NF	8,726	tons	0.05	0.02	0.004	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M02	SAG Mill (M-SAG) to Trommel Screen (Sn-T)	TrStnPrt	3-03-024-08	NF	8,726	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M03	Trommel Screen (Sn-T)	Screen	3-05-020-02	NF	8,726	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M04	Trommel Screen (Sn-T) to Pebble Conveyor No. 1 (CV-Pb1)	TrStnPrt	3-03-024-08	NF	1,851	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M05	Pebble Conveyor No. 1 (CV-Pb1) to Pebble Wash Screen (Sn-PbW)	TrStnPrt	3-03-024-08	NF	1,851	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M06	Pebble Wash Screen (Sn-PbW)	Screen	3-05-020-02	NF	1,851	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M07	Pebble Wash Screen (Sn-PbW) to Pebble Conveyor No. 2	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M08	Pebble Conveyor No. 2 (CV-Pb2) to SAG Oversize Surge Bin (B-SAGOS)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.28	0	0.13	0	0.02	0
M09	SAG Oversize Surge Bin (B-SAGOS) to Pebble Crusher Feeder (F-PbC)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.28	0	0.13	0	0.02	0
M10	Pebble Crusher Feeder (F-PbC) to Pebble Crusher (PbC)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M11	Pebble Crusher (PbC)	CrushT	3-03-024-07	NF	1,771	tons	0.06	0.02	0.00	lb/ton	PCADC	100%	106.27	0	35.42	0	6.56	0
M12	Pebble Crusher (PbC) to Pebble Conveyor No. 3 (CV-Pb3)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.28	0	0.13	0	0.02	0
Copper Concentrate Dewatering and Stacking																		
CCD01	Copper Concentrate Filters (Ft-CC1/CC4) to Copper Concentrate Conveyor (CV-CC)	TrCuCncPrt	3-03-024-08	NF	138	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
CCD02	Copper Concentrate Conveyor (CV-CC) to Copper Concentrate Loadout Stockpile	TrCuCncPrt	3-03-024-08	F	138	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.006	0	0.003	0	0.0004	0
CCD03	Wind Erosion of Copper Concentrate Loadout Stockpile	WindCvd	3-03-888-01	F	1.17	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
CCD04	Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loaders	TrCuCncPrt	3-03-024-08	F	138	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.006	0	0.003	0	0.0004	0
Molybdenum Dewatering and Packaging																		
MD01	Molybdenum Concentrate Filter (Ft-MC) to Molybdenum Concentrate Dryer (D-MC)	TrMlyCncPrt	3-03-024-08	NF	1.9	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD02	Molybdenum Concentrate Dryer	MolyDry	3-03-024-11	NF	1.9	tons	19.70	12.00	5.91	lb/ton	MS/EP	100%	37.43	0	22.80	0	11.23	0
MD03	Molybdenum Concentrate Dryer (D-MC) to Molybdenum Concentrate Bin (B-MC)	DTrMlyCncPrt	3-03-024-08	NF	1.9	tons	0.00004	0.00002	0.000003	lb/ton	MDC	100%	0.00008	0	0.00004	0	0.000006	0
MD04	Molybdenum Concentrate Bin (B-MC) to Molybdenum Concentrate Hopper (H-MC)	DTrMlyCnc	3-03-024-08	NF	1.9	tons	0.0003	0.0002	0.00002	lb/ton	None	0%	0.0006	0.0006	0.0003	0.0003	0.00004	0.00004

Table H.25 Maximum Hourly Particulate Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 5	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (lb/hr) - Year 5		PM_{10} Emissions (lb/hr) - Year 5		$PM_{2.5}$ Emissions (lb/hr) - Year 5	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
MD05	Molybdenum Concentrate Hopper (H-MC) to Molybdenum Concentrate Conveyor (CV-MC)	DTrMlyCncPrt	3-03-024-08	NF	1.9	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD06	Molybdenum Concentrate Conveyor (CV-MC) to Molybdenum Packaging and Weigh System (MPS)	DTrMlyCnc	3-03-024-08	NF	1.9	tons	0.0003	0.0002	0.00002	lb/ton	MDC	100%	0.0006	0	0.0003	0	0.00004	0
Tailings Dewatering and Placement																		
TDS01	Tailings Filters (Ft-T1/T14) to Tailings Belt Feeders (F-T1/T14)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS02	Tailings Belt Feeders (F-T1/T14) to Fixed Tailings Conveyor No. 1 (CV-F1)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS03	Fixed Tailings Conveyor No. 1 (CV-F1) to Fixed Tailings Conveyor No. 2 (CV-F2)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS04	Fixed Tailings Conveyor No. 2 (CV-F2) to Fixed Tailings Conveyor No. 3 (CV-F3)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.26	0.26	0.12	0.12	0.02	0.02
TDS05	Fixed Tailings Conveyor No. 3 (CV-F3) to Relocatable Conveyor (CV-R1)	FiltTailPrt	3-03-024-08	F	10,722	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.26	0.26	0.12	0.12	0.02	0.02
TDS06	Relocatable Conveyor (CV-R1) to Shiftable Conveyor (CV-S1)	FiltTailPrt	3-03-024-08	F	10,722	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.26	0.26	0.12	0.12	0.02	0.02
TDS07	Shiftable Conveyor (CV-S1) to Belt Wagon Conveyor (CV-BW1)	FiltTail	3-03-024-08	F	10,722	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	2.00	2.00	0.95	0.95	0.14	0.14
TDS08	Belt Wagon Conveyor (CV-BW1) to Spreader Crawler Mounted Conveyor (CV-SP1)	FiltTail	3-03-024-08	F	10,722	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	2.00	2.00	0.95	0.95	0.14	0.14
TDS09	Spreader Crawler Mounted Conveyor (CV-SP1) to Tailings Storage	FiltTail	3-03-024-08	F	10,722	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	2.00	2.00	0.95	0.95	0.14	0.14
TDS10	Wind Erosion of Tailings Storage	TailStrg	3-03-888-01	F	1,500	acres	0.02	0.01	0.002	ton/acre-yr	None	0%	6.90	6.90	3.45	3.45	0.52	0.52
Fuel Burning Equipment																		
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	1	hours	3.30	2.30	1.54	lb/1000 gal	None	0%	0.14	0.14	0.10	0.10	0.07	0.07
					6.0	MMBtu/hr												
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.44	0.44	0.44	0.44	0.44	0.44
					1,000	kW												
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.44	0.44	0.44	0.44	0.44	0.44
					1,000	kW												
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.33	0.33	0.33	0.33	0.33	0.33
					750	kW												
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.33	0.33	0.33	0.33	0.33	0.33
					750	kW												
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	1	hours	0.40	0.40	0.40	g/kW-hr	None	0%	0.04	0.04	0.04	0.04	0.04	0.04
					50	kW												
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.13	0.13	0.13	0.13	0.13	0.13
					400	hp												
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.13	0.13	0.13	0.13	0.13	0.13
					400	hp												

Table H.25 Maximum Hourly Particulate Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 5	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (lb/hr) - Year 5		PM_{10} Emissions (lb/hr) - Year 5		$PM_{2.5}$ Emissions (lb/hr) - Year 5	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Miscellaneous Sources																		
MS01	Transfer of Lime to the Lime Storage Bin (B-L)	LimeLd	3-05-016-26	NF	7.77	tons	0.61	0.29	0.04	lb/ton	BPLSV [a]	90%	0.47	0.47	0.22	0.22	0.03	0.03
MS02	Lime Storage Bin (B-L) to Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2)	ReagTr	3-03-024-04	NF	7.77	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS03	Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2) to Lime Slakers 1 and 2 (T-LS1/2)	ReagTr	3-03-024-04	NF	7.77	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS04	Lime Slaking in Lime Slakers 1 and 2 (T-LS1/2)	LimeSlk	3-05-016-09	NF	7.77	tons	8.00	8.00	8.00	lb/ton	LSS	99%	62.14	0.62	62.14	0.62	62.14	0.62
MS05	Transfer of Sodium Metasilicate to the Sodium Metasilicate Storage Bin (B-SM)	ReagTr	3-03-024-04	NF	0.41	tons	0.008	0.004	0.0006	lb/ton	SMSV [a]	90%	0.0003	0.0003	0.0002	0.0002	0.00002	0.00002
MS06	Transfer of Flocculant from Supersacks to Flocculant Storage Bins (B-F1/F2)	ReagTr	3-03-024-04	NF	0.15	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.001	0.001	0.0006	0.0006	0.00009	0.00009
MS07	Transfer of Guar from Bags to Guar Feeder (F-Gu)	ReagTr	3-03-024-04	NF	0.02	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.0002	0.0002	0.00008	0.00008	0.00001	0.00001
MS08	Transfer of Granular Cobalt Sulfate from Bags to Cobalt Sulfate Feeder (F-CoS)	ReagTr	3-03-024-04	NF	0.0008	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.000007	0.000007	0.000003	0.000003	0.0000005	0.0000005
Particulate Matter Pollution Control Equipment with Emission Limits																		
PCL01	Crushing Area Dust Collector (PC-CADC)	CADC	none	NF	1	hours	1.42	0.64	0.12	lb/hr	--	--	--	1.42	--	0.64	--	0.12
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	SARTDC	none	NF	1	hours	3.11	1.47	0.22	lb/hr	--	--	--	3.11	--	1.47	--	0.22
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	SFCDC	none	NF	1	hours	0.76	0.36	0.05	lb/hr	--	--	--	0.76	--	0.36	--	0.05
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	PCADC	none	NF	1	hours	0.96	0.32	0.06	lb/hr	--	--	--	0.96	--	0.32	--	0.06
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	CCDC	none	NF	1	hours	3.76	1.78	0.27	lb/hr	--	--	--	3.76	--	1.78	--	0.27
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	CCDC	none	NF	1	hours	3.76	1.78	0.27	lb/hr	--	--	--	3.76	--	1.78	--	0.27
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	MS/EP	none	NF	1	hours	0.015	0.014	0.013	lb/hr	--	--	--	0.02	--	0.01	--	0.01
PCL08	Molybdenum Dust Collector (PC-MDC)	MDC	none	NF	1	hours	0.112	0.053	0.008	lb/hr	--	--	--	0.11	--	0.05	--	0.008
PCL09	Laboratory Dust Collector 1 (PC-L1)	LDC	none	NF	497,410	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.58	--	0.36	--	0.17
PCL10	Laboratory Dust Collector 2 (PC-L2)	LDC	none	NF	497,410	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.58	--	0.36	--	0.17
PCL11	Laboratory Dust Collector 3 (PC-L3)	LDC	none	NF	497,410	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.58	--	0.36	--	0.17
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	SFDC	none	NF	1	hours	0.97	0.46	0.07	lb/hr	--	--	--	0.97	--	0.46	--	0.07
Total Non-Fugitive Emissions (excluding tailpipe emissions):													**354.09**	**19.98**	**188.29**	**10.86**	**93.95**	**4.20**
Total Fugitive Emissions (excluding tailpipe emissions):													**9,609.72**	**1,472.15**	**2,571.92**	**479.24**	**257.31**	**47.85**
Total Emissions (excluding tailpipe emissions):													**9,963.81**	**1,492.13**	**2,760.21**	**490.10**	**351.26**	**52.05**
Tailpipe Emissions (see Tables H.29-H.31):													**8.59**	**8.59**	**8.59**	**8.59**	**8.59**	**8.59**

[a] The control efficiency for this emission unit is inherent to the process. Therefore, the control efficiency is applied to both uncontrolled and controlled emissions.

Table H.26 Annual Gaseous Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 5	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 5								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
Mining																										
MN02	Blasting	Blast	3-05-020-09	F	18,096	tons ANFO	67.00	17.00	2.00	0	0	566	0.02	0.005	--	--	lb/tons ANFO	606.22	153.82	18.10	0	0	5,125.23	0.21	0.04	--
Solvent Extraction and Electrowinning																										
SXE01	Solvent Extraction	SX	4-90-001-99	F	8,760	hours	0	0	0	9.43E-05	0	0	0	0	Benzene	3.37E-07	lb/hr-ft^2	0	0	0	3.77	0	0	0	0	1.35E-02
	4 Primary Mix Tanks (7.75' D x 9.75' H each)	4 @ 47.2 = 188.7	ft^2		9,132.9	ft^2	Total Surface Area of Solvent Extraction								Toluene	4.82E-06	lb/hr-ft^2									1.93E-01
	4 Secondary Mix Tanks (9.5' D x 9.75' H each)	4 @ 70.9 = 283.5	ft^2												Ethylbenzene	2.05E-05	lb/hr-ft^2									8.21E-01
	3 Tertiary Mix Tanks (9.5' D x 9.75' H each)	3 @ 70.9 = 212.6	ft^2												Xylenes	2.80E-05	lb/hr-ft^2									1.12E+00
	4 Extraction Settlers (64' L x 33' W x 3.33' H each)	4 @ 2,112 = 8,448	ft^2												Others (including Hexane)	2.94E-05	lb/hr-ft^2									1.18E+00
SXE02	Electrowinning Commercial Cells (EWCC)	EW	none	NF	8,760	hours	0	0	0	0	1.57E-04	0	0	0	Cobalt Compounds	2.36E-08	lb/hr-ft^2	0	0	0	0	0.02	0	0	0	2.72E-06
	Controlled by Cell Ventilation Scrubbers (PC-EWCVS1/EWCVS3)				2,640	ft^2																				
					99	Control Efficiency (%)																				
Fuel Burning Equipment																										
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	8,760	hours	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	POM	3.30E-03	lb/1000 gal	0.96	3.84	0.04	0.04	0	4,453.51	0.18	0.04	6.33E-04
					6.0	MMBtu/hr									Formaldehyde	6.10E-02	lb/1000 gal									1.17E-02
															Arsenic	4.00	lb/10^{12} Btu									1.05E-04
															Beryllium	3.00	lb/10^{12} Btu									7.88E-05
															Cadmium	3.00	lb/10^{12} Btu									7.88E-05
															Chromium	3.00	lb/10^{12} Btu									7.88E-05
															Lead	9.00	lb/10^{12} Btu									2.37E-04
															Mercury	3.00	lb/10^{12} Btu									7.88E-05
															Manganese	6.00	lb/10^{12} Btu									1.58E-04
															Nickel	3.00	lb/10^{12} Btu									7.88E-05
															Selenium	15.00	lb/10^{12} Btu									3.94E-04
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.93	3.31	0.004	0.22	0	382.65	0.02	0.003	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									1.82E-03
															Toluene	2.81E-04	lb/MMBtu									6.59E-04
															Xylenes	1.93E-04	lb/MMBtu									4.53E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.85E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									5.91E-05
															Acrolein	7.88E-06	lb/MMBtu									1.85E-05
															Naphthalene	1.30E-04	lb/MMBtu									3.05E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									2.17E-05
															Acenaphthene	4.68E-06	lb/MMBtu									1.10E-05
															Fluorene	1.28E-05	lb/MMBtu									3.00E-05
															Phenanthrene	4.08E-05	lb/MMBtu									9.57E-05
															Anthracene	1.23E-06	lb/MMBtu									2.89E-06
															Fluoranthene	4.03E-06	lb/MMBtu									9.46E-06
															Pyrene	3.71E-06	lb/MMBtu									8.71E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.46E-06
															Chrysene	1.53E-06	lb/MMBtu									3.59E-06

Table H.26 Annual Gaseous Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 5	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 5								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									2.60E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									5.12E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									6.03E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									9.72E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									8.12E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									1.30E-06
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.93	3.31	0.004	0.22	0	382.65	0.02	0.003	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									1.82E-03
															Toluene	2.81E-04	lb/MMBtu									6.59E-04
															Xylenes	1.93E-04	lb/MMBtu									4.53E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.85E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									5.91E-05
															Acrolein	7.88E-06	lb/MMBtu									1.85E-05
															Naphthalene	1.30E-04	lb/MMBtu									3.05E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									2.17E-05
															Acenaphthene	4.68E-06	lb/MMBtu									1.10E-05
															Fluorene	1.28E-05	lb/MMBtu									3.00E-05
															Phenanthrene	4.08E-05	lb/MMBtu									9.57E-05
															Anthracene	1.23E-06	lb/MMBtu									2.89E-06
															Fluoranthene	4.03E-06	lb/MMBtu									9.46E-06
															Pyrene	3.71E-06	lb/MMBtu									8.71E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.46E-06
															Chrysene	1.53E-06	lb/MMBtu									3.59E-06
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									2.60E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									5.12E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									6.03E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									9.72E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									8.12E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									1.30E-06
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.45	2.48	0.003	0.17	0	286.99	0.01	0.002	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									1.37E-03
															Toluene	2.81E-04	lb/MMBtu									4.95E-04
															Xylenes	1.93E-04	lb/MMBtu									3.40E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.39E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									4.44E-05
															Acrolein	7.88E-06	lb/MMBtu									1.39E-05
															Naphthalene	1.30E-04	lb/MMBtu									2.29E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									1.62E-05
															Acenaphthene	4.68E-06	lb/MMBtu									8.24E-06
															Fluorene	1.28E-05	lb/MMBtu									2.25E-05

Table H.26 Annual Gaseous Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 5	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 5								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Phenanthrene	4.08E-05	lb/MMBtu									7.18E-05
															Anthracene	1.23E-06	lb/MMBtu									2.16E-06
															Fluoranthene	4.03E-06	lb/MMBtu									7.09E-06
															Pyrene	3.71E-06	lb/MMBtu									6.53E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.09E-06
															Chrysene	1.53E-06	lb/MMBtu									2.69E-06
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.95E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									3.84E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									4.52E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									7.29E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									6.09E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									9.79E-07
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.45	2.48	0.003	0.17	0	286.99	0.01	0.002	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									1.37E-03
															Toluene	2.81E-04	lb/MMBtu									4.95E-04
															Xylenes	1.93E-04	lb/MMBtu									3.40E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.39E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									4.44E-05
															Acrolein	7.88E-06	lb/MMBtu									1.39E-05
															Naphthalene	1.30E-04	lb/MMBtu									2.29E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									1.62E-05
															Acenaphthene	4.68E-06	lb/MMBtu									8.24E-06
															Fluorene	1.28E-05	lb/MMBtu									2.25E-05
															Phenanthrene	4.08E-05	lb/MMBtu									7.18E-05
															Anthracene	1.23E-06	lb/MMBtu									2.16E-06
															Fluoranthene	4.03E-06	lb/MMBtu									7.09E-06
															Pyrene	3.71E-06	lb/MMBtu									6.53E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.09E-06
															Chrysene	1.53E-06	lb/MMBtu									2.69E-06
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.95E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									3.84E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									4.52E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									7.29E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									6.09E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									9.79E-07
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	500	hours	5.00	4.43	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.14	0.12	0.0002	0.007	0	19.13	0.0008	0.0002	--
					50	kW									Benzene	9.33E-04	lb/MMBtu									1.09E-04
															Toluene	4.09E-04	lb/MMBtu									4.80E-05
															Xylenes	2.85E-04	lb/MMBtu									3.34E-05
															1,3-Butadiene	3.91E-05	lb/MMBtu									4.59E-06

Table H.26 Annual Gaseous Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 5	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 5								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Formaldehyde	1.18E-03	lb/MMBtu									1.38E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									9.00E-05
															Acrolein	9.25E-05	lb/MMBtu									1.09E-05
															Naphthalene	8.48E-05	lb/MMBtu									9.95E-06
															Acenaphthylene	5.06E-06	lb/MMBtu									5.94E-07
															Acenaphthene	1.42E-06	lb/MMBtu									1.67E-07
															Fluorene	2.92E-05	lb/MMBtu									3.43E-06
															Phenanthrene	2.94E-05	lb/MMBtu									3.45E-06
															Anthracene	1.87E-06	lb/MMBtu									2.19E-07
															Fluoranthene	7.61E-06	lb/MMBtu									8.93E-07
															Pyrene	4.78E-06	lb/MMBtu									5.61E-07
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									1.97E-07
															Chrysene	3.53E-07	lb/MMBtu									4.14E-08
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									1.16E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									1.82E-08
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									2.21E-08
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									4.40E-08
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									6.84E-08
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									5.74E-08
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	500	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.58	0.61	0.001	0.04	0	114.14	0.005	0.0009	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									6.53E-04
															Toluene	4.09E-04	lb/MMBtu									2.86E-04
															Xylenes	2.85E-04	lb/MMBtu									2.00E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									2.74E-05
															Formaldehyde	1.18E-03	lb/MMBtu									8.26E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									5.37E-04
															Acrolein	9.25E-05	lb/MMBtu									6.48E-05
															Naphthalene	8.48E-05	lb/MMBtu									5.94E-05
															Acenaphthylene	5.06E-06	lb/MMBtu									3.54E-06
															Acenaphthene	1.42E-06	lb/MMBtu									9.94E-07
															Fluorene	2.92E-05	lb/MMBtu									2.04E-05
															Phenanthrene	2.94E-05	lb/MMBtu									2.06E-05
															Anthracene	1.87E-06	lb/MMBtu									1.31E-06
															Fluoranthene	7.61E-06	lb/MMBtu									5.33E-06
															Pyrene	4.78E-06	lb/MMBtu									3.35E-06
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									1.18E-06
															Chrysene	3.53E-07	lb/MMBtu									2.47E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									6.94E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									1.09E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									1.32E-07

Table H.26 Annual Gaseous Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 5	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 5								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									2.63E-07
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									4.08E-07
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									3.42E-07
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	500	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.58	0.61	0.001	0.04	0	114.14	0.005	0.0009	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									6.53E-04
															Toluene	4.09E-04	lb/MMBtu									2.86E-04
															Xylenes	2.85E-04	lb/MMBtu									2.00E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									2.74E-05
															Formaldehyde	1.18E-03	lb/MMBtu									8.26E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									5.37E-04
															Acrolein	9.25E-05	lb/MMBtu									6.48E-05
															Naphthalene	8.48E-05	lb/MMBtu									5.94E-05
															Acenaphthylene	5.06E-06	lb/MMBtu									3.54E-06
															Acenaphthene	1.42E-06	lb/MMBtu									9.94E-07
															Fluorene	2.92E-05	lb/MMBtu									2.04E-05
															Phenanthrene	2.94E-05	lb/MMBtu									2.06E-05
															Anthracene	1.87E-06	lb/MMBtu									1.31E-06
															Fluoranthene	7.61E-06	lb/MMBtu									5.33E-06
															Pyrene	4.78E-06	lb/MMBtu									3.35E-06
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									1.18E-06
															Chrysene	3.53E-07	lb/MMBtu									2.47E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									6.94E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									1.09E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									1.32E-07
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									2.63E-07
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									4.08E-07
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									3.42E-07
Tanks																										
T01	C7 Distribution Tank (T-C7D)	C7DT	4-03-010-19	NF	8,760	hours	0	0	0	1.08E-01	0	0	0	0	--	--	lb/hr	0	0	0	0.47	0	0	0	0	--
T02	MIBC Storage Tank (T-MIBCS)	MST	4-90-999-98	NF	8,760	hours	0	0	0	3.53E-03	0	0	0	0	--	--	lb/hr	0	0	0	0.02	0	0	0	0	--
T03	Diesel Fuel Storage Tank - Heavy Vehicles 1 (T-DFS-HV1)	DFSTHV	4-03-010-19	NF	8,760	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.06	0	0	0	0	2.50E-05
															Benzene	2.74E-05	lb/hr									1.20E-04
															Toluene	3.18E-04	lb/hr									1.40E-03
															Ethylbenzene	4.45E-05	lb/hr									1.95E-04
															m-Xylene	8.23E-04	lb/hr									3.61E-03
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									2.96E-03
T04	Diesel Fuel Storage Tank - Heavy Vehicles 2 (T-DFS-HV2)	DFSTHV	4-03-010-19	NF	8,760	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.06	0	0	0	0	2.50E-05
															Benzene	2.74E-05	lb/hr									1.20E-04
															Toluene	3.18E-04	lb/hr									1.40E-03
															Ethylbenzene	4.45E-05	lb/hr									1.95E-04

Table H.26 Annual Gaseous Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 5	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 5								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															m-Xylene	8.23E-04	lb/hr									3.61E-03
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									2.96E-03
Total Non-Fugitive Emissions (excluding tailpipe emissions):																		**9.00**	**16.76**	**0.06**	**1.51**	**0.02**	**6,040.20**	**0.25**	**0.05**	**0.05**
Total Fugitive Emissions (excluding tailpipe emissions):																		**606.22**	**153.82**	**18.10**	**3.77**	**0**	**5,125.23**	**0.21**	**0.04**	**3.32**
Total Emissions (excluding tailpipe emissions):																		**615.22**	**170.58**	**18.15**	**5.28**	**0.02**	**11,165.44**	**0.45**	**0.09**	**3.37**
Tailpipe Emissions (see Tables H.32-H.36):																		**829.16**	**1,016.36**	**1.54**	**72.69**	**--**	**163,247.91**	**--**	**--**	**--**

[a] CO_2e emissions are calculcated by summing the individual greenhouse gas emissions multiplied by their global warming potential (GWP). GWP of CO_2 = 1, GWP of CH_4 = 21, GWP of N_2O = 310.

[b] All HAP emissions are included in the facility-wide potential to emit, regardless of if they are fugitive or non-fugitive emissions.

Table H.27 Maximum Daily Gaseous Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 5	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 5								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
Mining																										
MN02	Blasting	Blast	3-05-020-09	F	52	tons ANFO	67.00	17.00	2.00	0	0	566	0.02	0.005	--	--	lb/tons ANFO	1.74	0.44	0.05	0	0	14.73	0.0006	0.0001	--
Solvent Extraction and Electrowinning																										
SXE01	Solvent Extraction	SX	4-90-001-99	F	24	hours	0	0	0	9.43E-05	0	0	0	0	Benzene	3.37E-07	lb/hr-ft^2	0	0	0	0.01	0	0	0	0	3.69E-05
	4 Primary Mix Tanks (7.75' D x 9.75' H each)	4 @ 47.2 = 188.7	ft^2		9,132.9	ft^2	Total Surface Area of Solvent Extraction								Toluene	4.82E-06	lb/hr-ft^2									5.28E-04
	4 Secondary Mix Tanks (9.5' D x 9.75' H each)	4 @ 70.9 = 283.5	ft^2												Ethylbenzene	2.05E-05	lb/hr-ft^2									2.25E-03
	3 Tertiary Mix Tanks (9.5' D x 9.75' H each)	3 @ 70.9 = 212.6	ft^2												Xylenes	2.80E-05	lb/hr-ft^2									3.07E-03
	4 Extraction Settlers (64' L x 33' W x 3.33' H each)	4 @ 2,112 = 8,448	ft^2												Others (including Hexane)	2.94E-05	lb/hr-ft^2									3.22E-03
SXE02	Electrowinning Commercial Cells (EWCC)	EW	none	NF	24	hours	0	0	0	0	1.57E-04	0	0	0	Cobalt Compounds	2.36E-08	lb/hr-ft^2	0	0	0	0	0.00005	0	0	0	7.46E-09
	Controlled by Cell Ventilation Scrubbers (PC-EWCVS1/EWCVS3)				2,640	ft^2																				
					99	Control Efficiency (%)																				
Fuel Burning Equipment																										
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	24	hours	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	POM	3.30E-03	lb/1000 gal	0.003	0.01	0.0001	0.0001	0	12.20	0.0005	0.0001	1.73E-06
					6.0	MMBtu/hr									Formaldehyde	6.10E-02	lb/1000 gal									3.21E-05
															Arsenic	4.00	lb/10^{12} Btu									2.88E-07
															Beryllium	3.00	lb/10^{12} Btu									2.16E-07
															Cadmium	3.00	lb/10^{12} Btu									2.16E-07
															Chromium	3.00	lb/10^{12} Btu									2.16E-07
															Lead	9.00	lb/10^{12} Btu									6.48E-07
															Mercury	3.00	lb/10^{12} Btu									2.16E-07
															Manganese	6.00	lb/10^{12} Btu									4.32E-07
															Nickel	3.00	lb/10^{12} Btu									2.16E-07
															Selenium	15.00	lb/10^{12} Btu									1.08E-06
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.09	0.16	0.0002	0.01	0	18.37	0.0007	0.0001	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									8.74E-05
															Toluene	2.81E-04	lb/MMBtu									3.17E-05
															Xylenes	1.93E-04	lb/MMBtu									2.17E-05
															Formaldehyde	7.89E-05	lb/MMBtu									8.89E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.84E-06
															Acrolein	7.88E-06	lb/MMBtu									8.88E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.46E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									1.04E-06
															Acenaphthene	4.68E-06	lb/MMBtu									5.27E-07
															Fluorene	1.28E-05	lb/MMBtu									1.44E-06
															Phenanthrene	4.08E-05	lb/MMBtu									4.60E-06
															Anthracene	1.23E-06	lb/MMBtu									1.39E-07
															Fluoranthene	4.03E-06	lb/MMBtu									4.54E-07
															Pyrene	3.71E-06	lb/MMBtu									4.18E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									7.01E-08
															Chrysene	1.53E-06	lb/MMBtu									1.72E-07

Table H.27 Maximum Daily Gaseous Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 5	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 5								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.25E-07
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.46E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.89E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									4.66E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.90E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									6.26E-08
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.09	0.16	0.0002	0.01	0	18.37	0.0007	0.0001	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									8.74E-05
															Toluene	2.81E-04	lb/MMBtu									3.17E-05
															Xylenes	1.93E-04	lb/MMBtu									2.17E-05
															Formaldehyde	7.89E-05	lb/MMBtu									8.89E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.84E-06
															Acrolein	7.88E-06	lb/MMBtu									8.88E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.46E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									1.04E-06
															Acenaphthene	4.68E-06	lb/MMBtu									5.27E-07
															Fluorene	1.28E-05	lb/MMBtu									1.44E-06
															Phenanthrene	4.08E-05	lb/MMBtu									4.60E-06
															Anthracene	1.23E-06	lb/MMBtu									1.39E-07
															Fluoranthene	4.03E-06	lb/MMBtu									4.54E-07
															Pyrene	3.71E-06	lb/MMBtu									4.18E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									7.01E-08
															Chrysene	1.53E-06	lb/MMBtu									1.72E-07
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.25E-07
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.46E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.89E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									4.66E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.90E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									6.26E-08
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.07	0.12	0.0001	0.008	0	13.78	0.0006	0.0001	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									6.56E-05
															Toluene	2.81E-04	lb/MMBtu									2.37E-05
															Xylenes	1.93E-04	lb/MMBtu									1.63E-05
															Formaldehyde	7.89E-05	lb/MMBtu									6.67E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.13E-06
															Acrolein	7.88E-06	lb/MMBtu									6.66E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.10E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									7.80E-07
															Acenaphthene	4.68E-06	lb/MMBtu									3.95E-07
															Fluorene	1.28E-05	lb/MMBtu									1.08E-06

Table H.27 Maximum Daily Gaseous Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 5	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 5								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Phenanthrene	4.08E-05	lb/MMBtu									3.45E-06
															Anthracene	1.23E-06	lb/MMBtu									1.04E-07
															Fluoranthene	4.03E-06	lb/MMBtu									3.40E-07
															Pyrene	3.71E-06	lb/MMBtu									3.13E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.25E-08
															Chrysene	1.53E-06	lb/MMBtu									1.29E-07
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									9.38E-08
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.84E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.17E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.50E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.92E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									4.70E-08
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.07	0.12	0.0001	0.008	0	13.78	0.0006	0.0001	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									6.56E-05
															Toluene	2.81E-04	lb/MMBtu									2.37E-05
															Xylenes	1.93E-04	lb/MMBtu									1.63E-05
															Formaldehyde	7.89E-05	lb/MMBtu									6.67E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.13E-06
															Acrolein	7.88E-06	lb/MMBtu									6.66E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.10E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									7.80E-07
															Acenaphthene	4.68E-06	lb/MMBtu									3.95E-07
															Fluorene	1.28E-05	lb/MMBtu									1.08E-06
															Phenanthrene	4.08E-05	lb/MMBtu									3.45E-06
															Anthracene	1.23E-06	lb/MMBtu									1.04E-07
															Fluoranthene	4.03E-06	lb/MMBtu									3.40E-07
															Pyrene	3.71E-06	lb/MMBtu									3.13E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.25E-08
															Chrysene	1.53E-06	lb/MMBtu									1.29E-07
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									9.38E-08
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.84E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.17E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.50E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.92E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									4.70E-08
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	24	hours	5.00	4.43	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.007	0.006	0.000009	0.0004	0	0.92	0.00004	0.000007	--
					50	kW									Benzene	9.33E-04	lb/MMBtu									5.25E-06
															Toluene	4.09E-04	lb/MMBtu									2.30E-06
															Xylenes	2.85E-04	lb/MMBtu									1.61E-06
															1,3-Butadiene	3.91E-05	lb/MMBtu									2.20E-07

Table H.27 Maximum Daily Gaseous Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 5	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 5								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Formaldehyde	1.18E-03	lb/MMBtu									6.65E-06
															Acetaldehyde	7.67E-04	lb/MMBtu									4.32E-06
															Acrolein	9.25E-05	lb/MMBtu									5.21E-07
															Naphthalene	8.48E-05	lb/MMBtu									4.78E-07
															Acenaphthylene	5.06E-06	lb/MMBtu									2.85E-08
															Acenaphthene	1.42E-06	lb/MMBtu									8.00E-09
															Fluorene	2.92E-05	lb/MMBtu									1.64E-07
															Phenanthrene	2.94E-05	lb/MMBtu									1.66E-07
															Anthracene	1.87E-06	lb/MMBtu									1.05E-08
															Fluoranthene	7.61E-06	lb/MMBtu									4.29E-08
															Pyrene	4.78E-06	lb/MMBtu									2.69E-08
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									9.46E-09
															Chrysene	3.53E-07	lb/MMBtu									1.99E-09
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									5.58E-10
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									8.73E-10
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									1.06E-09
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									2.11E-09
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									3.28E-09
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									2.75E-09
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	24	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.03	0.03	0.00005	0.002	0	5.48	0.0002	0.00004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									3.13E-05
															Toluene	4.09E-04	lb/MMBtu									1.37E-05
															Xylenes	2.85E-04	lb/MMBtu									9.58E-06
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.31E-06
															Formaldehyde	1.18E-03	lb/MMBtu									3.96E-05
															Acetaldehyde	7.67E-04	lb/MMBtu									2.58E-05
															Acrolein	9.25E-05	lb/MMBtu									3.11E-06
															Naphthalene	8.48E-05	lb/MMBtu									2.85E-06
															Acenaphthylene	5.06E-06	lb/MMBtu									1.70E-07
															Acenaphthene	1.42E-06	lb/MMBtu									4.77E-08
															Fluorene	2.92E-05	lb/MMBtu									9.81E-07
															Phenanthrene	2.94E-05	lb/MMBtu									9.88E-07
															Anthracene	1.87E-06	lb/MMBtu									6.28E-08
															Fluoranthene	7.61E-06	lb/MMBtu									2.56E-07
															Pyrene	4.78E-06	lb/MMBtu									1.61E-07
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									5.64E-08
															Chrysene	3.53E-07	lb/MMBtu									1.19E-08
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									3.33E-09
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									5.21E-09
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									6.32E-09

Table H.27 Maximum Daily Gaseous Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 5	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 5								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.26E-08
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.96E-08
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.64E-08
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	24	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.03	0.03	0.00005	0.002	0	5.48	0.0002	0.00004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									3.13E-05
															Toluene	4.09E-04	lb/MMBtu									1.37E-05
															Xylenes	2.85E-04	lb/MMBtu									9.58E-06
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.31E-06
															Formaldehyde	1.18E-03	lb/MMBtu									3.96E-05
															Acetaldehyde	7.67E-04	lb/MMBtu									2.58E-05
															Acrolein	9.25E-05	lb/MMBtu									3.11E-06
															Naphthalene	8.48E-05	lb/MMBtu									2.85E-06
															Acenaphthylene	5.06E-06	lb/MMBtu									1.70E-07
															Acenaphthene	1.42E-06	lb/MMBtu									4.77E-08
															Fluorene	2.92E-05	lb/MMBtu									9.81E-07
															Phenanthrene	2.94E-05	lb/MMBtu									9.88E-07
															Anthracene	1.87E-06	lb/MMBtu									6.28E-08
															Fluoranthene	7.61E-06	lb/MMBtu									2.56E-07
															Pyrene	4.78E-06	lb/MMBtu									1.61E-07
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									5.64E-08
															Chrysene	3.53E-07	lb/MMBtu									1.19E-08
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									3.33E-09
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									5.21E-09
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									6.32E-09
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.26E-08
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.96E-08
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.64E-08
Tanks																										
T01	C7 Distribution Tank (T-C7D)	C7DT	4-03-010-19	NF	24	hours	0	0	0	1.08E-01	0	0	0	0	--	--	lb/hr	0	0	0	0.001	0	0	0	0	--
T02	MIBC Storage Tank (T-MIBCS)	MST	4-90-999-98	NF	24	hours	0	0	0	3.53E-03	0	0	0	0	--	--	lb/hr	0	0	0	0.00004	0	0	0	0	--
T03	Diesel Fuel Storage Tank - Heavy Vehicles 1 (T-DFS-HV1)	DFSTHV	4-03-010-19	NF	24	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.0002	0	0	0	0	6.85E-08
															Benzene	2.74E-05	lb/hr									3.29E-07
															Toluene	3.18E-04	lb/hr									3.82E-06
															Ethylbenzene	4.45E-05	lb/hr									5.34E-07
															m-Xylene	8.23E-04	lb/hr									9.88E-06
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									8.11E-06
T04	Diesel Fuel Storage Tank - Heavy Vehicles 2 (T-DFS-HV2)	DFSTHV	4-03-010-19	NF	24	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.0002	0	0	0	0	6.85E-08
															Benzene	2.74E-05	lb/hr									3.29E-07
															Toluene	3.18E-04	lb/hr									3.82E-06
															Ethylbenzene	4.45E-05	lb/hr									5.34E-07

Table H.27 Maximum Daily Gaseous Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 5	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 5								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															m-Xylene	8.23E-04	lb/hr									9.88E-06
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									8.11E-06
Total Non-Fugitive Emissions (excluding tailpipe emissions):																		**0.39**	**0.63**	**0.0008**	**0.04**	**0.00005**	**88.36**	**0.004**	**0.0007**	**0.001**
Total Fugitive Emissions (excluding tailpipe emissions):																		**1.74**	**0.44**	**0.05**	**0.01**	**0**	**14.73**	**0.0006**	**0.0001**	**0.009**
Total Emissions (excluding tailpipe emissions):																		**2.13**	**1.07**	**0.05**	**0.05**	**0.00005**	**103.09**	**0.004**	**0.0008**	**0.01**
Tailpipe Emissions (see Tables H.32-H.36):																		**2.78**	**3.51**	**0.006**	**0.25**	**--**	**542.11**	**--**	**--**	**--**

[a] CO_2e emissions are calculcated by summing the individual greenhouse gas emissions multiplied by their global warming potential (GWP). GWP of CO_2 = 1, GWP of CH_4 = 21, GWP of N_2O = 310.

[b] All HAP emissions are included in the facility-wide potential to emit, regardless of if they are fugitive or non-fugitive emissions.

Table H.28 Hourly Gaseous Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 5	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 5								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
Mining																										
MN02	Blasting	Blast	3-05-020-09	F	52	tons ANFO	67.00	17.00	2.00	0	0	566	0.02	0.005	--	--	lb/tons ANFO	3,484.00	884.00	104.00	0	0	29,455.36	1.19	0.24	--
Solvent Extraction and Electrowinning																										
SXE01	Solvent Extraction	SX	4-90-001-99	F	1	hours	0	0	0	9.43E-05	0	0	0	0	Benzene	3.37E-07	lb/hr-ft^2	0	0	0	0.86	0	0	0	0	3.08E-03
	4 Primary Mix Tanks (7.75' D x 9.75' H each)	4 @ 47.2 = 188.7	ft^2		9,132.9	ft^2	Total Surface Area of Solvent Extraction								Toluene	4.82E-06	lb/hr-ft^2									4.40E-02
	4 Secondary Mix Tanks (9.5' D x 9.75' H each)	4 @ 70.9 = 283.5	ft^2												Ethylbenzene	2.05E-05	lb/hr-ft^2									1.87E-01
	3 Tertiary Mix Tanks (9.5' D x 9.75' H each)	3 @ 70.9 = 212.6	ft^2												Xylenes	2.80E-05	lb/hr-ft^2									2.56E-01
	4 Extraction Settlers (64' L x 33' W x 3.33' H each)	4 @ 2,112 = 8,448	ft^2												Others (including Hexane)	2.94E-05	lb/hr-ft^2									2.69E-01
SXE02	Electrowinning Commercial Cells (EWCC)	EW	none	NF	1	hours	0	0	0	0	1.57E-04	0	0	0	Cobalt Compounds	2.36E-08	lb/hr-ft^2	0	0	0	0	0.004	0	0	0	6.22E-07
	Controlled by Cell Ventilation Scrubbers (PC-EWCVS1/EWCVS3)				2,640	ft^2																				
					99	Control Efficiency (%)																				
Fuel Burning Equipment																										
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	1	hours	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	POM	3.30E-03	lb/1000 gal	0.22	0.88	0.009	0.009	0	1,016.78	0.04	0.008	1.45E-04
					6.0	MMBtu/hr									Formaldehyde	6.10E-02	lb/1000 gal									2.67E-03
															Arsenic	4.00	lb/10^{12} Btu									2.40E-05
															Beryllium	3.00	lb/10^{12} Btu									1.80E-05
															Cadmium	3.00	lb/10^{12} Btu									1.80E-05
															Chromium	3.00	lb/10^{12} Btu									1.80E-05
															Lead	9.00	lb/10^{12} Btu									5.40E-05
															Mercury	3.00	lb/10^{12} Btu									1.80E-05
															Manganese	6.00	lb/10^{12} Btu									3.60E-05
															Nickel	3.00	lb/10^{12} Btu									1.80E-05
															Selenium	15.00	lb/10^{12} Btu									9.00E-05
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	7.72	13.23	0.01	0.88	0	1,530.61	0.06	0.01	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									7.28E-03
															Toluene	2.81E-04	lb/MMBtu									2.64E-03
															Xylenes	1.93E-04	lb/MMBtu									1.81E-03
															Formaldehyde	7.89E-05	lb/MMBtu									7.41E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									2.37E-04
															Acrolein	7.88E-06	lb/MMBtu									7.40E-05
															Naphthalene	1.30E-04	lb/MMBtu									1.22E-03
															Acenaphthylene	9.23E-06	lb/MMBtu									8.66E-05
															Acenaphthene	4.68E-06	lb/MMBtu									4.39E-05
															Fluorene	1.28E-05	lb/MMBtu									1.20E-04
															Phenanthrene	4.08E-05	lb/MMBtu									3.83E-04
															Anthracene	1.23E-06	lb/MMBtu									1.15E-05
															Fluoranthene	4.03E-06	lb/MMBtu									3.78E-05
															Pyrene	3.71E-06	lb/MMBtu									3.48E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.84E-06
															Chrysene	1.53E-06	lb/MMBtu									1.44E-05

Table H.28 Hourly Gaseous Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 5	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 5								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.04E-05
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.05E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.41E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.89E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.25E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									5.22E-06
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	7.72	13.23	0.01	0.88	0	1,530.61	0.06	0.01	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									7.28E-03
															Toluene	2.81E-04	lb/MMBtu									2.64E-03
															Xylenes	1.93E-04	lb/MMBtu									1.81E-03
															Formaldehyde	7.89E-05	lb/MMBtu									7.41E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									2.37E-04
															Acrolein	7.88E-06	lb/MMBtu									7.40E-05
															Naphthalene	1.30E-04	lb/MMBtu									1.22E-03
															Acenaphthylene	9.23E-06	lb/MMBtu									8.66E-05
															Acenaphthene	4.68E-06	lb/MMBtu									4.39E-05
															Fluorene	1.28E-05	lb/MMBtu									1.20E-04
															Phenanthrene	4.08E-05	lb/MMBtu									3.83E-04
															Anthracene	1.23E-06	lb/MMBtu									1.15E-05
															Fluoranthene	4.03E-06	lb/MMBtu									3.78E-05
															Pyrene	3.71E-06	lb/MMBtu									3.48E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.84E-06
															Chrysene	1.53E-06	lb/MMBtu									1.44E-05
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.04E-05
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.05E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.41E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.89E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.25E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									5.22E-06
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	5.79	9.92	0.01	0.66	0	1,147.96	0.05	0.009	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									5.46E-03
															Toluene	2.81E-04	lb/MMBtu									1.98E-03
															Xylenes	1.93E-04	lb/MMBtu									1.36E-03
															Formaldehyde	7.89E-05	lb/MMBtu									5.55E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									1.77E-04
															Acrolein	7.88E-06	lb/MMBtu									5.55E-05
															Naphthalene	1.30E-04	lb/MMBtu									9.15E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									6.50E-05
															Acenaphthene	4.68E-06	lb/MMBtu									3.29E-05
															Fluorene	1.28E-05	lb/MMBtu									9.01E-05

Table H.28 Hourly Gaseous Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 5	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 5								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Phenanthrene	4.08E-05	lb/MMBtu									2.87E-04
															Anthracene	1.23E-06	lb/MMBtu									8.66E-06
															Fluoranthene	4.03E-06	lb/MMBtu									2.84E-05
															Pyrene	3.71E-06	lb/MMBtu									2.61E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									4.38E-06
															Chrysene	1.53E-06	lb/MMBtu									1.08E-05
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									7.81E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.53E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									1.81E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									2.91E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.44E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									3.91E-06
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	5.79	9.92	0.01	0.66	0	1,147.96	0.05	0.009	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									5.46E-03
															Toluene	2.81E-04	lb/MMBtu									1.98E-03
															Xylenes	1.93E-04	lb/MMBtu									1.36E-03
															Formaldehyde	7.89E-05	lb/MMBtu									5.55E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									1.77E-04
															Acrolein	7.88E-06	lb/MMBtu									5.55E-05
															Naphthalene	1.30E-04	lb/MMBtu									9.15E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									6.50E-05
															Acenaphthene	4.68E-06	lb/MMBtu									3.29E-05
															Fluorene	1.28E-05	lb/MMBtu									9.01E-05
															Phenanthrene	4.08E-05	lb/MMBtu									2.87E-04
															Anthracene	1.23E-06	lb/MMBtu									8.66E-06
															Fluoranthene	4.03E-06	lb/MMBtu									2.84E-05
															Pyrene	3.71E-06	lb/MMBtu									2.61E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									4.38E-06
															Chrysene	1.53E-06	lb/MMBtu									1.08E-05
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									7.81E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.53E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									1.81E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									2.91E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.44E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									3.91E-06
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	1	hours	5.00	4.43	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.55	0.49	0.0007	0.03	0	76.53	0.003	0.0006	--
					50	kW									Benzene	9.33E-04	lb/MMBtu									4.38E-04
															Toluene	4.09E-04	lb/MMBtu									1.92E-04
															Xylenes	2.85E-04	lb/MMBtu									1.34E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.84E-05

Table H.28 Hourly Gaseous Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 5	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 5								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Formaldehyde	1.18E-03	lb/MMBtu									5.54E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									3.60E-04
															Acrolein	9.25E-05	lb/MMBtu									4.34E-05
															Naphthalene	8.48E-05	lb/MMBtu									3.98E-05
															Acenaphthylene	5.06E-06	lb/MMBtu									2.37E-06
															Acenaphthene	1.42E-06	lb/MMBtu									6.66E-07
															Fluorene	2.92E-05	lb/MMBtu									1.37E-05
															Phenanthrene	2.94E-05	lb/MMBtu									1.38E-05
															Anthracene	1.87E-06	lb/MMBtu									8.78E-07
															Fluoranthene	7.61E-06	lb/MMBtu									3.57E-06
															Pyrene	4.78E-06	lb/MMBtu									2.24E-06
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									7.89E-07
															Chrysene	3.53E-07	lb/MMBtu									1.66E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									4.65E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									7.28E-08
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									8.82E-08
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.76E-07
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									2.74E-07
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									2.30E-07
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	1	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	2.30	2.46	0.004	0.18	0	456.55	0.02	0.004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									2.61E-03
															Toluene	4.09E-04	lb/MMBtu									1.15E-03
															Xylenes	2.85E-04	lb/MMBtu									7.98E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.09E-04
															Formaldehyde	1.18E-03	lb/MMBtu									3.30E-03
															Acetaldehyde	7.67E-04	lb/MMBtu									2.15E-03
															Acrolein	9.25E-05	lb/MMBtu									2.59E-04
															Naphthalene	8.48E-05	lb/MMBtu									2.37E-04
															Acenaphthylene	5.06E-06	lb/MMBtu									1.42E-05
															Acenaphthene	1.42E-06	lb/MMBtu									3.98E-06
															Fluorene	2.92E-05	lb/MMBtu									8.18E-05
															Phenanthrene	2.94E-05	lb/MMBtu									8.23E-05
															Anthracene	1.87E-06	lb/MMBtu									5.24E-06
															Fluoranthene	7.61E-06	lb/MMBtu									2.13E-05
															Pyrene	4.78E-06	lb/MMBtu									1.34E-05
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									4.70E-06
															Chrysene	3.53E-07	lb/MMBtu									9.88E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									2.77E-07
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									4.34E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									5.26E-07

Table H.28 Hourly Gaseous Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 5	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 5								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.05E-06
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.63E-06
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.37E-06
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	1	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	2.30	2.46	0.004	0.18	0	456.55	0.02	0.004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									2.61E-03
															Toluene	4.09E-04	lb/MMBtu									1.15E-03
															Xylenes	2.85E-04	lb/MMBtu									7.98E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.09E-04
															Formaldehyde	1.18E-03	lb/MMBtu									3.30E-03
															Acetaldehyde	7.67E-04	lb/MMBtu									2.15E-03
															Acrolein	9.25E-05	lb/MMBtu									2.59E-04
															Naphthalene	8.48E-05	lb/MMBtu									2.37E-04
															Acenaphthylene	5.06E-06	lb/MMBtu									1.42E-05
															Acenaphthene	1.42E-06	lb/MMBtu									3.98E-06
															Fluorene	2.92E-05	lb/MMBtu									8.18E-05
															Phenanthrene	2.94E-05	lb/MMBtu									8.23E-05
															Anthracene	1.87E-06	lb/MMBtu									5.24E-06
															Fluoranthene	7.61E-06	lb/MMBtu									2.13E-05
															Pyrene	4.78E-06	lb/MMBtu									1.34E-05
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									4.70E-06
															Chrysene	3.53E-07	lb/MMBtu									9.88E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									2.77E-07
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									4.34E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									5.26E-07
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.05E-06
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.63E-06
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.37E-06
Tanks																										
T01	C7 Distribution Tank (T-C7D)	C7DT	4-03-010-19	NF	1	hours	0	0	0	1.08E-01	0	0	0	0	--	--	lb/hr	0	0	0	0.11	0	0	0	0	--
T02	MIBC Storage Tank (T-MIBCS)	MST	4-90-999-98	NF	1	hours	0	0	0	3.53E-03	0	0	0	0	--	--	lb/hr	0	0	0	0.004	0	0	0	0	--
T03	Diesel Fuel Storage Tank - Heavy Vehicles 1 (T-DFS-HV1)	DFSTHV	4-03-010-19	NF	1	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.01	0	0	0	0	5.71E-06
															Benzene	2.74E-05	lb/hr									2.74E-05
															Toluene	3.18E-04	lb/hr									3.18E-04
															Ethylbenzene	4.45E-05	lb/hr									4.45E-05
															m-Xylene	8.23E-04	lb/hr									8.23E-04
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									6.76E-04
T04	Diesel Fuel Storage Tank - Heavy Vehicles 2 (T-DFS-HV2)	DFSTHV	4-03-010-19	NF	1	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.01	0	0	0	0	5.71E-06
															Benzene	2.74E-05	lb/hr									2.74E-05
															Toluene	3.18E-04	lb/hr									3.18E-04
															Ethylbenzene	4.45E-05	lb/hr									4.45E-05

Table H.28 Hourly Gaseous Emissions - Year 5

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 5	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 5								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															m-Xylene	8.23E-04	lb/hr									8.23E-04
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									6.76E-04
Total Non-Fugitive Emissions (excluding tailpipe emissions):																		**32.38**	**52.57**	**0.07**	**3.61**	**0.004**	**7,363.56**	**0.30**	**0.06**	**0.08**
Total Fugitive Emissions (excluding tailpipe emissions):																		**3,484.00**	**884.00**	**104.00**	**0.86**	**0**	**29,455.36**	**1.19**	**0.24**	**0.76**
Total Emissions (excluding tailpipe emissions):																		**3,516.38**	**936.57**	**104.07**	**4.48**	**0.004**	**36,818.92**	**1.49**	**0.30**	**0.84**
Tailpipe Emissions (see Tables H.32-H.36):																		**231.86**	**294.05**	**1.00**	**20.76**	**--**	**47,012.42**	**--**	**--**	**--**

[a] CO_2e emissions are calculcated by summing the individual greenhouse gas emissions multiplied by their global warming potential (GWP). GWP of CO_2 = 1, GWP of CH_4 = 21, GWP of N_2O = 310.

[b] All HAP emissions are included in the facility-wide potential to emit, regardless of if they are fugitive or non-fugitive emissions.

Table H.29 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.15	g/hp-hr	7.01	0.08	23.14
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.03	g/hp-hr	0.33	0.004	1.10
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.03	g/hp-hr	0.04	0.0005	0.19
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.02	0.0002	0.07
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.003	0.00004	0.01
Rubber Tired Dozers, 834H Class	3	498	0.71	17	6,200	hours	0.575	0.01	g/hp-hr	0.01	0.0002	0.06
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	0.03	g/hp-hr	0.06	0.0007	0.20
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.03	g/hp-hr	0.06	0.0008	0.28
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.003	0.00004	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.15	g/hp-hr	0.70	0.008	3.08
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.01	g/hp-hr	0.007	0.00009	0.03
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.0007	0.000009	0.003

Table H.29 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.007
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.04	0.0005	0.17
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.008	0.0001	0.04
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.2117	g/mile	0.004	0.00005	0.02
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.2117	g/mile	0.00005	0.0000006	0.0002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.001	0.00002	0.006
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.02	g/hp-hr	0.004	0.00005	0.02
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00003	0.01
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000008	0.003
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000009	0.003
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.002	0.00002	0.009
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.01	g/hp-hr	0.0006	0.000007	0.003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.004

Table H.29 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.005
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.002	0.00002	0.009
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.2117	g/mile	0.0002	0.000002	0.0007
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.008
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.0005	0.000006	0.002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.005	0.00006	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.01	g/hp-hr	0.002	0.00003	0.01
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.02	g/hp-hr	0.001	0.00002	0.006
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.07	0.0009	0.32
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.2117	g/mile	0.0004	0.000005	0.002
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.2117	g/mile	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.02	g/hp-hr	0.06	0.0007	0.25
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.01	g/hp-hr	0.004	0.00005	0.001
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.01	g/hp-hr	0.009	0.0001	0.002
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.2117	g/mile	0.01	0.0002	0.04
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.2117	g/mile	0.003	0.000004	0.0005
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.2117	g/mile	0.01	0.00003	0.01

Table H.29 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 5

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.2117	g/mile	0.007	0.000005	0.001
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.001
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.2117	g/mile	0.003	0.000006	0.001
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.2117	g/mile	0.003	0.00001	0.003
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.2117	g/mile	0.003	0.000002	0.0003
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	0.0255	g/mile	0.002	0.00002	0.007
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	0.0255	g/mile	0.0002	0.000002	0.0007
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	0.0255	g/mile	0.0004	0.000005	0.002
Total Emissions from Haul Truck Engines:										**7.35**	**0.09**	**24.24**
Total Emissions from Other Mobile Engines:										**1.25**	**0.01**	**5.15**
Total Emissions from All Mobile Engines:										**8.59**	**0.10**	**29.39**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.30 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.15	g/hp-hr	7.01	0.08	23.14
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.03	g/hp-hr	0.33	0.004	1.10
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.03	g/hp-hr	0.04	0.0005	0.19
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.02	0.0002	0.07
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.003	0.00004	0.01
Rubber Tired Dozers, 834H Class	3	498	0.71	17	6,200	hours	0.575	0.01	g/hp-hr	0.01	0.0002	0.06
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	0.03	g/hp-hr	0.06	0.0007	0.20
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.03	g/hp-hr	0.06	0.0008	0.28
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.003	0.00004	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.15	g/hp-hr	0.70	0.008	3.08
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.01	g/hp-hr	0.007	0.00009	0.03
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.0007	0.000009	0.003

Table H.30 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.007
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.04	0.0005	0.17
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.008	0.0001	0.04
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.2117	g/mile	0.004	0.00005	0.02
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.2117	g/mile	0.00005	0.0000006	0.0002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.001	0.00002	0.006
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.02	g/hp-hr	0.004	0.00005	0.02
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00003	0.01
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Copper Cathode Forklift	1	92.5	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000008	0.003
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000009	0.003
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.002	0.00002	0.009
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.01	g/hp-hr	0.0006	0.000007	0.003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.004

Table H.30 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.005
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.002	0.00002	0.009
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.2117	g/mile	0.0002	0.000002	0.0007
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.008
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.0005	0.000006	0.002
Truck Shop Bridge Crane, 25 tons	1	24.1	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.005	0.00006	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.40	0.01	g/hp-hr	0.002	0.00003	0.01
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.30	0.02	g/hp-hr	0.001	0.00002	0.006
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.07	0.0009	0.32
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.2117	g/mile	0.0004	0.000005	0.002
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.2117	g/mile	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.02	g/hp-hr	0.06	0.0007	0.25
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.01	g/hp-hr	0.004	0.00005	0.001
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.01	g/hp-hr	0.009	0.0001	0.002
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.2117	g/mile	0.01	0.0002	0.04
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.2117	g/mile	0.003	0.000004	0.0005
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.2117	g/mile	0.01	0.00003	0.01

Table H.30 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 5

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.2117	g/mile	0.007	0.000005	0.001
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.001
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.2117	g/mile	0.003	0.000006	0.001
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.2117	g/mile	0.003	0.00001	0.003
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.2117	g/mile	0.003	0.000002	0.0003
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	0.0255	g/mile	0.002	0.00002	0.007
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	0.0255	g/mile	0.0002	0.000002	0.0007
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	0.0255	g/mile	0.0004	0.000005	0.002
Total Emissions from Haul Truck Engines:										**7.35**	**0.09**	**24.24**
Total Emissions from Other Mobile Engines:										**1.25**	**0.01**	**5.15**
Total Emissions from All Mobile Engies:										**8.59**	**0.10**	**29.39**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.31 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.15	g/hp-hr	7.01	0.08	23.14
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.03	g/hp-hr	0.33	0.004	1.10
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.03	g/hp-hr	0.04	0.0005	0.19
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.02	0.0002	0.07
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.003	0.00004	0.01
Rubber Tired Dozers, 834H Class	3	498	0.71	17	6,200	hours	0.575	0.01	g/hp-hr	0.01	0.0002	0.06
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	0.03	g/hp-hr	0.06	0.0007	0.20
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.03	g/hp-hr	0.06	0.0008	0.28
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.003	0.00004	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.15	g/hp-hr	0.70	0.008	3.08
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.01	g/hp-hr	0.007	0.00009	0.03
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.0007	0.000009	0.003

Table H.31 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.007
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.04	0.0005	0.17
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.008	0.0001	0.04
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.2117	g/mile	0.004	0.00005	0.02
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.2117	g/mile	0.00005	0.0000006	0.0002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.001	0.00002	0.006
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.02	g/hp-hr	0.004	0.00005	0.02
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00003	0.01
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000008	0.003
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000009	0.003
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.002	0.00002	0.009
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.01	g/hp-hr	0.0006	0.000007	0.003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.004

Table H.31 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.005
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.002	0.00002	0.009
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.2117	g/mile	0.0002	0.000002	0.0007
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.008
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.0005	0.000006	0.002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.005	0.00006	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.01	g/hp-hr	0.002	0.00003	0.01
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.02	g/hp-hr	0.001	0.00002	0.006
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.07	0.0009	0.32
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.2117	g/mile	0.0004	0.000005	0.002
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.2117	g/mile	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.02	g/hp-hr	0.06	0.0007	0.25
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.01	g/hp-hr	0.004	0.00005	0.001
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.01	g/hp-hr	0.009	0.0001	0.002
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.2117	g/mile	0.01	0.0002	0.04
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.2117	g/mile	0.003	0.000004	0.0005
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.2117	g/mile	0.01	0.00003	0.01

Table H.31 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 5

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.2117	g/mile	0.007	0.000005	0.001
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.001
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.2117	g/mile	0.003	0.000006	0.001
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.2117	g/mile	0.003	0.00001	0.003
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.2117	g/mile	0.003	0.000002	0.0003
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	0.0255	g/mile	0.002	0.00002	0.007
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	0.0255	g/mile	0.0002	0.000002	0.0007
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	0.0255	g/mile	0.0004	0.000005	0.002
Total Emissions from Haul Truck Engines:										**7.35**	**0.09**	**24.24**
Total Emissions from Other Mobile Engines:										**1.25**	**0.01**	**5.15**
Total Emissions from All Mobile Engines:										**8.59**	**0.10**	**29.39**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.32 CO Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	CO Emission Factor		CO Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	2.60	g/hp-hr	121.52	1.46	401.01
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	2.60	g/hp-hr	29.16	0.35	96.24
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	2.60	g/hp-hr	3.84	0.05	16.81
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	2.60	g/hp-hr	3.93	0.05	17.20
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	2.60	g/hp-hr	0.77	0.009	3.36
Rubber Tired Dozers, 834H Class	3	498	0.71	17	6,200	hours	0.575	2.60	g/hp-hr	3.49	0.04	15.26
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	2.60	g/hp-hr	1.20	0.01	5.27
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	2.60	g/hp-hr	1.34	0.02	5.87
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	2.60	g/hp-hr	4.82	0.06	17.58
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	5.55	0.07	24.29
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.79	0.009	3.44
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	2.60	g/hp-hr	12.17	0.15	53.33
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.66	0.02	7.29
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.66	0.02	7.29
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.29	0.02	5.67
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	2.60	g/hp-hr	1.30	0.02	5.67
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	2.60	g/hp-hr	1.85	0.02	8.11
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	3.70	g/hp-hr	0.27	0.003	1.16

Table H.32 CO Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	CO Emission Factor		CO Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.43	0.005	1.86
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	3.42	0.04	15.00
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	2.60	g/hp-hr	2.12	0.03	9.27
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	1.870	g/mile	0.04	0.0004	0.15
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	1.870	g/mile	0.0005	0.000006	0.002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.32	0.004	1.42
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.50	0.006	2.18
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	4.10	g/hp-hr	0.82	0.01	3.58
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.59	0.007	2.59
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.58	0.007	2.53
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.33	0.004	1.46
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.33	0.004	1.46
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	2.60	g/hp-hr	0.18	0.002	0.79
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	2.60	g/hp-hr	0.19	0.002	0.83
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	2.60	g/hp-hr	0.53	0.006	2.30
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	3.70	g/hp-hr	0.23	0.003	1.00
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.59	0.007	2.59
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.18	0.002	0.79

Table H.32 CO Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	CO Emission Factor		CO Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.23	0.003	1.00
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.36	0.004	1.58
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.29	0.02	5.67
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	1.870	g/mile	0.001	0.00002	0.006
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.49	0.006	2.16
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	3.70	g/hp-hr	0.20	0.002	0.86
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	4.90	g/hp-hr	0.08	0.001	0.37
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	3.70	g/hp-hr	0.85	0.01	3.71
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	3.70	g/hp-hr	0.27	0.003	1.17
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	6.39	0.08	28.00
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	1.870	g/mile	0.004	0.00004	0.02
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	1.870	g/mile	0.02	0.0003	0.10
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	2.60	g/hp-hr	7.45	0.09	32.61
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	2.60	g/hp-hr	1.15	0.01	0.29
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	3.70	g/hp-hr	3.26	0.04	0.82
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	1.870	g/mile	0.12	0.002	0.35
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	1.870	g/mile	0.03	0.00003	0.004
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	1.870	g/mile	0.09	0.0003	0.11

Table H.32 CO Emissions from Fuel Burning Mobile Engines - Year 5

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	CO Emission Factor		CO Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	1.870	g/mile	0.06	0.0001	0.04
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	1.870	g/mile	0.06	0.00005	0.01
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	1.870	g/mile	0.06	0.0001	0.04
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	1.870	g/mile	0.06	0.00009	0.01
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	1.870	g/mile	0.03	0.00005	0.01
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	1.870	g/mile	0.03	0.0001	0.03
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	1.870	g/mile	0.03	0.00002	0.002
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	15.51	g/mile	0.94	0.01	4.10
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	15.51	g/mile	0.09	0.001	0.41
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	15.51	g/mile	0.23	0.003	1.03
Total Emissions from Haul Truck Engines:										**150.68**	**1.81**	**497.25**
Total Emissions from Other Mobile Engines:										**81.18**	**0.97**	**331.91**
Total Emissions from All Mobile Engines:										**231.86**	**2.78**	**829.16**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.33 NO_x Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	4.50	g/hp-hr	210.32	2.52	694.06
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	2.61	g/hp-hr	29.28	0.35	96.61
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	2.60	g/hp-hr	3.84	0.05	16.81
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.30	g/hp-hr	0.45	0.005	1.99
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.30	g/hp-hr	0.09	0.001	0.39
Rubber Tired Dozers, 834H Class	3	498	0.71	17	6,200	hours	0.575	0.30	g/hp-hr	0.40	0.005	1.76
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.30	g/hp-hr	0.14	0.002	0.61
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.30	g/hp-hr	0.15	0.002	0.68
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	2.60	g/hp-hr	4.82	0.06	17.58
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	5.55	0.07	24.29
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.09	0.001	0.40
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	4.50	g/hp-hr	21.07	0.25	92.29
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.19	0.002	0.84
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.19	0.002	0.84
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.15	0.002	0.65
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.30	g/hp-hr	0.15	0.002	0.65
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.30	g/hp-hr	0.21	0.003	0.94
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.30	g/hp-hr	0.02	0.0003	0.09

Table H.33 NO_x Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.05	0.0006	0.21
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	3.42	0.04	15.00
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.30	g/hp-hr	0.24	0.003	1.07
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	7.394	g/mile	0.14	0.002	0.61
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	7.394	g/mile	0.002	0.00002	0.008
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.03	0.0003	0.12
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.04	0.0005	0.18
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	3.30	g/hp-hr	0.66	0.008	2.88
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.07	0.0008	0.30
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.05	0.0006	0.21
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.03	0.0003	0.12
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.03	0.0003	0.12
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.30	g/hp-hr	0.02	0.0003	0.09
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.30	g/hp-hr	0.02	0.0003	0.10
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.30	g/hp-hr	0.06	0.0007	0.27
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.30	g/hp-hr	0.02	0.0002	0.08
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.05	0.0006	0.21
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	3.30	g/hp-hr	0.16	0.002	0.71

Table H.33 NO_x Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	3.30	g/hp-hr	0.20	0.002	0.89
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	3.30	g/hp-hr	0.32	0.004	1.41
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.15	0.002	0.65
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	7.394	g/mile	0.006	0.00007	0.02
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.06	0.0007	0.25
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.02	0.0002	0.07
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	5.00	g/hp-hr	0.09	0.001	0.38
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.30	g/hp-hr	0.07	0.0008	0.30
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	3.30	g/hp-hr	0.24	0.003	1.05
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	6.39	0.08	28.00
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	7.394	g/mile	0.01	0.0002	0.06
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	7.394	g/mile	0.09	0.001	0.39
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.50	g/hp-hr	1.43	0.02	6.27
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.30	g/hp-hr	0.13	0.002	0.03
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.30	g/hp-hr	0.26	0.003	0.07
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	7.394	g/mile	0.48	0.008	1.38
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	7.394	g/mile	0.12	0.0001	0.02
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	7.394	g/mile	0.36	0.001	0.42

Table H.33 NO_x Emissions from Fuel Burning Mobile Engines - Year 5

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	7.394	g/mile	0.24	0.0004	0.16
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	7.394	g/mile	0.24	0.0002	0.05
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	7.394	g/mile	0.24	0.0004	0.14
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	7.394	g/mile	0.24	0.0003	0.04
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	7.394	g/mile	0.12	0.0002	0.05
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	7.394	g/mile	0.12	0.0004	0.10
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	7.394	g/mile	0.12	0.00006	0.009
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	1.145	g/mile	0.07	0.0008	0.30
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	1.145	g/mile	0.007	0.00008	0.03
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	1.145	g/mile	0.02	0.0002	0.08
Total Emissions from Haul Truck Engines:										**239.60**	**2.88**	**790.67**
Total Emissions from Other Mobile Engines:										**54.45**	**0.64**	**225.69**
Total Emissions from All Mobile Engines:										**294.05**	**3.51**	**1,016.36**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.34 SO_2 Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 5		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 5	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.002	g/hp-hr	0.24	0.003	0.78
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.002	g/hp-hr	0.06	0.0007	0.19
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.003	g/hp-hr	0.007	0.00008	0.03
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.002	g/hp-hr	0.005	0.00006	0.02
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.002	g/hp-hr	0.0008	0.00001	0.004
Rubber Tired Dozers, 834H Class	3	498	0.71	17	6,200	hours	0.575	0.002	g/hp-hr	0.004	0.00005	0.02
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.002	g/hp-hr	0.001	0.00002	0.006
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.003	g/hp-hr	0.002	0.00003	0.01
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	0.003	g/hp-hr	0.02	0.0002	0.06
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.008	0.0001	0.04
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.001	0.00001	0.005
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.001	g/hp-hr	0.01	0.0001	0.05
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00003	0.01
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00003	0.01
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00002	0.008
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.002	g/hp-hr	0.001	0.00002	0.006
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.001	g/hp-hr	0.003	0.00003	0.01
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.002	g/hp-hr	0.0003	0.000004	0.001

Table H.34 SO_2 Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 5		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 5	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0006	0.000007	0.003
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.004	0.00004	0.02
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.002	g/hp-hr	0.004	0.00005	0.02
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.005	0.00006	0.02
Tire Handler	1	90	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0002	0.000003	0.001
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000003	0.001
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0004	0.000004	0.002
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.003	g/hp-hr	0.001	0.00002	0.006
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0009	0.00001	0.004
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0004	0.000005	0.002
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000003	0.001
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000003	0.001
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.002	g/hp-hr	0.0005	0.000006	0.002
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.002	g/hp-hr	0.0006	0.000007	0.002
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.002	g/hp-hr	0.0009	0.00001	0.004
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.002	g/hp-hr	0.0004	0.000005	0.002
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0004	0.000005	0.002
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0001	0.000002	0.0006

Table H.34 SO_2 Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 5		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 5	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000002	0.0007
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0003	0.000003	0.001
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00002	0.008
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0007	0.000008	0.003
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0007	0.000009	0.003
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0002	0.000002	0.0009
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.00006	0.0000008	0.0003
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.40	0.002	g/hp-hr	0.0009	0.00001	0.004
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.002	g/hp-hr	0.0004	0.000005	0.002
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.007	0.00008	0.03
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.001	0.00001	0.005
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.001	g/hp-hr	0.009	0.0001	0.04
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.021	g/hp-hr	0.009	0.0001	0.002
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.021	g/hp-hr	0.02	0.0002	0.005
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.43	0.002	g/hp-hr	0.002	0.00001	0.005
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.43	0.124	g/hp-hr	0.12	0.00006	0.005
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.43	0.005	g/hp-hr	0.005	0.00001	0.005

Table H.34 SO_2 Emissions from Fuel Burning Mobile Engines - Year 5

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 5		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 5	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.43	0.014	g/hp-hr	0.01	0.00001	0.005
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.43	0.045	g/hp-hr	0.05	0.00002	0.005
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.43	0.016	g/hp-hr	0.02	0.00002	0.006
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.43	0.053	g/hp-hr	0.05	0.00003	0.005
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.43	0.042	g/hp-hr	0.04	0.00002	0.005
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.43	0.021	g/hp-hr	0.02	0.00001	0.005
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.43	0.240	g/hp-hr	0.24	0.0001	0.005
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	0.54	0.017	g/hp-hr	0.003	0.00004	0.01
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	0.54	0.0025	g/hp-hr	0.0005	0.000006	0.002
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	0.54	0.017	g/hp-hr	0.002	0.00003	0.01
Total Emissions from Haul Truck Engines:										**0.29**	**0.004**	**0.96**
Total Emissions from Other Mobile Engines:										**0.71**	**0.002**	**0.57**
Total Emissions from All Mobile Engines:										**1.00**	**0.006**	**1.54**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.35 VOC Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.30	g/hp-hr	14.02	0.17	46.27
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.14	g/hp-hr	1.59	0.02	5.24
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.14	g/hp-hr	0.21	0.002	0.91
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.14	g/hp-hr	0.21	0.003	0.93
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.14	g/hp-hr	0.04	0.0005	0.18
Rubber Tired Dozers, 834H Class	3	498	0.71	17	6,200	hours	0.575	0.14	g/hp-hr	0.19	0.002	0.82
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.14	g/hp-hr	0.06	0.0008	0.28
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.14	g/hp-hr	0.07	0.0009	0.32
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	0.14	g/hp-hr	0.26	0.003	0.95
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.30	0.004	1.31
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.04	0.0005	0.19
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.30	g/hp-hr	1.40	0.02	6.15
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.09	0.001	0.39
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.09	0.001	0.39
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.07	0.0008	0.31
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.14	g/hp-hr	0.07	0.0008	0.31
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.14	g/hp-hr	0.10	0.001	0.44
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.14	g/hp-hr	0.01	0.0001	0.04

Table H.35 VOC Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.02	0.0003	0.10
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.18	0.002	0.81
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.14	g/hp-hr	0.11	0.001	0.50
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.403	g/mile	0.008	0.00009	0.03
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.403	g/mile	0.0001	0.000001	0.0004
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.01	0.0001	0.05
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.02	0.0002	0.08
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.20	g/hp-hr	0.04	0.0005	0.17
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.03	0.0004	0.14
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.02	0.0003	0.10
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.01	0.0002	0.06
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.01	0.0002	0.06
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.14	g/hp-hr	0.01	0.0001	0.04
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.14	g/hp-hr	0.01	0.0001	0.04
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.14	g/hp-hr	0.03	0.0003	0.12
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.14	g/hp-hr	0.009	0.0001	0.04
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.02	0.0003	0.10
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.20	g/hp-hr	0.01	0.0001	0.04

Table H.35 VOC Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.20	g/hp-hr	0.01	0.0001	0.05
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.20	g/hp-hr	0.02	0.0002	0.09
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.07	0.0008	0.31
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.403	g/mile	0.0003	0.000004	0.001
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.03	0.0003	0.12
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.007	0.00009	0.03
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.60	g/hp-hr	0.01	0.0001	0.05
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.14	g/hp-hr	0.03	0.0004	0.14
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.20	g/hp-hr	0.01	0.0002	0.06
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.34	0.004	1.51
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.403	g/mile	0.0008	0.000009	0.003
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.403	g/mile	0.005	0.00006	0.02
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.14	g/hp-hr	0.40	0.005	1.76
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.14	g/hp-hr	0.06	0.0007	0.02
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.14	g/hp-hr	0.12	0.001	0.03
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.403	g/mile	0.03	0.0005	0.08
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.403	g/mile	0.007	0.000007	0.001
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.403	g/mile	0.02	0.00006	0.02

Table H.35 VOC Emissions from Fuel Burning Mobile Engines - Year 5

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 5		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.403	g/mile	0.01	0.00002	0.008
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.403	g/mile	0.01	0.00001	0.003
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.403	g/mile	0.01	0.00002	0.008
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.403	g/mile	0.01	0.00002	0.002
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.403	g/mile	0.007	0.00001	0.003
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.403	g/mile	0.007	0.00002	0.006
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.403	g/mile	0.007	0.000003	0.0005
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	1.329	g/mile	0.08	0.001	0.35
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	1.329	g/mile	0.008	0.0001	0.04
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	1.329	g/mile	0.02	0.0002	0.09
Total Emissions from Haul Truck Engines:										**15.61**	**0.19**	**51.52**
Total Emissions from Other Mobile Engines:										**5.15**	**0.06**	**21.17**
Total Emissions from All Mobile Engines:										**20.76**	**0.25**	**72.69**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.36 CO_2 Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 5		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	497	g/hp-hr	23,241.93	278.90	76,698.38
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	497	g/hp-hr	5,578.06	66.94	18,407.61
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	497	g/hp-hr	734.01	8.81	3,214.95
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	497	g/hp-hr	751.28	9.02	3,290.60
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	497	g/hp-hr	146.56	1.76	641.95
Rubber Tired Dozers, 834H Class	3	498	0.71	17	6,200	hours	0.575	497	g/hp-hr	666.56	8.00	2,919.55
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	497	g/hp-hr	230.13	2.76	1,007.98
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	497	g/hp-hr	256.47	3.08	1,123.34
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	497	g/hp-hr	921.12	11.05	3,362.08
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	497	g/hp-hr	1,060.69	12.73	4,645.81
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	497	g/hp-hr	150.26	1.80	658.16
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	497	g/hp-hr	2,328.58	27.94	10,199.17
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	497	g/hp-hr	318.21	3.82	1,393.74
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	497	g/hp-hr	318.21	3.82	1,393.74
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	497	g/hp-hr	247.49	2.97	1,084.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	497	g/hp-hr	247.74	2.97	1,085.10
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	497	g/hp-hr	354.32	4.25	1,551.92
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	497	g/hp-hr	35.69	0.43	156.30

Table H.36 CO_2 Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 5		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	497	g/hp-hr	81.32	0.98	356.18
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	497	g/hp-hr	654.91	7.86	2,868.52
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	497	g/hp-hr	404.62	4.86	1,772.25
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.43	497	g/hp-hr	654.09	7.85	2,864.92
Tire Handler	1	90	0.75	18	6,570	hours	0.43	497	g/hp-hr	31.82	0.38	139.37
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	497	g/hp-hr	43.66	0.52	191.23
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	497	g/hp-hr	66.95	0.80	293.23
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	497	g/hp-hr	99.00	1.19	433.61
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	497	g/hp-hr	113.14	1.36	495.55
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	497	g/hp-hr	77.62	0.93	339.97
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	497	g/hp-hr	44.87	0.54	196.55
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	497	g/hp-hr	44.87	0.54	196.55
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	497	g/hp-hr	34.53	0.41	151.26
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	497	g/hp-hr	36.26	0.44	158.82
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	497	g/hp-hr	100.44	1.21	439.91
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	497	g/hp-hr	30.63	0.37	134.15
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	497	g/hp-hr	79.56	0.95	348.47
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	497	g/hp-hr	24.26	0.29	106.24

Table H.36 CO_2 Emissions from Fuel Burning Mobile Engines - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 5		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	497	g/hp-hr	30.56	0.37	133.86
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	497	g/hp-hr	48.51	0.58	212.48
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	497	g/hp-hr	247.49	2.97	1,084.02
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.43	497	g/hp-hr	88.39	1.06	387.15
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	497	g/hp-hr	94.40	1.13	413.48
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	497	g/hp-hr	26.52	0.32	116.15
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	497	g/hp-hr	8.52	0.10	37.32
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	497	g/hp-hr	113.80	1.37	498.43
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	497	g/hp-hr	36.01	0.43	157.74
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	497	g/hp-hr	1,222.50	14.67	5,354.57
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.43	497	g/hp-hr	159.10	1.91	696.87
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.43	497	g/hp-hr	361.34	4.34	1,582.67
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	497	g/hp-hr	1,424.15	17.09	6,237.78
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	497	g/hp-hr	219.26	2.63	54.82
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	497	g/hp-hr	438.53	5.26	109.63
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.43	497	g/hp-hr	212.14	1.97	720.72
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.43	497	g/hp-hr	212.14	0.11	9.10
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.43	497	g/hp-hr	212.14	0.60	220.71

Table H.36 CO_2 Emissions from Fuel Burning Mobile Engines - Year 5

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 5		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.43	497	g/hp-hr	212.14	0.22	80.92
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.43	497	g/hp-hr	212.14	0.11	24.86
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.43	497	g/hp-hr	235.71	0.22	80.78
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.43	497	g/hp-hr	212.14	0.11	21.20
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.43	497	g/hp-hr	212.14	0.11	27.09
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.43	497	g/hp-hr	212.14	0.15	52.98
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.43	497	g/hp-hr	212.14	0.11	4.71
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	0.54	1.08	lb/hp-hr	51.03	0.61	223.51
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	0.54	1.08	lb/hp-hr	51.03	0.61	223.51
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	0.54	1.08	lb/hp-hr	36.45	0.44	159.65
Total Emissions from Haul Truck Engines:										**28,820.00**	**345.84**	**95,105.99**
Total Emissions from Other Mobile Engines:										**18,192.42**	**196.27**	**68,141.92**
Total Emissions from All Mobile Engines:										**47,012.42**	**542.11**	**163,247.91**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.37 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 5		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 5	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.00003	g/hp-hr	0.005	0.00006	0.02
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.00003	g/hp-hr	0.001	0.00001	0.004
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.00005	g/hp-hr	0.0001	0.000002	0.0006
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.00004	g/hp-hr	0.00009	0.000001	0.0004
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.00003	g/hp-hr	0.00002	0.0000002	0.00007
Rubber Tired Dozers, 834H Class	3	498	0.71	17	6,200	hours	0.575	0.00003	g/hp-hr	0.00008	0.000001	0.0004
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.00004	g/hp-hr	0.00003	0.0000003	0.0001
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.00005	g/hp-hr	0.00005	0.0000006	0.0002
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	0.00007	g/hp-hr	0.0003	0.000004	0.001
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.0002	0.000002	0.0007
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00002	0.0000003	0.0001
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.00003	g/hp-hr	0.0002	0.000003	0.0009
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00005	0.0000006	0.0002
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00005	0.0000006	0.0002
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00004	0.0000005	0.0002
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.00003	g/hp-hr	0.00003	0.0000003	0.0001
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.00003	g/hp-hr	0.00005	0.0000007	0.0002
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.00003	g/hp-hr	0.000007	0.00000008	0.00003

Table H.37 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 5		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 5	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00001	0.0000001	0.00005
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.00007	0.0000009	0.0003
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.00003	g/hp-hr	0.00008	0.0000009	0.0003
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.0001	0.000001	0.0004
Tire Handler	1	90	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000007	0.00000009	0.00003
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.00006	g/hp-hr	0.00003	0.0000003	0.0001
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00002	0.0000002	0.00008
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000009	0.0000001	0.00004
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.00003	g/hp-hr	0.00001	0.0000001	0.00005
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.00003	g/hp-hr	0.00001	0.0000001	0.00005
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.00003	g/hp-hr	0.00002	0.0000002	0.00008
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.00003	g/hp-hr	0.000008	0.0000001	0.00003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000009	0.0000001	0.00004
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000003	0.00000003	0.00001

Table H.37 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 5												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 5		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 5	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000003	0.00000004	0.00001
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00004	0.0000005	0.0002
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00001	0.0000002	0.00006
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00001	0.0000002	0.00006
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.000004	0.00000005	0.00002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.000001	0.00000002	0.000006
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.40	0.00003	g/hp-hr	0.00002	0.0000002	0.00008
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.00003	g/hp-hr	0.000008	0.00000009	0.00003
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.0001	0.000002	0.0006
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00002	0.0000003	0.0001
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00005	0.0000007	0.0002
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.00003	g/hp-hr	0.0002	0.000002	0.0008
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.0004	g/hp-hr	0.0002	0.000002	0.00005
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.0004	g/hp-hr	0.0004	0.000005	0.00009
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.43	0.00003	g/hp-hr	0.00003	0.0000003	0.0001
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.43	0.002	g/hp-hr	0.002	0.000001	0.0001
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.43	0.0001	g/hp-hr	0.0001	0.0000003	0.0001

Table H.37 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 5

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 5		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 5	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.43	0.0003	g/hp-hr	0.0003	0.0000003	0.0001
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.43	0.0009	g/hp-hr	0.0009	0.0000005	0.0001
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.43	0.0003	g/hp-hr	0.0003	0.0000003	0.0001
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.43	0.001	g/hp-hr	0.001	0.0000005	0.0001
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.43	0.0008	g/hp-hr	0.0008	0.0000004	0.0001
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.43	0.0004	g/hp-hr	0.0004	0.0000003	0.0001
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.43	0.005	g/hp-hr	0.005	0.000002	0.0001
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	0.54	--	--	--	--	--
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	0.54	--	--	--	--	--
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	0.54	--	--	--	--	--
Total Emissions from Haul Truck Engines:										**0.006**	**0.00007**	**0.02**
Total Emissions from Other Mobile Engines:										**0.01**	**0.00004**	**0.01**
Total Emissions from All Mobile Engines:										**0.02**	**0.0001**	**0.03**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.38 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 5													
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 5			Soot Emissions - Year 5		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.24	1.68	0.02	5.55	5.32	0.06	17.57
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.24	0.08	0.001	0.26	0.25	0.003	0.84
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.24	0.01	0.0001	0.05	0.03	0.0004	0.15
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.24	0.004	0.00004	0.02	0.01	0.0001	0.05
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.24	0.0007	0.000008	0.003	0.002	0.00003	0.01
Rubber Tired Dozers, 834H Class	3	498	0.71	17	6,200	hours	0.24	0.003	0.00004	0.01	0.01	0.0001	0.04
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.24	0.001	0.00001	0.005	0.003	0.00004	0.02
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.24	0.001	0.00001	0.005	0.004	0.00005	0.02
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.24	0.01	0.0002	0.05	0.04	0.0005	0.15
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.24	0.02	0.0002	0.07	0.05	0.0006	0.21
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.24	0.0007	0.000009	0.003	0.002	0.00003	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.24	0.17	0.002	0.74	0.53	0.006	2.34
Stemming Truck	2	450	0.75	18	6,570	hours	0.24	0.0015	0.00002	0.007	0.005	0.00006	0.02
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.24	0.002	0.00002	0.007	0.005	0.00006	0.02
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.44	0.002	0.00003	0.01	0.003	0.00003	0.01
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.24	0.001	0.00001	0.005	0.004	0.00005	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.24	0.002	0.00002	0.007	0.005	0.00006	0.02
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.44	0.0003	0.000004	0.001	0.0004	0.000005	0.002

Table H.38 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 5													
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 5			Soot Emissions - Year 5		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.24	0.0004	0.000005	0.002	0.001	0.00001	0.005
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.24	0.009	0.0001	0.04	0.03	0.0004	0.13
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.24	0.002	0.00002	0.008	0.006	0.00007	0.03
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.44	0.002	0.00002	0.008	0.002	0.00003	0.01
Tire Handler	1	90	0.75	18	6,570	hours	0.51	0.00002	0.0000003	0.0001	0.00002	0.0000003	0.0001
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.51	0.0004	0.000005	0.002	0.0004	0.000005	0.002
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.44	0.0006	0.000007	0.003	0.0007	0.000009	0.003
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.5	0.002	0.00002	0.009	0.002	0.00002	0.009
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.24	0.0005	0.000007	0.002	0.002	0.00002	0.008
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.44	0.0007	0.000008	0.003	0.0009	0.00001	0.004
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.51	0.0005	0.000005	0.002	0.0004	0.000005	0.002
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.44	0.0004	0.000005	0.002	0.0005	0.000006	0.002
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.44	0.0003	0.000004	0.001	0.0004	0.000005	0.002
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.44	0.0003	0.000004	0.001	0.0004	0.000005	0.002
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.24	0.0005	0.000006	0.002	0.002	0.00002	0.007
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.44	0.0003	0.000003	0.001	0.0003	0.000004	0.001
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.5	0.0008	0.00001	0.003	0.0008	0.00001	0.003
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.5	0.0005	0.000006	0.002	0.0005	0.000006	0.002

Table H.38 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 5													
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 5			Soot Emissions - Year 5		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.48	0.0006	0.000007	0.003	0.0006	0.000008	0.003
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.5	0.001	0.00001	0.004	0.001	0.00001	0.004
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.44	0.002	0.00003	0.01	0.003	0.00003	0.01
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.24	0.00004	0.0000004	0.0002	0.0001	0.000001	0.0005
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.24	0.0005	0.000005	0.002	0.001	0.00002	0.006
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.24	0.0001	0.000002	0.0006	0.0004	0.000005	0.002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.24	0.001	0.00001	0.005	0.004	0.00005	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.24	0.0005	0.000007	0.002	0.002	0.00002	0.008
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.48	0.0007	0.000008	0.003	0.0007	0.000009	0.003
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.24	0.02	0.0002	0.08	0.06	0.0007	0.25
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.24	0.00009	0.000001	0.0004	0.0003	0.000003	0.001
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.24	0.0006	0.000007	0.003	0.002	0.00002	0.008
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.24	0.01	0.0002	0.06	0.04	0.0005	0.19
Storm Water Pond Pump	1	200	1.00	24	500	hours	0.5	0.002	0.00003	0.0005	0.002	0.00003	0.0005
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	0.5	0.004	0.00005	0.001	0.004	0.00005	0.001
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.24	0.003	0.00006	0.009	0.01	0.0002	0.03
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.24	0.0002	0.0000006	0.00009	0.0008	0.000002	0.0003
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.24	0.002	0.000008	0.003	0.008	0.00003	0.009

Table H.38 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 5

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 5			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 5			Soot Emissions - Year 5		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.24	0.002	0.000003	0.001	0.005	0.000009	0.003
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.24	0.001	0.000001	0.0003	0.005	0.000004	0.001
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.24	0.002	0.000003	0.0009	0.005	0.000008	0.003
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.24	0.001	0.000002	0.0003	0.004	0.000007	0.0008
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.44	0.001	0.000002	0.0006	0.001	0.000003	0.0008
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.44	0.001	0.000005	0.001	0.002	0.000006	0.002
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.44	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	--	--	--	--	--	--	--
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	--	--	--	--	--	--	--
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	--	--	--	--	--	--	--
Total Emissions from Haul Truck Engines:											**5.58**	**0.07**	**18.41**
Total Emissions from Other Mobile Engines:											**0.92**	**0.01**	**3.86**
Total Emissions from All Mobile Engines:											**6.50**	**0.08**	**22.27**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

YEAR 10

Table H.39 Particulate Matter Emission Factors - Year 10

Process Code	Process Description	SCC Code	Emission Factors				Prod. Rate Units	Particulate Matter Emission Factor Inputs [a]																							Reference
			PM/TSP	PM_{10}	$PM_{2.5}$	Units		k (PM/TSP)	k (PM_{10})	k ($PM_{2.5}$)	A (ft^2)	U (mph)	M (%)	W (tons)	s (%)	sL (g/m^2)	S (mph)	P (days/yr)	a (PM/TSP)	a (PM_{10})	a ($PM_{2.5}$)	b (PM/TSP)	b (PM_{10})	b ($PM_{2.5}$)	u^*	u_t^*	e	f (%)	PE	
Drilling	Drilling	3-05-020-10	1.30	0.43	0.08	lb/hole	holes	1	0.33	0.06																					AP-42, Section 11.9, Table 11.9-4 (10/98)
Blast	Blasting	3-05-020-09	328.26	170.69	9.85	lb/blast	blasts	1	0.52	0.03	81,920																				AP-42, Section 11.9, Table 11.9-1 (10/98)
Loading	Loading	3-03-024-08	0.0007	0.0003	0.00005	lb/ton	tons	0.74	0.35	0.053		4.14	4																		AP-42, Section 13.2.4, Expression 1 (11/06)
HaulingHD	Haul Trucks - Hourly/Daily	3-05-020-11	21.25	5.46	0.55	lb/VMT	VMT	4.9	1.5	0.15				305	5.0				0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expression 1a (11/06)
HaulingA	Haul Trucks - Annual	3-05-020-11	17.70	4.55	0.45	lb/VMT	VMT	4.9	1.5	0.15				305	5.0			61	0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expressions 1a and 2 (11/06)
Bldzrs	Bulldozers	3-05-020-99	2.82	0.43	0.30	lb/hr	hrs	5.7	0.75	0.60			4		2.5				1.2	1.5	1.2	1.3	1.4	1.3							AP-42, Section 11.9, Table 11.9-1 (10/98)
SupVehUY10H	Support Vehicular Traffic on Unpaved Roads - Year 10 Hourly	3-03-999-99	8.89	2.29	0.23	lb/VMT	VMT	4.9	1.5	0.15				44.0	5.0				0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expression 1a (11/06)
SupVehUY10D	Support Vehicular Traffic on Unpaved Roads - Year 10 Daily	3-03-999-99	8.78	2.26	0.23	lb/VMT	VMT	4.9	1.5	0.15				42.8	5.0				0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expression 1a (11/06)
SupVehUY10A	Support Vehicular Traffic on Unpaved Roads - Year 10 Annual	3-03-999-99	7.31	1.88	0.19	lb/VMT	VMT	4.9	1.5	0.15				42.8	5.0			61	0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expressions 1a and 2 (11/06)
SupVehPEY10H	Support Vehicular Traffic on Paved Entrance Road - Year 10 Hourly	3-03-999-99	0.05	0.01	0.003	lb/VMT	VMT	0.011	0.0022	0.00054				19.8		0.2															AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPEY10D	Support Vehicular Traffic on Paved Entrance Road - Year 10 Daily	3-03-999-99	0.05	0.01	0.002	lb/VMT	VMT	0.011	0.0022	0.00054				18.7		0.2															AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPEY10A	Support Vehicular Traffic on Paved Entrance Road - Year 10 Annual	3-03-999-99	0.04	0.008	0.002	lb/VMT	VMT	0.011	0.0022	0.00054				16.5		0.2		61													AP-42, Section 13.2.1, Expression 2 (01/11)
SupVehPIY10H	Support Vehicular Traffic on Paved Industrial Roads - Year 10 Hourly	3-03-999-99	1.23	0.25	0.06	lb/VMT	VMT	0.011	0.0022	0.00054				15.5		8.2															AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPIY10D	Support Vehicular Traffic on Paved Industrial Roads - Year 10 Daily	3-03-999-99	1.01	0.20	0.05	lb/VMT	VMT	0.011	0.0022	0.00054				12.8		8.2															AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPIY10A	Support Vehicular Traffic on Paved Industrial Roads - Year 10 Annual	3-03-999-99	0.80	0.16	0.04	lb/VMT	VMT	0.011	0.0022	0.00054				10.7		8.2		61													AP-42, Section 13.2.1, Expression 2 (01/11)
WtrTrksHD	Water Trucks - Hourly/Daily	3-05-020-99	17.06	4.38	0.44	lb/VMT	VMT	4.9	1.5	0.15				187.4	5.0				0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expression 1a (11/06)
WtrTrksA	Water Trucks - Annual	3-05-020-99	14.21	3.65	0.37	lb/VMT	VMT	4.9	1.5	0.15				187.4	5.0			61	0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expressions 1a and 2 (11/06)
GradersY10	Graders - Year 10	3-05-020-99	2.05	0.71	0.06	lb/VMT	VMT	1	0.60	0.031							4.83		0.040	0.051	0.040	2.5	2.0	2.5							AP-42, Section 11.9, Table 11.9-1 (10/98)
TrMlyCncPrt	Molybdnum Concentrate Transfer (Protected)	3-03-024-08	0.00002	0.00001	0.000002	lb/ton	tons	0.74	0.35	0.053		1.3	15																		AP-42, Section 13.2.4, Expression 1 (11/06)
DTrMlyCncPrt	Dried Molybdenum Concentrate Transfer (Protected)	3-03-024-08	0.00004	0.00002	0.000003	lb/ton	tons	0.74	0.35	0.053		1.3	10																		AP-42, Section 13.2.4, Expression 1 (11/06)
DTrMlyCnc	Dried Molybdenum Concentrate Transfer (Unprotected)	3-03-024-08	0.0003	0.0002	0.00002	lb/ton	tons	0.74	0.35	0.053		6.21	10																		AP-42, Section 13.2.4, Expression 1 (11/06)
TrCuCncPrt	Copper Concentrate Transfer (Protected)	3-03-024-08	0.00004	0.00002	0.000003	lb/ton	tons	0.74	0.35	0.053		1.3	10																		AP-42, Section 13.2.4, Expression 1 (11/06)
TrCuCnc	Copper Concentrate Loadout	3-03-024-08	0.0003	0.0002	0.00002	lb/ton	tons	0.74	0.35	0.053		6.21	10																		AP-42, Section 13.2.4, Expression 1 (11/06)
FiltTailPrt	Filtered Tailings Transfer (Protected)	3-03-024-08	0.00002	0.00001	0.000002	lb/ton	tons	0.74	0.35	0.053		1.3	15																		AP-42, Section 13.2.4, Expression 1 (11/06)
FiltTail	Filtered Tailings Transfer (Unprotected)	3-03-024-08	0.0002	0.00009	0.00001	lb/ton	tons	0.74	0.35	0.053		6.21	15																		AP-42, Section 13.2.4, Expression 1 (11/06)
CrushP	Primary Crushing - High Moisture Ore	3-03-024-05	0.02	0.009	0.002	lb/ton	tons			0.185																					AP-42, Section 11.24, Table 11.24-2 (08/82) and 11.19.2-2 (08/04)
CrushS	Secondary Crushing - High Moisture Ore	3-03-024-06	0.05	0.02	0.004	lb/ton	tons			0.185																					AP-42, Section 11.24, Table 11.24-2 (08/82) and 11.19.2-2 (08/04)
CrushT	Tertiary Crushing - High Moisture Ore	3-03-024-07	0.06	0.02	0.004	lb/ton	tons			0.185																					AP-42, Section 11.24, Table 11.24-2 (08/82) and 11.19.2-2 (08/04)
Screen	Screening	3-05-020-02	0.025	0.0087	0.0006	lb/ton	tons			0.068																					AP-42, Section 11.19, Table 11.19.2-2 (08/04)
MolyDry	Drying of High Moisture Ore	3-03-024-11	19.70	12.00	5.91	lb/ton	tons			0.30																					AP-42, Section 11.24, Table 11.24-2 (08/82) and Appendix B.2 (09/96)

Table H.39 Particulate Matter Emission Factors - Year 10

Process Code	Process Description	SCC Code	Emission Factors				Prod. Rate Units	Particulate Matter Emission Factor Inputs [a]																						Reference
			PM/TSP	PM_{10}	$PM_{2.5}$	Units		k (PM/TSP)	k (PM_{10})	k ($PM_{2.5}$)	A (ft^2)	U (mph)	M (%)	W (tons)	s (%)	sL (g/m^2)	S (mph)	P (days/yr)	a (PM/TSP)	a (PM_{10})	a ($PM_{2.5}$)	b (PM/TSP)	b (PM_{10})	b ($PM_{2.5}$)	u^*	u_t^*	e	f (%)	PE	
TrStnPrt	Material Transfer (Protected)	3-03-024-08	0.0002	0.00007	0.00001	lb/ton	tons	0.74	0.35	0.053		1.3	4																	AP-42, Section 13.2.4, Expression 1 (11/06)
TrStnUnp	Material Transfer (Unprotected)	3-03-024-08	0.001	0.0006	0.00009	lb/ton	tons	0.74	0.35	0.053		6.21	4																	AP-42, Section 13.2.4, Expression 1 (11/06)
LimeLd	Lime Product Loading, Enclosed Truck	3-05-016-26	0.61	0.29	0.04	lb/ton	tons	1	0.47	0.07																				AP-42, Section 11.17, Table 11.17-4 (02/98) and AP-42, Section 13.2.4 (11/06)
LimeSlk	Lime Slaking	3-05-016-09	8.00	8.00	8.00	lb/ton	tons																							AP-42, Section 11.17, Table 11.17-2 (02/98), Scrubber CE = 99%
ReagTr	Miscellaneous Reagent Material Transfer	3-03-024-04	0.008	0.004	0.0006	lb/ton	tons	0.74	0.35	0.053		6.21	1																	AP-42, Section 13.2.4, Expression 1 (11/06)
ICDE1	Internal Combustion Diesel Engine 37 ≤ kW > 75	2-02-001-02	0.40	0.40	0.40	g/kW-hr	hours	1	1	1																				NSPS Emission Standard
ICDE2	Internal Combustion Diesel Engine 225 ≤ kW > 450	2-02-001-02	0.20	0.20	0.20	g/kW-hr	hours	1	1	1																				NSPS Emission Standard
ICDE3	Internal Combustion Diesel Engine > 560 kW	2-02-001-02	0.20	0.20	0.20	g/kW-hr	hours	1	1	1																				NSPS Emission Standard
DFB	Diesel (Distillate Oil) Fired Boiler <100 MMBtu/hr	1-02-005-03	3.30	2.30	1.54	lb/1000 gal	hours	1	0.5	0.12																				AP-42, Section 1.3, Tables 1.3-1, 1.3-2 and 1.3-6 (09/98)
CADC	Crushing Area Dust Collector	none	1.42	0.64	0.12	lb/hr	hours	2.22	1.00	0.18																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
SARTDC	Stockpile Area and Reclaim Tunnel Dust Collector	none	3.11	1.47	0.22	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
SFCDC	Stockpile Feed Conveyor Transfer Point Dust Collector	none	0.76	0.36	0.05	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
PCADC	Pebble Crusher Area Dust Collector	none	0.96	0.32	0.06	lb/hr	hours	2.99	1.00	0.18																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
CCDC	Copper Concentrate Dust Collectors	none	3.76	1.78	0.27	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
MS/EP	Molybdenum Scrubber / Electrostatic Precipitator	none	0.015	0.014	0.013	lb/hr	hours	1.10	1.00	0.94																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
MDC	Molybdenum Dust Collector	none	0.112	0.053	0.008	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
LDC	Laboratory Dust Collectors	none	0.008	0.005	0.002	gr/dscf	dscf	1.65	1.00	0.49																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
SFDC	SAG Feed Conveyor Dust Collector	none	0.97	0.46	0.07	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
WindROM	Wind Erosion - Run of Mine Stockpile	3-03-888-01	0.21	0.11	0.02	ton/acre-yr	acres	1	0.5	0.075					2.5												38	4.77	22	FDEMI[b] (07/83), p. 51-57, MRI Equation, AP-42, Section 13.2.5 (11/06) and Table 13.2.4-1 (11/06)
WindCvd	Wind Erosion - Covered Stockpile	3-03-888-01	0	0	0	ton/acre-yr	acres																							Assumed
TailStrg	Wind Erosion - Tailings Storage	3-03-888-01	0.02	0.01	0.002	ton/acre-yr	acres	1	0.5	0.075															0.57	0.43				AP-42, Section 13.2.5 (11/06)

[a] k = particle size multiplier, A = horizonal area of blasting surface, U = mean wind speed, M = material moisture content, W = mean vehicle weight, s = surface material silt content, sL = road surface silt loading, S = mean vehicle speed, P = number of days per year with at least 0.01 inches of precipitation, a = constant based on particle size, b = constant based on particle size, u^* = friction velocity, u_t^* = threshold friction velocity, e = surface erodibility, f = percentage of time the wind speed exceeds 12 mph, PE = Thornthwaite's Precipitation-Evaporation Index

[b] FDEMI = *Fugitive Dust Emission Factors for the Mining Industry*

Table H.40 Gaseous Emission Factors - Year 10

Process Code	Process Description	SCC Code	Emission Factor									Prod. Rate Units	Reference
			CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	Units		
Blast	Blasting	3-05-020-09	67.00	17.00	2.00	0	0	566	0.02	0.005	lb/tons ANFO	tons ANFO	AP-42 Section 13.3, Table 13.3-1 (02/80) and 40 CFR 98, Tables C-1 and C-2[a]
SX	Solvent Extraction Mixers and Settlers	4-90-001-99	0	0	0	9.43E-05	0	0	0	0	lb/hr-ft^2	hours	Hydrometallurgy of Copper (Control Efficiency of 66%)
EW	Electrowining Tankhouse	none	0	0	0	0	1.57E-04	0	0	0	lb/hr-ft^2	hours	Applied Environmental Consultants - Report[b]
ICDE1	Internal Combustion Diesel Engine 37 ≤ kW > 75	2-02-001-02	5.0	4.4	0.0066	0.3	0	694	0.03	0.006	g/kW-hr	hours	NSPS Emission Standard, Complete Sulfur Conversion[c], and 40 CFR 98, Tables C-1 and C-2
ICDE2	Internal Combustion Diesel Engine 225 ≤ kW > 450	2-02-001-02	3.5	3.7	0.0066	0.3	0	694	0.03	0.006	g/kW-hr	hours	NSPS Emission Standard, Complete Sulfur Conversion[c], and 40 CFR 98, Tables C-1 and C-2
ICDE3	Internal Combustion Diesel Engine > 560 kW	2-02-001-02	3.5	6.0	0.0066	0.40	0	694	0.03	0.006	g/kW-hr	hours	NSPS Emission Standard, Complete Sulfur Conversion[c], and 40 CFR 98, Tables C-1 and C-2
DFB	Diesel (Distillate Oil) Fired Boiler <100 MMBtu/hr	1-02-005-03	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	lb/1000 gal	hours	AP-42 Section 1.3, Tables 1.3-1 and 1.3-3 (05/10)[c] and 40 CFR 98, Tables C-1 and C-2
C7DT	C7 Distribution Tank	4-03-010-19	0	0	0	1.08E-01	0	0	0	0	lb/hr	hours	EPA Tanks Program 4.0[d]
MST	MIBC Storage Tank	4-90-999-98	0	0	0	3.53E-03	0	0	0	0	lb/hr	hours	EPA Tanks Program 4.0[d]
DFSTHV	Diesel Fuel Storage Tank - Heavy Vehicles	4-03-010-19	0	0	0	1.39E-02	0	0	0	0	lb/hr	hours	EPA Tanks Program 4.0[d]

[a] Assumes a fuel oil to ammonium nitrate ratio of 9.0%.

[b] "Measurement of Sulfuric Acid Mist Emissions from the Cyprus Twin Buttes Copper Company Electrowinning Tankhouse" (02/93).

[c] SO_2 emissions are calculated using a sulfur content of 0.0015% for diesel fuel.

[d] Assumes continuous operation.

Table H.41 Particulate Matter Control Efficiencies - Year 10

Control Code	Control Description	Pick-up Efficiency (%)	Control Efficiency (%)	Reference
CADC	Crushing Area Dust Collector (PC-CADC)	100%	--	Assumed
SARTDC	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	100%	--	Assumed
SFCDC	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	100%	--	Assumed
PCADC	Pebble Crusher Area Dust Collector (PC-PCADC)	100%	--	Assumed
CCDC	Copper Concentrate Dust Collectors (PC-CCDC1/CCDC2)	100%	--	Assumed
MS/EP	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	100%	--	Assumed
LSV	Lime Storage Bin Vent (PC-LSBV)	100%	90%	Vendor Specification
LSS	Lime Slaker Scrubber (PC-LSS)	100%	99%	AP-42, Table B.2-3 (09/96)
SMSV	Sodium Metasilicate Storage Bin Vent (PC-SMSBV)	100%	90%	Vendor Specification
CVS	EW Cell Ventilation Scrubbers (PC-CVS)	100%	99%	Engineering Design
MDC	Molybdenum Dust Collector (PC-MDC)	100%	--	Assumed
SFDC	SAG Feed Conveyor Dust Collector (PC-SFDC)	100%	--	Assumed
HaulRdUI	Road Watering (Inside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
HaulRdUO	Road Watering (Outside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
HaulRdWTI	Road Watering - Water Trucks (Inside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
HaulRdWTO	Road Watering - Water Trucks (Outside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
Water	Addition of Process Water	N/A	100%	Assumed
WSpry	Water Spray at Unprotected Points	N/A	82.5%	Average Value of AP-42, p. 11.19.1-5 (11/95)
Wet	Wet Process	N/A	100%	Assumed
Clean	Wet, Cleaned Ore (no fines)	N/A	100%	Assumed
Enclosed	Totally Enclosed Transfer Point	N/A	100%	Assumed
UndrGrd	Underground Transfer Point	N/A	100%	Assumed
None	No Pollution Controls	0%	0%	Assumed

[a] EPA Document gives methods for calculating efficiencies - pages 5-9 to 5-14

Table H.42 Annual Particulate Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 10	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 10		PM_{10} Emissions (tpy) - Year 10		$PM_{2.5}$ Emissions (tpy) - Year 10	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Mining																		
MN01	Drilling	Drilling	3-05-020-10	F	27,680	holes	1.30	0.43	0.08	lb/hole	None	0%	17.99	17.99	6.00	6.00	1.11	1.11
MN02	Blasting	Blast	3-05-020-09	F	346	blasts	328.26	170.69	9.85	lb/blast	None	0%	56.79	56.79	29.53	29.53	1.70	1.70
MN03	Loading Concentrate Ore	Loading	3-03-024-08	F	27,375,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	9.60	9.60	4.54	4.54	0.69	0.69
MN04	Loading Leach Ore	Loading	3-03-024-08	F	0	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0	0	0	0	0	0
MN05	Loading Waste Rock	Loading	3-03-024-08	F	81,577,500	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	28.61	28.61	13.53	13.53	2.05	2.05
MN06a	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Inside the Pit)	HaulingA	3-05-020-11	F	443,848	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUI	90%	3,927.03	392.70	1,009.06	100.91	100.91	10.09
MN06b	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Outside the Pit)	HaulingA	3-05-020-11	F	140,401	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUO	90%	1,242.22	124.22	319.19	31.92	31.92	3.19
MN07a	Hauling Leach Ore to Leach Pad (Inside the Pit)	HaulingA	3-05-020-11	F	0	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUI	90%	0	0	0	0	0	0
MN07b	Hauling Leach Ore to Leach Pad (Outside the Pit)	HaulingA	3-05-020-11	F	0	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUO	90%	0	0	0	0	0	0
MN08a	Hauling Waste Rock to Waste Rock Storage Area (Inside the Pit)	HaulingA	3-05-020-11	F	642,732	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUI	90%	5,686.68	568.67	1,461.21	146.12	146.12	14.61
MN08b	Hauling Waste Rock to Waste Rock Storage Area (Outside the Pit)	HaulingA	3-05-020-11	F	989,560	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUO	90%	8,755.31	875.53	2,249.70	224.97	224.97	22.50
MN09	Unloading Concentrate Ore to Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	2,737,500	tons	0.001	0.0006	0.00009	lb/ton	None	0%	1.63	1.63	0.77	0.77	0.12	0.12
MN10	Unloading Leach Ore to Leach Pad	TrStnUnp	3-03-024-08	F	0	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0	0	0	0	0	0
MN11	Unloading Waste Rock to Waste Rock Storage Area	TrStnUnp	3-03-024-08	F	81,577,500	tons	0.001	0.0006	0.00009	lb/ton	None	0%	48.47	48.47	22.93	22.93	3.47	3.47
MN12	Bulldozer Use	Bldzrs	3-05-020-99	F	55,365	hrs	2.82	0.43	0.30	lb/hr	None	0%	78.15	78.15	11.78	11.78	8.21	8.21
MN13a	Water Truck Use (Inside the Pit)	WtrTrksA	3-05-020-99	F	70,101	VMT	14.21	3.65	0.37	lb/VMT	HaulRdWTI	90%	498.15	49.82	128.00	12.80	12.80	1.28
MN13b	Water Truck Use (Outside the Pit)	WtrTrksA	3-05-020-99	F	72,899	VMT	14.21	3.65	0.37	lb/VMT	HaulRdWTO	90%	518.04	51.80	133.11	13.31	13.31	1.33
MN14	Grader Use	GradersY10	3-05-020-99	F	87,000	VMT	2.05	0.71	0.06	lb/VMT	None	0%	89.36	89.36	31.10	31.10	2.77	2.77
MN15a	Support Vehicle Use on Unpaved Roads (Inside the Pit)	SupVehUY10A	3-03-999-99	F	272,396	VMT	7.31	1.88	0.19	lb/VMT	HaulRdUI	90%	995.52	99.55	255.80	25.58	25.58	2.56
MN15b	Support Vehicle Use on Unpaved Roads (Outside the Pit)	SupVehUY10A	3-03-999-99	F	272,396	VMT	7.31	1.88	0.19	lb/VMT	HaulRdUO	90%	995.52	99.55	255.80	25.58	25.58	2.56
M16a	Support Vehicle Use on the Paved Entrance Road (within the process area boundary)	SupVehPEY10A	3-03-999-99	F	74,399	VMT	0.04	0.008	0.002	lb/VMT	None	0%	1.58	1.58	0.32	0.32	0.08	0.08
M16b	Support Vehicle Use on the Paved Entrance Road (outside of the process area boundary)	SupVehPEY10A	3-03-999-99	F	322,577	VMT	0.04	0.008	0.002	lb/VMT	None	0%	6.84	6.84	1.37	1.37	0.34	0.34
M16c	Support Vehicle Use on Paved Industrial Roads	SupVehPIY10A	3-03-999-99	F	185,705	VMT	0.80	0.16	0.04	lb/VMT	None	0%	74.37	74.37	14.87	14.87	3.65	3.65
Primary Crushing, Conveying, Coarse Ore Storage, and Reclaim Conveying																		
PC01	Wind Erosion of the Run of Mine Stockpile	WindROM	3-03-888-01	F	26	acres	0.21	0.11	0.02	ton/acre-yr	None	0%	5.43	5.43	2.72	2.72	0.41	0.41
PC02	Unloading to Primary Crusher Dump Hopper (H-CDp) from Haul Trucks or Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	27,375,000	tons	0.001	0.0006	0.00009	lb/ton	WSpry	82.5%	16.27	2.85	7.69	1.35	1.16	0.20
PC03	Primary Crusher (PCr)	CrushP	3-03-024-05	NF	43,362,000	tons	0.02	0.009	0.002	lb/ton	CADC	100%	433.62	0	195.13	0	36.14	0
PC04	Primary Crusher (PCr) to Crusher Discharge Hopper (H-CDs)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
PC05	Crusher Discharge Hopper (H-CDs) to Crusher Discharge Feeder (F-CD)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	3.38	0	1.60	0	0.24	0
PC06	Crusher Discharge Feeder (F-CD) to Stockpile Feed Conveyor No. 1 (CV-SF1)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	3.38	0	1.60	0	0.24	0

Table H.42 Annual Particulate Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 10	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 10		PM_{10} Emissions (tpy) - Year 10		$PM_{2.5}$ Emissions (tpy) - Year 10	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
PC07	Stockpile Feed Conveyor No. 1 (CV-SF1) to Stockpile Feed Conveyor No. 2 (CV-SF2)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SFCDC	100%	3.38	0	1.60	0	0.24	0
PC08	Stockpile Feed Conveyor No. 2 (CV-SF2) to Covered Coarse Ore Stockpile	TrStnPrt	3-03-024-08	F	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	3.38	0	1.60	0	0.24	0
PC09	Wind Erosion of the Coarse Ore Stockpile	WindCvd	3-03-888-01	F	5	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
PC10	Coarse Ore Stockpile to Reclaim Feeders (F-R1/R4)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	UndrGrd [a]	100%	0	0	0	0	0	0
PC11	Reclaim Feeders (F-R1/R4) to Reclaim Conveyor (CV-R)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	3.38	0	1.60	0	0.24	0
PC12	Reclaim Conveyor (CV-R) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	3.38	0	1.60	0	0.24	0
PC13	Pebble Conveyor No. 3 (CV-Pb3) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.49	0	0.23	0	0.03	0
PC14	SAG Mill Feed Conveyor (CV-SMF) to SAG Mill (M-SAG)	TrStnPrt	3-03-024-08	NF	49,631,400	tons	0.0002	0.00007	0.00001	lb/ton	Water [a]	100%	0	0	0	0	0	0
Milling																		
M01	SAG Mill (M-SAG)	CrushS	3-03-024-06	NF	49,669,200	tons	0.05	0.02	0.004	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M02	SAG Mill (M-SAG) to Trommel Screen (Sn-T)	TrStnPrt	3-03-024-08	NF	49,669,200	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M03	Trommel Screen (Sn-T)	Screen	3-05-020-02	NF	49,669,200	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M04	Trommel Screen (Sn-T) to Pebble Conveyor No. 1 (CV-Pb1)	TrStnPrt	3-03-024-08	NF	10,505,042	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M05	Pebble Conveyor No. 1 (CV-Pb1) to Pebble Wash Screen (Sn-PbW)	TrStnPrt	3-03-024-08	NF	10,505,042	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M06	Pebble Wash Screen (Sn-PbW)	Screen	3-05-020-02	NF	10,505,042	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M07	Pebble Wash Screen (Sn-PbW) to Pebble Conveyor No. 2	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M08	Pebble Conveyor No. 2 (CV-Pb2) to SAG Oversize Surge Bin (B-SAGOS)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.49	0	0.23	0	0.03	0
M09	SAG Oversize Surge Bin (B-SAGOS) to Pebble Crusher Feeder (F-PbC)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.49	0	0.23	0	0.03	0
M10	Pebble Crusher Feeder (F-PbC) to Pebble Crusher (PbC)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M11	Pebble Crusher (PbC)	CrushT	3-03-024-07	NF	6,269,400	tons	0.06	0.02	0.004	lb/ton	PCADC	100%	188.08	0	62.69	0	11.61	0
M12	Pebble Crusher (PbC) to Pebble Conveyor No. 3 (CV-Pb3)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.49	0	0.23	0	0.03	0
Copper Concentrate Dewatering and Stacking																		
CCD01	Copper Concentrate Filters (Ft-CC1/CC4) to Copper Concentrate Conveyor (CV-CC)	TrCuCncPrt	3-03-024-08	NF	550,936	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
CCD02	Copper Concentrate Conveyor (CV-CC) to Copper Concentrate Loadout Stockpile	TrCuCncPrt	3-03-024-08	F	550,936	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.01	0	0.006	0	0.0009	0
CCD03	Wind Erosion of Copper Concentrate Loadout Stockpile	WindCvd	3-03-888-01	F	1.17	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
CCD04	Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loaders	TrCuCncPrt	3-03-024-08	F	550,936	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.01	0	0.006	0	0.0009	0
Molybdenum Dewatering and Packaging																		
MD01	Molybdenum Concentrate Filter (Ft-MC) to Molybdenum Concentrate Dryer (D-MC)	TrMlyCncPrt	3-03-024-08	NF	6,377	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD02	Molybdenum Concentrate Dryer	MolyDry	3-03-024-11	NF	6,377	tons	19.70	12.00	5.91	lb/ton	MS/EP	100%	62.81	0	38.26	0	18.84	0
MD03	Molybdenum Concentrate Dryer (D-MC) to Molybdenum Concentrate Bin (B-MC)	DTrMlyCncPrt	3-03-024-08	NF	6,377	tons	0.00004	0.00002	0.000003	lb/ton	MDC	100%	0.0001	0	0.00007	0	0.00001	0
MD04	Molybdenum Concentrate Bin (B-MC) to Molybdenum Concentrate Hopper (H-MC)	DTrMlyCnc	3-03-024-08	NF	6,377	tons	0.0003	0.0002	0.00002	lb/ton	None	0%	0.001	0.001	0.0005	0.0005	0.00008	0.00008

Table H.42 Annual Particulate Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 10	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 10		PM_{10} Emissions (tpy) - Year 10		$PM_{2.5}$ Emissions (tpy) - Year 10	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
MD05	Molybdenum Concentrate Hopper (H-MC) to Molybdenum Concentrate Conveyor (CV-MC)	DTrMlyCncPrt	3-03-024-08	NF	6,377	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD06	Molybdenum Concentrate Conveyor (CV-MC) to Molybdenum Packaging and Weigh System (MPS)	DTrMlyCnc	3-03-024-08	NF	6,377	tons	0.0003	0.0002	0.00002	lb/ton	MDC	100%	0.001	0	0.0005	0	0.00008	0
Tailings Dewatering and Placement																		
TDS01	Tailings Filters (Ft-T1/T14) to Tailings Belt Feeders (F-T1/T14)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS02	Tailings Belt Feeders (F-T1/T14) to Fixed Tailings Conveyor No. 1 (CV-F1)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS03	Fixed Tailings Conveyor No. 1 (CV-F1) to Fixed Tailings Conveyor No. 2 (CV-F2)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS04	Fixed Tailings Conveyor No. 2 (CV-F2) to Fixed Tailings Conveyor No. 3 (CV-F3)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.52	0.52	0.25	0.25	0.04	0.04
TDS05	Fixed Tailings Conveyor No. 3 (CV-F3) to Relocatable Conveyor (CV-R1)	FiltTailPrt	3-03-024-08	F	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.52	0.52	0.25	0.25	0.04	0.04
TDS06	Relocatable Conveyor (CV-R1) to Shiftable Conveyor (CV-S1)	FiltTailPrt	3-03-024-08	F	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.52	0.52	0.25	0.25	0.04	0.04
TDS07	Shiftable Conveyor (CV-S1) to Belt Wagon Conveyor (CV-BW1)	FiltTail	3-03-024-08	F	42,804,687	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	4.00	4.00	1.89	1.89	0.29	0.29
TDS08	Belt Wagon Conveyor (CV-BW1) to Spreader Crawler Mounted Conveyor (CV-SP1)	FiltTail	3-03-024-08	F	42,804,687	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	4.00	4.00	1.89	1.89	0.29	0.29
TDS09	Spreader Crawler Mounted Conveyor (CV-SP1) to Tailings Storage	FiltTail	3-03-024-08	F	42,804,687	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	4.00	4.00	1.89	1.89	0.29	0.29
TDS10	Wind Erosion of Tailings Storage	TailStrg	3-03-888-01	F	1,500	acres	0.02	0.01	0.002	ton/acre-yr	None	0%	30.23	30.23	15.11	15.11	2.27	2.27
Fuel Burning Equipment																		
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	8,760	hours	3.30	2.30	1.54	lb/1000 gal	None	0%	0.63	0.63	0.44	0.44	0.30	0.30
					6.0	MMBtu/hr												
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.11	0.11	0.11	0.11	0.11	0.11
					1,000	kW												
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.11	0.11	0.11	0.11	0.11	0.11
					1,000	kW												
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.08	0.08	0.08	0.08	0.08	0.08
					750	kW												
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.08	0.08	0.08	0.08	0.08	0.08
					750	kW												
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	500	hours	0.40	0.40	0.40	g/kW-hr	None	0%	0.01	0.01	0.01	0.01	0.01	0.01
					50	kW												
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.03	0.03	0.03	0.03	0.03	0.03
					400	hp												
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.03	0.03	0.03	0.03	0.03	0.03
					400	hp												

Table H.42 Annual Particulate Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 10	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 10		PM_{10} Emissions (tpy) - Year 10		$PM_{2.5}$ Emissions (tpy) - Year 10	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Miscellaneous Sources																		
MS01	Transfer of Lime to the Lime Storage Bin (B-L)	LimeLd	3-05-016-26	NF	56,700	tons	0.61	0.29	0.04	lb/ton	LSV [a]	90%	1.73	1.73	0.82	0.82	0.12	0.12
MS02	Lime Storage Bin (B-L) to Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2)	ReagTr	3-03-024-04	NF	56,700	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS03	Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2) to Lime Slakers 1 and 2 (T-LS1/2)	ReagTr	3-03-024-04	NF	56,700	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS04	Lime Slaking in Lime Slakers 1 and 2 (T-LS1/2)	LimeSlk	3-05-016-09	NF	56,700	tons	8.00	8.00	8.00	lb/ton	LSS	99%	226.80	2.27	226.80	2.27	226.80	2.27
MS05	Transfer of Sodium Metasilicate to the Sodium Metasilicate Storage Bin (B-SM)	ReagTr	3-03-024-04	NF	3,000	tons	0.008	0.004	0.0006	lb/ton	SMSV [a]	90%	0.001	0.001	0.0006	0.0006	0.00009	0.00009
MS06	Transfer of Flocculant from Supersacks to Flocculant Storage Bins (B-F1/F2)	ReagTr	3-03-024-04	NF	1,100	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.005	0.005	0.002	0.002	0.0003	0.0003
MS07	Transfer of Guar from Bags to Guar Feeder (F-Gu)	ReagTr	3-03-024-04	NF	150	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.0006	0.0006	0.0003	0.0003	0.00004	0.00004
MS08	Transfer of Granular Cobalt Sulfate from Bags to Cobalt Sulfate Feeder (F-CoS)	ReagTr	3-03-024-04	NF	6	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.00002	0.00002	0.00001	0.00001	0.000002	0.000002
Particulate Matter Pollution Control Equipment with Emission Limits																		
PCL01	Crushing Area Dust Collector (PC-CADC)	CADC	none	NF	8,760	hours	1.42	0.64	0.12	lb/hr	--	--	--	6.22	--	2.80	--	0.52
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	SARTDC	none	NF	8,760	hours	3.11	1.47	0.22	lb/hr	--	--	--	13.61	--	6.44	--	0.97
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	SFCDC	none	NF	8,760	hours	0.76	0.36	0.05	lb/hr	--	--	--	3.33	--	1.58	--	0.24
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	PCADC	none	NF	8,760	hours	0.96	0.32	0.06	lb/hr	--	--	--	4.19	--	1.40	--	0.26
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	CCDC	none	NF	8,760	hours	3.76	1.78	0.27	lb/hr	--	--	--	16.48	--	7.80	--	1.18
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	CCDC	none	NF	8,760	hours	3.76	1.78	0.27	lb/hr	--	--	--	16.48	--	7.80	--	1.18
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	MS/EP	none	NF	8,760	hours	0.015	0.014	0.013	lb/hr	--	--	--	0.07	--	0.06	--	0.06
PCL08	Molybdenum Dust Collector (PC-MDC)	MDC	none	NF	8,760	hours	0.112	0.053	0.008	lb/hr	--	--	--	0.49	--	0.23	--	0.04
PCL09	Laboratory Dust Collector 1 (PC-L1)	LDC	none	NF	4,357,315,176	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	2.56	--	1.56	--	0.76
PCL10	Laboratory Dust Collector 2 (PC-L2)	LDC	none	NF	4,357,315,176	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	2.56	--	1.56	--	0.76
PCL11	Laboratory Dust Collector 3 (PC-L3)	LDC	none	NF	4,357,315,176	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	2.56	--	1.56	--	0.76
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	SFDC	none	NF	8,760	hours	0.97	0.46	0.07	lb/hr	--	--	--	4.26	--	2.01	--	0.31
Total Non-Fugitive Emissions (excluding tailpipe emissions):													**933.50**	**78.46**	**533.76**	**39.03**	**295.66**	**10.23**
Total Fugitive Emissions (excluding tailpipe emissions):													**23,100.24**	**2,726.80**	**5,981.91**	**743.27**	**610.38**	**86.11**
Total Emissions (excluding tailpipe emissions):													**24,033.75**	**2,805.25**	**6,515.67**	**782.30**	**906.04**	**96.34**
Tailpipe Emissions (see Tables H.48-H.50):													**29.39**	**29.39**	**29.39**	**29.39**	**29.39**	**29.39**

[a] The control efficiency for this emission unit is inherent to the process. Therefore, the control efficiency is applied to both uncontrolled and controlled emissions.

Table H.43 Maximum Daily Particulate Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 10	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 10		PM_{10} Emissions (tpd) - Year 10		$PM_{2.5}$ Emissions (tpd) - Year 10	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Mining																		
MN01	Drilling	Drilling	3-05-020-10	F	80	holes	1.30	0.43	0.08	lb/hole	None	0%	0.05	0.05	0.02	0.02	0.003	0.003
MN02	Blasting	Blast	3-05-020-09	F	1.0	blasts	328.26	170.69	9.85	lb/blast	None	0%	0.16	0.16	0.09	0.09	0.005	0.005
MN03	Loading Concentrate Ore	Loading	3-03-024-08	F	90,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0.03	0.03	0.01	0.01	0.002	0.002
MN04	Loading Leach Ore	Loading	3-03-024-08	F	0	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0	0	0	0	0	0
MN05	Loading Waste Rock	Loading	3-03-024-08	F	268,200	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0.09	0.09	0.04	0.04	0.007	0.007
MN06a	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Inside the Pit)	HaulingHD	3-05-020-11	F	1,459	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	15.50	1.55	3.98	0.40	0.40	0.04
MN06b	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Outside the Pit)	HaulingHD	3-05-020-11	F	462	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	4.90	0.49	1.26	0.13	0.13	0.01
MN07a	Hauling Leach Ore to Leach Pad (Inside the Pit)	HaulingHD	3-05-020-11	F	0	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	0	0	0	0	0	0
MN07b	Hauling Leach Ore to Leach Pad (Outside the Pit)	HaulingHD	3-05-020-11	F	0	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	0	0	0	0	0	0
MN08a	Hauling Waste Rock to Waste Rock Storage Area (Inside the Pit)	HaulingHD	3-05-020-11	F	2,113	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	22.45	2.24	5.77	0.58	0.58	0.06
MN08b	Hauling Waste Rock to Waste Rock Storage Area (Outside the Pit)	HaulingHD	3-05-020-11	F	3,253	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	34.56	3.46	8.88	0.89	0.89	0.09
MN09	Unloading Concentrate Ore to Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	90,000	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0.05	0.05	0.03	0.03	0.004	0.004
MN10	Unloading Leach Ore to Leach Pad	TrStnUnp	3-03-024-08	F	0	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0	0	0	0	0	0
MN11	Unloading Waste Rock to Waste Rock Storage Area	TrStnUnp	3-03-024-08	F	268,200	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0.16	0.16	0.08	0.08	0.01	0.01
MN12	Bulldozer Use	Bldzrs	3-05-020-99	F	152	hrs	2.82	0.43	0.30	lb/hr	None	0%	0.21	0.21	0.03	0.03	0.02	0.02
MN13a	Water Truck Use (Inside the Pit)	WtrTrksHD	3-05-020-99	F	230	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTI	90%	1.97	0.20	0.51	0.05	0.05	0.005
MN13b	Water Truck Use (Outside the Pit)	WtrTrksHD	3-05-020-99	F	240	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTO	90%	2.04	0.20	0.53	0.05	0.05	0.005
MN14	Grader Use	GradersY10	3-05-020-99	F	238	VMT	2.05	0.71	0.06	lb/VMT	None	0%	0.24	0.24	0.09	0.09	0.008	0.008
MN15a	Support Vehicle Use on Unpaved Roads (Inside the Pit)	SupVehUY10D	3-03-999-99	F	746	VMT	8.78	2.26	0.23	lb/VMT	HaulRdUI	90%	3.27	0.33	0.84	0.08	0.08	0.008
MN15b	Support Vehicle Use on Unpaved Roads (Outside the Pit)	SupVehUY10D	3-03-999-99	F	746	VMT	8.78	2.26	0.23	lb/VMT	HaulRdUO	90%	3.27	0.33	0.84	0.08	0.08	0.008
M16a	Support Vehicle Use on the Paved Entrance Road (within the process area boundary)	SupVehPEY10D	3-03-999-99	F	302	VMT	0.05	0.01	0.002	lb/VMT	None	0%	0.008	0.008	0.002	0.002	0.0004	0.0004
M16b	Support Vehicle Use on the Paved Entrance Road (outside of the process area boundary)	SupVehPEY10D	3-03-999-99	F	1,310	VMT	0.05	0.01	0.002	lb/VMT	None	0%	0.03	0.03	0.007	0.007	0.002	0.002
M16c	Support Vehicle Use on Paved Industrial Roads	SupVehPIY10D	3-03-999-99	F	610	VMT	1.01	0.20	0.05	lb/VMT	None	0%	0.31	0.31	0.06	0.06	0.02	0.02
Primary Crushing, Conveying, Coarse Ore Storage, and Reclaim Conveying																		
PC01	Wind Erosion of the Run of Mine Stockpile	WindROM	3-03-888-01	F	26	acres	0.21	0.11	0.02	ton/acre-yr	None	0%	0.01	0.01	0.007	0.007	0.001	0.001
PC02	Unloading to Primary Crusher Dump Hopper (H-CDp) from Haul Trucks or Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	166,800	tons	0.001	0.0006	0.00009	lb/ton	WSpry	82.5%	0.10	0.02	0.05	0.008	0.007	0.001
PC03	Primary Crusher (PCr)	CrushP	3-03-024-05	NF	166,800	tons	0.02	0.009	0.002	lb/ton	CADC	100%	1.67	0	0.75	0	0.14	0
PC04	Primary Crusher (PCr) to Crusher Discharge Hopper (H-CDs)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
PC05	Crusher Discharge Hopper (H-CDs) to Crusher Discharge Feeder (F-CD)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	0.01	0	0.006	0	0.0009	0
PC06	Crusher Discharge Feeder (F-CD) to Stockpile Feed Conveyor No. 1 (CV-SF1)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	0.01	0	0.006	0	0.0009	0

Table H.43 Maximum Daily Particulate Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 10	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 10		PM_{10} Emissions (tpd) - Year 10		$PM_{2.5}$ Emissions (tpd) - Year 10	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
PC07	Stockpile Feed Conveyor No. 1 (CV-SF1) to Stockpile Feed Conveyor No. 2 (CV-SF2)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SFCDC	100%	0.01	0	0.006	0	0.0009	0
PC08	Stockpile Feed Conveyor No. 2 (CV-SF2) to Covered Coarse Ore Stockpile	TrStnPrt	3-03-024-08	F	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	0.01	0	0.006	0	0.0009	0
PC09	Wind Erosion of the Coarse Ore Stockpile	WindCvd	3-03-888-01	F	5	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
PC10	Coarse Ore Stockpile to Reclaim Feeders (F-R1/R4)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	UndrGrd [a]	100%	0	0	0	0	0	0
PC11	Reclaim Feeders (F-R1/R4) to Reclaim Conveyor (CV-R)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	0.01	0	0.006	0	0.0009	0
PC12	Reclaim Conveyor (CV-R) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.01	0	0.006	0	0.0009	0
PC13	Pebble Conveyor No. 3 (CV-Pb3) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.003	0	0.002	0	0.0002	0
PC14	SAG Mill Feed Conveyor (CV-SMF) to SAG Mill (M-SAG)	TrStnPrt	3-03-024-08	NF	209,308	tons	0.0002	0.00007	0.00001	lb/ton	Water [a]	100%	0	0	0	0	0	0
Milling																		
M01	SAG Mill (M-SAG)	CrushS	3-03-024-06	NF	209,432	tons	0.05	0.02	0.004	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M02	SAG Mill (M-SAG) to Trommel Screen (Sn-T)	TrStnPrt	3-03-024-08	NF	209,432	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M03	Trommel Screen (Sn-T)	Screen	3-05-020-02	NF	209,432	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M04	Trommel Screen (Sn-T) to Pebble Conveyor No. 1 (CV-Pb1)	TrStnPrt	3-03-024-08	NF	44,426	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M05	Pebble Conveyor No. 1 (CV-Pb1) to Pebble Wash Screen (Sn-PbW)	TrStnPrt	3-03-024-08	NF	44,426	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M06	Pebble Wash Screen (Sn-PbW)	Screen	3-05-020-02	NF	44,426	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M07	Pebble Wash Screen (Sn-PbW) to Pebble Conveyor No. 2	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M08	Pebble Conveyor No. 2 (CV-Pb2) to SAG Oversize Surge Bin (B-SAGOS)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.003	0	0.002	0	0.0002	0
M09	SAG Oversize Surge Bin (B-SAGOS) to Pebble Crusher Feeder (F-PbC)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.003	0	0.002	0	0.0002	0
M10	Pebble Crusher Feeder (F-PbC) to Pebble Crusher (PbC)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M11	Pebble Crusher (PbC)	CrushT	3-03-024-07	NF	42,508	tons	0.06	0.02	0.004	lb/ton	PCADC	100%	1.28	0	0.43	0	0.08	0
M12	Pebble Crusher (PbC) to Pebble Conveyor No. 3 (CV-Pb3)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.003	0	0.002	0	0.0002	0
Copper Concentrate Dewatering and Stacking																		
CCD01	Copper Concentrate Filters (Ft-CC1/CC4) to Copper Concentrate Conveyor (CV-CC)	TrCuCncPrt	3-03-024-08	NF	3,312	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
CCD02	Copper Concentrate Conveyor (CV-CC) to Copper Concentrate Loadout Stockpile	TrCuCncPrt	3-03-024-08	F	3,312	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.00007	0	0.00003	0	0.000005	0
CCD03	Wind Erosion of Copper Concentrate Loadout Stockpile	WindCvd	3-03-888-01	F	1.17	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
CCD04	Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loaders	TrCuCncPrt	3-03-024-08	F	3,312	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.00007	0	0.00003	0	0.000005	0
Molybdenum Dewatering and Packaging																		
MD01	Molybdenum Concentrate Filter (Ft-MC) to Molybdenum Concentrate Dryer (D-MC)	TrMlyCncPrt	3-03-024-08	NF	45.6	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD02	Molybdenum Concentrate Dryer	MolyDry	3-03-024-11	NF	45.6	tons	19.70	12.00	5.91	lb/ton	MS/EP	100%	0.45	0	0.27	0	0.13	0
MD03	Molybdenum Concentrate Dryer (D-MC) to Molybdenum Concentrate Bin (B-MC)	DTrMlyCncPrt	3-03-024-08	NF	45.6	tons	0.00004	0.00002	0.000003	lb/ton	MDC	100%	0.000001	0	0.0000005	0	0.00000007	0
MD04	Molybdenum Concentrate Bin (B-MC) to Molybdenum Concentrate Hopper (H-MC)	DTrMlyCnc	3-03-024-08	NF	45.6	tons	0.0003	0.0002	0.00002	lb/ton	None	0%	0.000008	0.000008	0.000004	0.000004	0.0000005	0.0000005

Table H.43 Maximum Daily Particulate Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 10	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 10		PM_{10} Emissions (tpd) - Year 10		$PM_{2.5}$ Emissions (tpd) - Year 10	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
MD05	Molybdenum Concentrate Hopper (H-MC) to Molybdenum Concentrate Conveyor (CV-MC)	DTrMlyCncPrt	3-03-024-08	NF	45.6	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD06	Molybdenum Concentrate Conveyor (CV-MC) to Molybdenum Packaging and Weigh System (MPS)	DTrMlyCnc	3-03-024-08	NF	45.6	tons	0.0003	0.0002	0.00002	lb/ton	MDC	100%	0.000008	0	0.000004	0	0.0000005	0
Tailings Dewatering and Placement																		
TDS01	Tailings Filters (Ft-T1/T14) to Tailings Belt Feeders (F-T1/T14)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS02	Tailings Belt Feeders (F-T1/T14) to Fixed Tailings Conveyor No. 1 (CV-F1)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS03	Fixed Tailings Conveyor No. 1 (CV-F1) to Fixed Tailings Conveyor No. 2 (CV-F2)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS04	Fixed Tailings Conveyor No. 2 (CV-F2) to Fixed Tailings Conveyor No. 3 (CV-F3)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.003	0.003	0.001	0.001	0.0002	0.0002
TDS05	Fixed Tailings Conveyor No. 3 (CV-F3) to Relocatable Conveyor (CV-R1)	FiltTailPrt	3-03-024-08	F	257,328	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.003	0.003	0.001	0.001	0.0002	0.0002
TDS06	Relocatable Conveyor (CV-R1) to Shiftable Conveyor (CV-S1)	FiltTailPrt	3-03-024-08	F	257,328	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.003	0.003	0.001	0.001	0.0002	0.0002
TDS07	Shiftable Conveyor (CV-S1) to Belt Wagon Conveyor (CV-BW1)	FiltTail	3-03-024-08	F	257,328	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	0.02	0.02	0.01	0.01	0.002	0.002
TDS08	Belt Wagon Conveyor (CV-BW1) to Spreader Crawler Mounted Conveyor (CV-SP1)	FiltTail	3-03-024-08	F	257,328	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	0.02	0.02	0.01	0.01	0.002	0.002
TDS09	Spreader Crawler Mounted Conveyor (CV-SP1) to Tailings Storage	FiltTail	3-03-024-08	F	257,328	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	0.02	0.02	0.01	0.01	0.002	0.002
TDS10	Wind Erosion of Tailings Storage	TailStrg	3-03-888-01	F	1,500	acres	0.02	0.01	0.002	ton/acre-yr	None	0%	0.08	0.08	0.04	0.04	0.006	0.006
Fuel Burning Equipment																		
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	24	hours	3.30	2.30	1.54	lb/1000 gal	None	0%	0.002	0.002	0.001	0.001	0.0008	0.0008
					6.0	MMBtu/hr												
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.005	0.005	0.005	0.005	0.005	0.005
					1,000	kW												
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.005	0.005	0.005	0.005	0.005	0.005
					1,000	kW												
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.004	0.004	0.004	0.004	0.004	0.004
					750	kW												
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.004	0.004	0.004	0.004	0.004	0.004
					750	kW												
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	24	hours	0.40	0.40	0.40	g/kW-hr	None	0%	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
					50	kW												
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.002	0.002	0.002	0.002	0.002	0.002
					400	hp												
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.002	0.002	0.002	0.002	0.002	0.002
					400	hp												

Table H.43 Maximum Daily Particulate Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 10	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 10		PM_{10} Emissions (tpd) - Year 10		$PM_{2.5}$ Emissions (tpd) - Year 10	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Miscellaneous Sources																		
MS01	Transfer of Lime to the Lime Storage Bin (B-L)	LimeLd	3-05-016-26	NF	186.41	tons	0.61	0.29	0.04	lb/ton	BPLSV [a]	90%	0.006	0.006	0.003	0.003	0.0004	0.0004
MS02	Lime Storage Bin (B-L) to Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2)	ReagTr	3-03-024-04	NF	186.41	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS03	Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2) to Lime Slakers 1 and 2 (T-LS1/2)	ReagTr	3-03-024-04	NF	186.41	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS04	Lime Slaking in Lime Slakers 1 and 2 (T-LS1/2)	LimeSlk	3-05-016-09	NF	186.41	tons	8.00	8.00	8.00	lb/ton	LSS	99%	0.75	0.007	0.75	0.007	0.75	0.007
MS05	Transfer of Sodium Metasilicate to the Sodium Metasilicate Storage Bin (B-SM)	ReagTr	3-03-024-04	NF	9.86	tons	0.008	0.004	0.0006	lb/ton	SMSV [a]	90%	0.000004	0.000004	0.000002	0.000002	0.0000003	0.0000003
MS06	Transfer of Flocculant from Supersacks to Flocculant Storage Bins (B-F1/F2)	ReagTr	3-03-024-04	NF	3.62	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.00001	0.00001	0.000007	0.000007	0.000001	0.000001
MS07	Transfer of Guar from Bags to Guar Feeder (F-Gu)	ReagTr	3-03-024-04	NF	0.49	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.000002	0.000002	0.000001	0.000001	0.0000001	0.0000001
MS08	Transfer of Granular Cobalt Sulfate from Bags to Cobalt Sulfate Feeder (F-CoS)	ReagTr	3-03-024-04	NF	0.02	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.00000008	0.00000008	0.00000004	0.00000004	0.000000006	0.000000006
Particulate Matter Pollution Control Equipment with Emission Limits																		
PCL01	Crushing Area Dust Collector (PC-CADC)	CADC	none	NF	24	hours	1.42	0.64	0.12	lb/hr	--	--	--	0.02	--	0.008	--	0.001
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	SARTDC	none	NF	24	hours	3.11	1.47	0.22	lb/hr	--	--	--	0.04	--	0.02	--	0.003
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	SFCDC	none	NF	24	hours	0.76	0.36	0.05	lb/hr	--	--	--	0.01	--	0.004	--	0.001
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	PCADC	none	NF	24	hours	0.96	0.32	0.06	lb/hr	--	--	--	0.01	--	0.004	--	0.0007
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	CCDC	none	NF	24	hours	3.76	1.78	0.27	lb/hr	--	--	--	0.05	--	0.02	--	0.003
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	CCDC	none	NF	24	hours	3.76	1.78	0.27	lb/hr	--	--	--	0.05	--	0.02	--	0.003
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	MS/EP	none	NF	24	hours	0.015	0.014	0.013	lb/hr	--	--	--	0.0002	--	0.0002	--	0.0002
PCL08	Molybdenum Dust Collector (PC-MDC)	MDC	none	NF	24	hours	0.112	0.053	0.008	lb/hr	--	--	--	0.001	--	0.0006	--	0.0001
PCL09	Laboratory Dust Collector 1 (PC-L1)	LDC	none	NF	11,937,850	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.007	--	0.004	--	0.002
PCL10	Laboratory Dust Collector 2 (PC-L2)	LDC	none	NF	11,937,850	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.007	--	0.004	--	0.002
PCL11	Laboratory Dust Collector 3 (PC-L3)	LDC	none	NF	11,937,850	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.007	--	0.004	--	0.002
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	SFDC	none	NF	24	hours	0.97	0.46	0.07	lb/hr	--	--	--	0.01	--	0.006	--	0.0008
Total Non-Fugitive Emissions (excluding tailpipe emissions):													**4.25**	**0.24**	**2.26**	**0.13**	**1.13**	**0.05**
Total Fugitive Emissions (excluding tailpipe emissions):													**89.62**	**10.35**	**23.19**	**2.80**	**2.36**	**0.32**
Total Emissions (excluding tailpipe emissions):													**93.87**	**10.59**	**25.45**	**2.93**	**3.49**	**0.37**
Tailpipe Emissions (see Tables H.48-H.50):													**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**

[a] The control efficiency for this emission unit is inherent to the process. Therefore, the control efficiency is applied to both uncontrolled and controlled emissions.

Table H.44 Maximum Hourly Particulate Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 10	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (lb/hr) - Year 10		PM_{10} Emissions (lb/hr) - Year 10		$PM_{2.5}$ Emissions (lb/hr) - Year 10	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Mining																		
MN01	Drilling	Drilling	3-05-020-10	F	80	holes	1.30	0.43	0.08	lb/hole	None	0%	104.00	104.00	34.67	34.67	6.42	6.42
MN02	Blasting	Blast	3-05-020-09	F	1.00	blasts	328.26	170.69	9.85	lb/blast	None	0%	328.26	328.26	170.69	170.69	9.85	9.85
MN03	Loading Concentrate Ore	Loading	3-03-024-08	F	3,750	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	2.63	2.63	1.24	1.24	0.19	0.19
MN04	Loading Leach Ore	Loading	3-03-024-08	F	0	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0	0	0	0	0	0
MN05	Loading Waste Rock	Loading	3-03-024-08	F	11,175	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	7.84	7.84	3.71	3.71	0.56	0.56
MN06a	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Inside the Pit)	HaulingHD	3-05-020-11	F	61	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	1291.79	129.18	331.93	33.19	33.19	3.32
MN06b	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Outside the Pit)	HaulingHD	3-05-020-11	F	19	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	408.62	40.86	105.00	10.50	10.50	1.05
MN07a	Hauling Leach Ore to Leach Pad (Inside the Pit)	HaulingHD	3-05-020-11	F	0	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	0	0	0	0	0	0
MN07b	Hauling Leach Ore to Leach Pad (Outside the Pit)	HaulingHD	3-05-020-11	F	0	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	0	0	0	0	0	0
MN08a	Hauling Waste Rock to Waste Rock Storage Area (Inside the Pit)	HaulingHD	3-05-020-11	F	88	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	1,870.62	187.06	480.66	48.07	48.07	4.81
MN08b	Hauling Waste Rock to Waste Rock Storage Area (Outside the Pit)	HaulingHD	3-05-020-11	F	136	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	2,880.03	288.00	740.03	74.00	74.00	7.40
MN09	Unloading Concentrate Ore to Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	3,750	tons	0.001	0.0006	0.00009	lb/ton	None	0%	4.46	4.46	2.11	2.11	0.32	0.32
MN10	Unloading Leach Ore to Leach Pad	TrStnUnp	3-03-024-08	F	0	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0	0	0	0	0	0
MN11	Unloading Waste Rock to Waste Rock Storage Area	TrStnUnp	3-03-024-08	F	11,175	tons	0.001	0.0006	0.00009	lb/ton	None	0%	13.28	13.28	6.28	6.28	0.95	0.95
MN12	Bulldozer Use	Bldzrs	3-05-020-99	F	6	hrs	2.82	0.43	0.30	lb/hr	None	0%	17.84	17.84	2.69	2.69	1.87	1.87
MN13a	Water Truck Use (Inside the Pit)	WtrTrksHD	3-05-020-99	F	10	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTI	90%	163.87	16.39	42.11	4.21	4.21	0.42
MN13b	Water Truck Use (Outside the Pit)	WtrTrksHD	3-05-020-99	F	10	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTO	90%	170.41	17.04	43.79	4.38	4.38	0.44
MN14	Grader Use	GradersY10	3-05-020-99	F	10	VMT	2.05	0.71	0.06	lb/VMT	None	0%	20.40	20.40	7.10	7.10	0.63	0.63
MN15a	Support Vehicle Use on Unpaved Roads (Inside the Pit)	SupVehUY10H	3-03-999-99	F	31	VMT	8.89	2.29	0.23	lb/VMT	HaulRdUI	90%	279.67	27.97	71.86	7.19	7.19	0.72
MN15b	Support Vehicle Use on Unpaved Roads (Outside the Pit)	SupVehUY10H	3-03-999-99	F	31	VMT	8.89	2.29	0.23	lb/VMT	HaulRdUO	90%	279.67	27.97	71.86	7.19	7.19	0.72
M16a	Support Vehicle Use on the Paved Entrance Road (within the process area boundary)	SupVehPEY10H	3-03-999-99	F	25	VMT	0.05	0.01	0.003	lb/VMT	None	0%	1.35	1.35	0.27	0.27	0.07	0.07
M16b	Support Vehicle Use on the Paved Entrance Road (outside of the process area boundary)	SupVehPEY10H	3-03-999-99	F	110	VMT	0.05	0.01	0.003	lb/VMT	None	0%	5.87	5.87	1.17	1.17	0.29	0.29
M16c	Support Vehicle Use on Paved Industrial Roads	SupVehPIY10H	3-03-999-99	F	39	VMT	1.23	0.25	0.06	lb/VMT	None	0%	47.33	47.33	9.47	9.47	2.32	2.32
Primary Crushing, Conveying, Coarse Ore Storage, and Reclaim Conveying																		
PC01	Wind Erosion of the Run of Mine Stockpile	WindROM	3-03-888-01	F	26	acres	0.21	0.11	0.02	ton/acre-yr	None	0%	1.24	1.24	0.62	0.62	0.09	0.09
PC02	Unloading to Primary Crusher Dump Hopper (H-CDp) from Haul Trucks or Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	6,950	tons	0.001	0.0006	0.00009	lb/ton	WSpry	82.5%	8.26	1.45	3.91	0.68	0.59	0.10
PC03	Primary Crusher (PCr)	CrushP	3-03-024-05	NF	6,950	tons	0.02	0.009	0.002	lb/ton	CADC	100%	139.00	0	62.55	0	11.58	0
PC04	Primary Crusher (PCr) to Crusher Discharge Hopper (H-CDs)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
PC05	Crusher Discharge Hopper (H-CDs) to Crusher Discharge Feeder (F-CD)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	1.08	0	0.51	0	0.08	0
PC06	Crusher Discharge Feeder (F-CD) to Stockpile Feed Conveyor No. 1 (CV-SF1)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	1.08	0	0.51	0	0.08	0

Table H.44 Maximum Hourly Particulate Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 10	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (lb/hr) - Year 10		PM_{10} Emissions (lb/hr) - Year 10		$PM_{2.5}$ Emissions (lb/hr) - Year 10	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
PC07	Stockpile Feed Conveyor No. 1 (CV-SF1) to Stockpile Feed Conveyor No. 2 (CV-SF2)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SFCDC	100%	1.08	0	0.51	0	0.08	0
PC08	Stockpile Feed Conveyor No. 2 (CV-SF2) to Covered Coarse Ore Stockpile	TrStnPrt	3-03-024-08	F	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	1.08	0	0.51	0	0.08	0
PC09	Wind Erosion of the Coarse Ore Stockpile	WindCvd	3-03-888-01	F	5	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
PC10	Coarse Ore Stockpile to Reclaim Feeders (F-R1/R4)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	UndrGrd [a]	100%	0	0	0	0	0	0
PC11	Reclaim Feeders (F-R1/R4) to Reclaim Conveyor (CV-R)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	1.08	0	0.51	0	0.08	0
PC12	Reclaim Conveyor (CV-R) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	1.08	0	0.51	0	0.08	0
PC13	Pebble Conveyor No. 3 (CV-Pb3) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.28	0	0.13	0	0.02	0
PC14	SAG Mill Feed Conveyor (CV-SMF) to SAG Mill (M-SAG)	TrStnPrt	3-03-024-08	NF	8,721	tons	0.0002	0.00007	0.00001	lb/ton	Water [a]	100%	0	0	0	0	0	0
Milling																		
M01	SAG Mill (M-SAG)	CrushS	3-03-024-06	NF	8,726	tons	0.05	0.02	0.004	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M02	SAG Mill (M-SAG) to Trommel Screen (Sn-T)	TrStnPrt	3-03-024-08	NF	8,726	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M03	Trommel Screen (Sn-T)	Screen	3-05-020-02	NF	8,726	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M04	Trommel Screen (Sn-T) to Pebble Conveyor No. 1 (CV-Pb1)	TrStnPrt	3-03-024-08	NF	1,851	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M05	Pebble Conveyor No. 1 (CV-Pb1) to Pebble Wash Screen (Sn-PbW)	TrStnPrt	3-03-024-08	NF	1,851	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M06	Pebble Wash Screen (Sn-PbW)	Screen	3-05-020-02	NF	1,851	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M07	Pebble Wash Screen (Sn-PbW) to Pebble Conveyor No. 2	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M08	Pebble Conveyor No. 2 (CV-Pb2) to SAG Oversize Surge Bin (B-SAGOS)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.28	0	0.13	0	0.02	0
M09	SAG Oversize Surge Bin (B-SAGOS) to Pebble Crusher Feeder (F-PbC)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.28	0	0.13	0	0.02	0
M10	Pebble Crusher Feeder (F-PbC) to Pebble Crusher (PbC)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M11	Pebble Crusher (PbC)	CrushT	3-03-024-07	NF	1,771	tons	0.06	0.02	0.00	lb/ton	PCADC	100%	106.27	0	35.42	0	6.56	0
M12	Pebble Crusher (PbC) to Pebble Conveyor No. 3 (CV-Pb3)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.28	0	0.13	0	0.02	0
Copper Concentrate Dewatering and Stacking																		
CCD01	Copper Concentrate Filters (Ft-CC1/CC4) to Copper Concentrate Conveyor (CV-CC)	TrCuCncPrt	3-03-024-08	NF	138	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
CCD02	Copper Concentrate Conveyor (CV-CC) to Copper Concentrate Loadout Stockpile	TrCuCncPrt	3-03-024-08	F	138	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.006	0	0.003	0	0.0004	0
CCD03	Wind Erosion of Copper Concentrate Loadout Stockpile	WindCvd	3-03-888-01	F	1.17	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
CCD04	Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loaders	TrCuCncPrt	3-03-024-08	F	138	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.006	0	0.003	0	0.0004	0
Molybdenum Dewatering and Packaging																		
MD01	Molybdenum Concentrate Filter (Ft-MC) to Molybdenum Concentrate Dryer (D-MC)	TrMlyCncPrt	3-03-024-08	NF	1.9	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD02	Molybdenum Concentrate Dryer	MolyDry	3-03-024-11	NF	1.9	tons	19.70	12.00	5.91	lb/ton	MS/EP	100%	37.43	0	22.80	0	11.23	0
MD03	Molybdenum Concentrate Dryer (D-MC) to Molybdenum Concentrate Bin (B-MC)	DTrMlyCncPrt	3-03-024-08	NF	1.9	tons	0.00004	0.00002	0.000003	lb/ton	MDC	100%	0.00008	0	0.00004	0	0.000006	0
MD04	Molybdenum Concentrate Bin (B-MC) to Molybdenum Concentrate Hopper (H-MC)	DTrMlyCnc	3-03-024-08	NF	1.9	tons	0.0003	0.0002	0.00002	lb/ton	None	0%	0.0006	0.0006	0.0003	0.0003	0.00004	0.00004

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							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
MD05	Molybdenum Concentrate Hopper (H-MC) to Molybdenum Concentrate Conveyor (CV-MC)	DTrMlyCncPrt	3-03-024-08	NF	1.9	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD06	Molybdenum Concentrate Conveyor (CV-MC) to Molybdenum Packaging and Weigh System (MPS)	DTrMlyCnc	3-03-024-08	NF	1.9	tons	0.0003	0.0002	0.00002	lb/ton	MDC	100%	0.0006	0	0.0003	0	0.00004	0
Tailings Dewatering and Placement																		
TDS01	Tailings Filters (Ft-T1/T14) to Tailings Belt Feeders (F-T1/T14)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS02	Tailings Belt Feeders (F-T1/T14) to Fixed Tailings Conveyor No. 1 (CV-F1)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS03	Fixed Tailings Conveyor No. 1 (CV-F1) to Fixed Tailings Conveyor No. 2 (CV-F2)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS04	Fixed Tailings Conveyor No. 2 (CV-F2) to Fixed Tailings Conveyor No. 3 (CV-F3)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.26	0.26	0.12	0.12	0.02	0.02
TDS05	Fixed Tailings Conveyor No. 3 (CV-F3) to Relocatable Conveyor (CV-R1)	FiltTailPrt	3-03-024-08	F	10,722	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.26	0.26	0.12	0.12	0.02	0.02
TDS06	Relocatable Conveyor (CV-R1) to Shiftable Conveyor (CV-S1)	FiltTailPrt	3-03-024-08	F	10,722	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.26	0.26	0.12	0.12	0.02	0.02
TDS07	Shiftable Conveyor (CV-S1) to Belt Wagon Conveyor (CV-BW1)	FiltTail	3-03-024-08	F	10,722	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	2.00	2.00	0.95	0.95	0.14	0.14
TDS08	Belt Wagon Conveyor (CV-BW1) to Spreader Crawler Mounted Conveyor (CV-SP1)	FiltTail	3-03-024-08	F	10,722	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	2.00	2.00	0.95	0.95	0.14	0.14
TDS09	Spreader Crawler Mounted Conveyor (CV-SP1) to Tailings Storage	FiltTail	3-03-024-08	F	10,722	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	2.00	2.00	0.95	0.95	0.14	0.14
TDS10	Wind Erosion of Tailings Storage	TailStrg	3-03-888-01	F	1,500	acres	0.02	0.01	0.002	ton/acre-yr	None	0%	6.90	6.90	3.45	3.45	0.52	0.52
Fuel Burning Equipment																		
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	1	hours	3.30	2.30	1.54	lb/1000 gal	None	0%	0.14	0.14	0.10	0.10	0.07	0.07
					6.0	MMBtu/hr												
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.44	0.44	0.44	0.44	0.44	0.44
					1,000	kW												
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.44	0.44	0.44	0.44	0.44	0.44
					1,000	kW												
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.33	0.33	0.33	0.33	0.33	0.33
					750	kW												
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.33	0.33	0.33	0.33	0.33	0.33
					750	kW												
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	1	hours	0.40	0.40	0.40	g/kW-hr	None	0%	0.04	0.04	0.04	0.04	0.04	0.04
					50	kW												
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.13	0.13	0.13	0.13	0.13	0.13
					400	hp												
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.13	0.13	0.13	0.13	0.13	0.13
					400	hp												

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							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Miscellaneous Sources																		
MS01	Transfer of Lime to the Lime Storage Bin (B-L)	LimeLd	3-05-016-26	NF	7.77	tons	0.61	0.29	0.04	lb/ton	BPLSV [a]	90%	0.47	0.47	0.22	0.22	0.03	0.03
MS02	Lime Storage Bin (B-L) to Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2)	ReagTr	3-03-024-04	NF	7.77	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS03	Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2) to Lime Slakers 1 and 2 (T-LS1/2)	ReagTr	3-03-024-04	NF	7.77	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS04	Lime Slaking in Lime Slakers 1 and 2 (T-LS1/2)	LimeSlk	3-05-016-09	NF	7.77	tons	8.00	8.00	8.00	lb/ton	LSS	99%	62.14	0.62	62.14	0.62	62.14	0.62
MS05	Transfer of Sodium Metasilicate to the Sodium Metasilicate Storage Bin (B-SM)	ReagTr	3-03-024-04	NF	0.41	tons	0.008	0.004	0.0006	lb/ton	SMSV [a]	90%	0.0003	0.0003	0.0002	0.0002	0.00002	0.00002
MS06	Transfer of Flocculant from Supersacks to Flocculant Storage Bins (B-F1/F2)	ReagTr	3-03-024-04	NF	0.15	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.001	0.001	0.0006	0.0006	0.00009	0.00009
MS07	Transfer of Guar from Bags to Guar Feeder (F-Gu)	ReagTr	3-03-024-04	NF	0.02	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.0002	0.0002	0.00008	0.00008	0.00001	0.00001
MS08	Transfer of Granular Cobalt Sulfate from Bags to Cobalt Sulfate Feeder (F-CoS)	ReagTr	3-03-024-04	NF	0.0008	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.000007	0.000007	0.000003	0.000003	0.0000005	0.0000005
Particulate Matter Pollution Control Equipment with Emission Limits																		
PCL01	Crushing Area Dust Collector (PC-CADC)	CADC	none	NF	1	hours	1.42	0.64	0.12	lb/hr	--	--	--	1.42	--	0.64	--	0.12
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	SARTDC	none	NF	1	hours	3.11	1.47	0.22	lb/hr	--	--	--	3.11	--	1.47	--	0.22
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	SFCDC	none	NF	1	hours	0.76	0.36	0.05	lb/hr	--	--	--	0.76	--	0.36	--	0.05
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	PCADC	none	NF	1	hours	0.96	0.32	0.06	lb/hr	--	--	--	0.96	--	0.32	--	0.06
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	CCDC	none	NF	1	hours	3.76	1.78	0.27	lb/hr	--	--	--	3.76	--	1.78	--	0.27
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	CCDC	none	NF	1	hours	3.76	1.78	0.27	lb/hr	--	--	--	3.76	--	1.78	--	0.27
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	MS/EP	none	NF	1	hours	0.015	0.014	0.013	lb/hr	--	--	--	0.02	--	0.01	--	0.01
PCL08	Molybdenum Dust Collector (PC-MDC)	MDC	none	NF	1	hours	0.112	0.053	0.008	lb/hr	--	--	--	0.11	--	0.05	--	0.008
PCL09	Laboratory Dust Collector 1 (PC-L1)	LDC	none	NF	497,410	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.58	--	0.36	--	0.17
PCL10	Laboratory Dust Collector 2 (PC-L2)	LDC	none	NF	497,410	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.58	--	0.36	--	0.17
PCL11	Laboratory Dust Collector 3 (PC-L3)	LDC	none	NF	497,410	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.58	--	0.36	--	0.17
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	SFDC	none	NF	1	hours	0.97	0.46	0.07	lb/hr	--	--	--	0.97	--	0.46	--	0.07
Total Non-Fugitive Emissions (excluding tailpipe emissions):													**354.09**	**19.98**	**188.29**	**10.86**	**93.95**	**4.20**
Total Fugitive Emissions (excluding tailpipe emissions):													**7,921.97**	**1,303.85**	**2,138.22**	**435.97**	**213.94**	**43.53**
Total Emissions (excluding tailpipe emissions):													**8,276.06**	**1,323.84**	**2,326.51**	**446.83**	**307.89**	**47.73**
Tailpipe Emissions (see Tables H.48-H.50):													**8.59**	**8.59**	**8.59**	**8.59**	**8.59**	**8.59**

[a] The control efficiency for this emission unit is inherent to the process. Therefore, the control efficiency is applied to both uncontrolled and controlled emissions.

Table H.45 Annual Gaseous Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 10	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 10								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
Mining																										
MN02	Blasting	Blast	3-05-020-09	F	17,992	tons ANFO	67.00	17.00	2.00	0	0	566	0.02	0.005	--	--	lb/tons ANFO	602.73	152.93	17.99	0	0	5,095.78	0.21	0.04	--
Solvent Extraction and Electrowinning																										
SXE01	Solvent Extraction	SX	4-90-001-99	F	8,760	hours	0	0	0	9.43E-05	0	0	0	0	Benzene	3.37E-07	lb/hr-ft^2	0	0	0	3.77	0	0	0	0	1.35E-02
	4 Primary Mix Tanks (7.75' D x 9.75' H each)	4 @ 47.2 = 188.7	ft^2		9,132.9	ft^2	Total Surface Area of Solvent Extraction								Toluene	4.82E-06	lb/hr-ft^2									1.93E-01
	4 Secondary Mix Tanks (9.5' D x 9.75' H each)	4 @ 70.9 = 283.5	ft^2												Ethylbenzene	2.05E-05	lb/hr-ft^2									8.21E-01
	3 Tertiary Mix Tanks (9.5' D x 9.75' H each)	3 @ 70.9 = 212.6	ft^2												Xylenes	2.80E-05	lb/hr-ft^2									1.12E+00
	4 Extraction Settlers (64' L x 33' W x 3.33' H each)	4 @ 2,112 = 8,448	ft^2												Others (including Hexane)	2.94E-05	lb/hr-ft^2									1.18E+00
SXE02	Electrowinning Commercial Cells (EWCC)	EW	none	NF	8,760	hours	0	0	0	0	1.57E-04	0	0	0	Cobalt Compounds	2.36E-08	lb/hr-ft^2	0	0	0	0	0.02	0	0	0	2.72E-06
	Controlled by Cell Ventilation Scrubbers (PC-EWCVS1/EWCVS3)				2,640	ft^2																				
					99	Control Efficiency (%)																				
Fuel Burning Equipment																										
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	8,760	hours	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	POM	3.30E-03	lb/1000 gal	0.96	3.84	0.04	0.04	0	4,453.51	0.18	0.04	6.33E-04
					6.0	MMBtu/hr									Formaldehyde	6.10E-02	lb/1000 gal									1.17E-02
															Arsenic	4.00	lb/10^{12} Btu									1.05E-04
															Beryllium	3.00	lb/10^{12} Btu									7.88E-05
															Cadmium	3.00	lb/10^{12} Btu									7.88E-05
															Chromium	3.00	lb/10^{12} Btu									7.88E-05
															Lead	9.00	lb/10^{12} Btu									2.37E-04
															Mercury	3.00	lb/10^{12} Btu									7.88E-05
															Manganese	6.00	lb/10^{12} Btu									1.58E-04
															Nickel	3.00	lb/10^{12} Btu									7.88E-05
															Selenium	15.00	lb/10^{12} Btu									3.94E-04
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.93	3.31	0.004	0.22	0	382.65	0.02	0.003	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									1.82E-03
															Toluene	2.81E-04	lb/MMBtu									6.59E-04
															Xylenes	1.93E-04	lb/MMBtu									4.53E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.85E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									5.91E-05
															Acrolein	7.88E-06	lb/MMBtu									1.85E-05
															Naphthalene	1.30E-04	lb/MMBtu									3.05E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									2.17E-05
															Acenaphthene	4.68E-06	lb/MMBtu									1.10E-05
															Fluorene	1.28E-05	lb/MMBtu									3.00E-05
															Phenanthrene	4.08E-05	lb/MMBtu									9.57E-05
															Anthracene	1.23E-06	lb/MMBtu									2.89E-06
															Fluoranthene	4.03E-06	lb/MMBtu									9.46E-06
															Pyrene	3.71E-06	lb/MMBtu									8.71E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.46E-06
															Chrysene	1.53E-06	lb/MMBtu									3.59E-06

Table H.45 Annual Gaseous Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 10	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 10								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									2.60E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									5.12E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									6.03E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									9.72E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									8.12E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									1.30E-06
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.93	3.31	0.004	0.22	0	382.65	0.02	0.003	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									1.82E-03
															Toluene	2.81E-04	lb/MMBtu									6.59E-04
															Xylenes	1.93E-04	lb/MMBtu									4.53E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.85E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									5.91E-05
															Acrolein	7.88E-06	lb/MMBtu									1.85E-05
															Naphthalene	1.30E-04	lb/MMBtu									3.05E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									2.17E-05
															Acenaphthene	4.68E-06	lb/MMBtu									1.10E-05
															Fluorene	1.28E-05	lb/MMBtu									3.00E-05
															Phenanthrene	4.08E-05	lb/MMBtu									9.57E-05
															Anthracene	1.23E-06	lb/MMBtu									2.89E-06
															Fluoranthene	4.03E-06	lb/MMBtu									9.46E-06
															Pyrene	3.71E-06	lb/MMBtu									8.71E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.46E-06
															Chrysene	1.53E-06	lb/MMBtu									3.59E-06
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									2.60E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									5.12E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									6.03E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									9.72E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									8.12E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									1.30E-06
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.45	2.48	0.003	0.17	0	286.99	0.01	0.002	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									1.37E-03
															Toluene	2.81E-04	lb/MMBtu									4.95E-04
															Xylenes	1.93E-04	lb/MMBtu									3.40E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.39E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									4.44E-05
															Acrolein	7.88E-06	lb/MMBtu									1.39E-05
															Naphthalene	1.30E-04	lb/MMBtu									2.29E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									1.62E-05
															Acenaphthene	4.68E-06	lb/MMBtu									8.24E-06
															Fluorene	1.28E-05	lb/MMBtu									2.25E-05

Table H.45 Annual Gaseous Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 10	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 10								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Phenanthrene	4.08E-05	lb/MMBtu									7.18E-05
															Anthracene	1.23E-06	lb/MMBtu									2.16E-06
															Fluoranthene	4.03E-06	lb/MMBtu									7.09E-06
															Pyrene	3.71E-06	lb/MMBtu									6.53E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.09E-06
															Chrysene	1.53E-06	lb/MMBtu									2.69E-06
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.95E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									3.84E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									4.52E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									7.29E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									6.09E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									9.79E-07
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.45	2.48	0.003	0.17	0	286.99	0.01	0.002	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									1.37E-03
															Toluene	2.81E-04	lb/MMBtu									4.95E-04
															Xylenes	1.93E-04	lb/MMBtu									3.40E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.39E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									4.44E-05
															Acrolein	7.88E-06	lb/MMBtu									1.39E-05
															Naphthalene	1.30E-04	lb/MMBtu									2.29E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									1.62E-05
															Acenaphthene	4.68E-06	lb/MMBtu									8.24E-06
															Fluorene	1.28E-05	lb/MMBtu									2.25E-05
															Phenanthrene	4.08E-05	lb/MMBtu									7.18E-05
															Anthracene	1.23E-06	lb/MMBtu									2.16E-06
															Fluoranthene	4.03E-06	lb/MMBtu									7.09E-06
															Pyrene	3.71E-06	lb/MMBtu									6.53E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.09E-06
															Chrysene	1.53E-06	lb/MMBtu									2.69E-06
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.95E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									3.84E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									4.52E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									7.29E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									6.09E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									9.79E-07
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	500	hours	5.00	4.43	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.14	0.12	0.0002	0.007	0	19.13	0.0008	0.0002	--
					50	kW									Benzene	9.33E-04	lb/MMBtu									1.09E-04
															Toluene	4.09E-04	lb/MMBtu									4.80E-05
															Xylenes	2.85E-04	lb/MMBtu									3.34E-05
															1,3-Butadiene	3.91E-05	lb/MMBtu									4.59E-06

Table H.45 Annual Gaseous Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 10	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 10								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Formaldehyde	1.18E-03	lb/MMBtu									1.38E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									9.00E-05
															Acrolein	9.25E-05	lb/MMBtu									1.09E-05
															Naphthalene	8.48E-05	lb/MMBtu									9.95E-06
															Acenaphthylene	5.06E-06	lb/MMBtu									5.94E-07
															Acenaphthene	1.42E-06	lb/MMBtu									1.67E-07
															Fluorene	2.92E-05	lb/MMBtu									3.43E-06
															Phenanthrene	2.94E-05	lb/MMBtu									3.45E-06
															Anthracene	1.87E-06	lb/MMBtu									2.19E-07
															Fluoranthene	7.61E-06	lb/MMBtu									8.93E-07
															Pyrene	4.78E-06	lb/MMBtu									5.61E-07
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									1.97E-07
															Chrysene	3.53E-07	lb/MMBtu									4.14E-08
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									1.16E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									1.82E-08
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									2.21E-08
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									4.40E-08
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									6.84E-08
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									5.74E-08
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	500	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.58	0.61	0.001	0.04	0	114.14	0.005	0.0009	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									6.53E-04
															Toluene	4.09E-04	lb/MMBtu									2.86E-04
															Xylenes	2.85E-04	lb/MMBtu									2.00E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									2.74E-05
															Formaldehyde	1.18E-03	lb/MMBtu									8.26E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									5.37E-04
															Acrolein	9.25E-05	lb/MMBtu									6.48E-05
															Naphthalene	8.48E-05	lb/MMBtu									5.94E-05
															Acenaphthylene	5.06E-06	lb/MMBtu									3.54E-06
															Acenaphthene	1.42E-06	lb/MMBtu									9.94E-07
															Fluorene	2.92E-05	lb/MMBtu									2.04E-05
															Phenanthrene	2.94E-05	lb/MMBtu									2.06E-05
															Anthracene	1.87E-06	lb/MMBtu									1.31E-06
															Fluoranthene	7.61E-06	lb/MMBtu									5.33E-06
															Pyrene	4.78E-06	lb/MMBtu									3.35E-06
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									1.18E-06
															Chrysene	3.53E-07	lb/MMBtu									2.47E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									6.94E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									1.09E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									1.32E-07

Table H.45 Annual Gaseous Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 10	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 10								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									2.63E-07
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									4.08E-07
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									3.42E-07
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	500	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.58	0.61	0.001	0.04	0	114.14	0.005	0.0009	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									6.53E-04
															Toluene	4.09E-04	lb/MMBtu									2.86E-04
															Xylenes	2.85E-04	lb/MMBtu									2.00E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									2.74E-05
															Formaldehyde	1.18E-03	lb/MMBtu									8.26E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									5.37E-04
															Acrolein	9.25E-05	lb/MMBtu									6.48E-05
															Naphthalene	8.48E-05	lb/MMBtu									5.94E-05
															Acenaphthylene	5.06E-06	lb/MMBtu									3.54E-06
															Acenaphthene	1.42E-06	lb/MMBtu									9.94E-07
															Fluorene	2.92E-05	lb/MMBtu									2.04E-05
															Phenanthrene	2.94E-05	lb/MMBtu									2.06E-05
															Anthracene	1.87E-06	lb/MMBtu									1.31E-06
															Fluoranthene	7.61E-06	lb/MMBtu									5.33E-06
															Pyrene	4.78E-06	lb/MMBtu									3.35E-06
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									1.18E-06
															Chrysene	3.53E-07	lb/MMBtu									2.47E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									6.94E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									1.09E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									1.32E-07
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									2.63E-07
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									4.08E-07
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									3.42E-07
Tanks																										
T01	C7 Distribution Tank (T-C7D)	C7DT	4-03-010-19	NF	8,760	hours	0	0	0	1.08E-01	0	0	0	0	--	--	lb/hr	0	0	0	0.47	0	0	0	0	--
T02	MIBC Storage Tank (T-MIBCS)	MST	4-90-999-98	NF	8,760	hours	0	0	0	3.53E-03	0	0	0	0	--	--	lb/hr	0	0	0	0.02	0	0	0	0	--
T03	Diesel Fuel Storage Tank - Heavy Vehicles 1 (T-DFS-HV1)	DFSTHV	4-03-010-19	NF	8,760	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.06	0	0	0	0	2.50E-05
															Benzene	2.74E-05	lb/hr									1.20E-04
															Toluene	3.18E-04	lb/hr									1.40E-03
															Ethylbenzene	4.45E-05	lb/hr									1.95E-04
															m-Xylene	8.23E-04	lb/hr									3.61E-03
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									2.96E-03
T04	Diesel Fuel Storage Tank - Heavy Vehicles 2 (T-DFS-HV2)	DFSTHV	4-03-010-19	NF	8,760	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.06	0	0	0	0	2.50E-05
															Benzene	2.74E-05	lb/hr									1.20E-04
															Toluene	3.18E-04	lb/hr									1.40E-03
															Ethylbenzene	4.45E-05	lb/hr									1.95E-04

Table H.45 Annual Gaseous Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 10	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 10								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															m-Xylene	8.23E-04	lb/hr									3.61E-03
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									2.96E-03
Total Non-Fugitive Emissions (excluding tailpipe emissions):																		**9.00**	**16.76**	**0.06**	**1.51**	**0.02**	**6,040.20**	**0.25**	**0.05**	**0.05**
Total Fugitive Emissions (excluding tailpipe emissions):																		**602.73**	**152.93**	**17.99**	**3.77**	**0**	**5,095.78**	**0.21**	**0.04**	**3.32**
Total Emissions (excluding tailpipe emissions):																		**611.73**	**169.69**	**18.05**	**5.28**	**0.02**	**11,135.98**	**0.45**	**0.09**	**3.37**
Tailpipe Emissions (see Tables H.51-H.55):																		**829.36**	**1,016.38**	**1.54**	**72.70**	**--**	**163,285.50**	**--**	**--**	**--**

[a] CO_2e emissions are calculcated by summing the individual greenhouse gas emissions multiplied by their global warming potential (GWP). GWP of CO_2 = 1, GWP of CH_4 = 21, GWP of N_2O = 310.

[b] All HAP emissions are included in the facility-wide potential to emit, regardless of if they are fugitive or non-fugitive emissions.

Table H.46 Maximum Daily Gaseous Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 10	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 10								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
Mining																										
MN02	Blasting	Blast	3-05-020-09	F	52	tons ANFO	67.00	17.00	2.00	0	0	566	0.02	0.005	--	--	lb/tons ANFO	1.74	0.44	0.05	0	0	14.73	0.0006	0.0001	--
Solvent Extraction and Electrowinning																										
SXE01	Solvent Extraction	SX	4-90-001-99	F	24	hours	0	0	0	9.43E-05	0	0	0	0	Benzene	3.37E-07	lb/hr-ft^2	0	0	0	0.01	0	0	0	0	3.69E-05
	4 Primary Mix Tanks (7.75' D x 9.75' H each)	4 @ 47.2 = 188.7	ft^2		9,132.9	ft^2	Total Surface Area of Solvent Extraction								Toluene	4.82E-06	lb/hr-ft^2									5.28E-04
	4 Secondary Mix Tanks (9.5' D x 9.75' H each)	4 @ 70.9 = 283.5	ft^2												Ethylbenzene	2.05E-05	lb/hr-ft^2									2.25E-03
	3 Tertiary Mix Tanks (9.5' D x 9.75' H each)	3 @ 70.9 = 212.6	ft^2												Xylenes	2.80E-05	lb/hr-ft^2									3.07E-03
	4 Extraction Settlers (64' L x 33' W x 3.33' H each)	4 @ 2,112 = 8,448	ft^2												Others (including Hexane)	2.94E-05	lb/hr-ft^2									3.22E-03
SXE02	Electrowinning Commercial Cells (EWCC)	EW	none	NF	24	hours	0	0	0	0	1.57E-04	0	0	0	Cobalt Compounds	2.36E-08	lb/hr-ft^2	0	0	0	0	0.00005	0	0	0	7.46E-09
	Controlled by Cell Ventilation Scrubbers (PC-EWCVS1/EWCVS3)				2,640	ft^2																				
					99	Control Efficiency (%)																				
Fuel Burning Equipment																										
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	24	hours	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	POM	3.30E-03	lb/1000 gal	0.003	0.01	0.0001	0.0001	0	12.20	0.0005	0.0001	1.73E-06
					6.0	MMBtu/hr									Formaldehyde	6.10E-02	lb/1000 gal									3.21E-05
															Arsenic	4.00	lb/10^{12} Btu									2.88E-07
															Beryllium	3.00	lb/10^{12} Btu									2.16E-07
															Cadmium	3.00	lb/10^{12} Btu									2.16E-07
															Chromium	3.00	lb/10^{12} Btu									2.16E-07
															Lead	9.00	lb/10^{12} Btu									6.48E-07
															Mercury	3.00	lb/10^{12} Btu									2.16E-07
															Manganese	6.00	lb/10^{12} Btu									4.32E-07
															Nickel	3.00	lb/10^{12} Btu									2.16E-07
															Selenium	15.00	lb/10^{12} Btu									1.08E-06
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.09	0.16	0.0002	0.01	0	18.37	0.0007	0.0001	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									8.74E-05
															Toluene	2.81E-04	lb/MMBtu									3.17E-05
															Xylenes	1.93E-04	lb/MMBtu									2.17E-05
															Formaldehyde	7.89E-05	lb/MMBtu									8.89E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.84E-06
															Acrolein	7.88E-06	lb/MMBtu									8.88E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.46E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									1.04E-06
															Acenaphthene	4.68E-06	lb/MMBtu									5.27E-07
															Fluorene	1.28E-05	lb/MMBtu									1.44E-06
															Phenanthrene	4.08E-05	lb/MMBtu									4.60E-06
															Anthracene	1.23E-06	lb/MMBtu									1.39E-07
															Fluoranthene	4.03E-06	lb/MMBtu									4.54E-07
															Pyrene	3.71E-06	lb/MMBtu									4.18E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									7.01E-08
															Chrysene	1.53E-06	lb/MMBtu									1.72E-07

Table H.46 Maximum Daily Gaseous Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 10	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 10								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.25E-07
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.46E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.89E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									4.66E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.90E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									6.26E-08
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.09	0.16	0.0002	0.01	0	18.37	0.0007	0.0001	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									8.74E-05
															Toluene	2.81E-04	lb/MMBtu									3.17E-05
															Xylenes	1.93E-04	lb/MMBtu									2.17E-05
															Formaldehyde	7.89E-05	lb/MMBtu									8.89E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.84E-06
															Acrolein	7.88E-06	lb/MMBtu									8.88E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.46E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									1.04E-06
															Acenaphthene	4.68E-06	lb/MMBtu									5.27E-07
															Fluorene	1.28E-05	lb/MMBtu									1.44E-06
															Phenanthrene	4.08E-05	lb/MMBtu									4.60E-06
															Anthracene	1.23E-06	lb/MMBtu									1.39E-07
															Fluoranthene	4.03E-06	lb/MMBtu									4.54E-07
															Pyrene	3.71E-06	lb/MMBtu									4.18E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									7.01E-08
															Chrysene	1.53E-06	lb/MMBtu									1.72E-07
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.25E-07
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.46E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.89E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									4.66E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.90E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									6.26E-08
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.07	0.12	0.0001	0.008	0	13.78	0.0006	0.0001	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									6.56E-05
															Toluene	2.81E-04	lb/MMBtu									2.37E-05
															Xylenes	1.93E-04	lb/MMBtu									1.63E-05
															Formaldehyde	7.89E-05	lb/MMBtu									6.67E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.13E-06
															Acrolein	7.88E-06	lb/MMBtu									6.66E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.10E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									7.80E-07
															Acenaphthene	4.68E-06	lb/MMBtu									3.95E-07
															Fluorene	1.28E-05	lb/MMBtu									1.08E-06

Table H.46 Maximum Daily Gaseous Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 10	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 10								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Phenanthrene	4.08E-05	lb/MMBtu									3.45E-06
															Anthracene	1.23E-06	lb/MMBtu									1.04E-07
															Fluoranthene	4.03E-06	lb/MMBtu									3.40E-07
															Pyrene	3.71E-06	lb/MMBtu									3.13E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.25E-08
															Chrysene	1.53E-06	lb/MMBtu									1.29E-07
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									9.38E-08
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.84E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.17E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.50E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.92E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									4.70E-08
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.07	0.12	0.0001	0.008	0	13.78	0.0006	0.0001	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									6.56E-05
															Toluene	2.81E-04	lb/MMBtu									2.37E-05
															Xylenes	1.93E-04	lb/MMBtu									1.63E-05
															Formaldehyde	7.89E-05	lb/MMBtu									6.67E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.13E-06
															Acrolein	7.88E-06	lb/MMBtu									6.66E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.10E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									7.80E-07
															Acenaphthene	4.68E-06	lb/MMBtu									3.95E-07
															Fluorene	1.28E-05	lb/MMBtu									1.08E-06
															Phenanthrene	4.08E-05	lb/MMBtu									3.45E-06
															Anthracene	1.23E-06	lb/MMBtu									1.04E-07
															Fluoranthene	4.03E-06	lb/MMBtu									3.40E-07
															Pyrene	3.71E-06	lb/MMBtu									3.13E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.25E-08
															Chrysene	1.53E-06	lb/MMBtu									1.29E-07
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									9.38E-08
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.84E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.17E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.50E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.92E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									4.70E-08
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	24	hours	5.00	4.43	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.007	0.006	0.000009	0.0004	0	0.92	0.00004	0.000007	--
					50	kW									Benzene	9.33E-04	lb/MMBtu									5.25E-06
															Toluene	4.09E-04	lb/MMBtu									2.30E-06
															Xylenes	2.85E-04	lb/MMBtu									1.61E-06
															1,3-Butadiene	3.91E-05	lb/MMBtu									2.20E-07

Table H.46 Maximum Daily Gaseous Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 10	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 10								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Formaldehyde	1.18E-03	lb/MMBtu									6.65E-06
															Acetaldehyde	7.67E-04	lb/MMBtu									4.32E-06
															Acrolein	9.25E-05	lb/MMBtu									5.21E-07
															Naphthalene	8.48E-05	lb/MMBtu									4.78E-07
															Acenaphthylene	5.06E-06	lb/MMBtu									2.85E-08
															Acenaphthene	1.42E-06	lb/MMBtu									8.00E-09
															Fluorene	2.92E-05	lb/MMBtu									1.64E-07
															Phenanthrene	2.94E-05	lb/MMBtu									1.66E-07
															Anthracene	1.87E-06	lb/MMBtu									1.05E-08
															Fluoranthene	7.61E-06	lb/MMBtu									4.29E-08
															Pyrene	4.78E-06	lb/MMBtu									2.69E-08
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									9.46E-09
															Chrysene	3.53E-07	lb/MMBtu									1.99E-09
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									5.58E-10
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									8.73E-10
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									1.06E-09
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									2.11E-09
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									3.28E-09
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									2.75E-09
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	24	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.03	0.03	0.00005	0.002	0	5.48	0.0002	0.00004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									3.13E-05
															Toluene	4.09E-04	lb/MMBtu									1.37E-05
															Xylenes	2.85E-04	lb/MMBtu									9.58E-06
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.31E-06
															Formaldehyde	1.18E-03	lb/MMBtu									3.96E-05
															Acetaldehyde	7.67E-04	lb/MMBtu									2.58E-05
															Acrolein	9.25E-05	lb/MMBtu									3.11E-06
															Naphthalene	8.48E-05	lb/MMBtu									2.85E-06
															Acenaphthylene	5.06E-06	lb/MMBtu									1.70E-07
															Acenaphthene	1.42E-06	lb/MMBtu									4.77E-08
															Fluorene	2.92E-05	lb/MMBtu									9.81E-07
															Phenanthrene	2.94E-05	lb/MMBtu									9.88E-07
															Anthracene	1.87E-06	lb/MMBtu									6.28E-08
															Fluoranthene	7.61E-06	lb/MMBtu									2.56E-07
															Pyrene	4.78E-06	lb/MMBtu									1.61E-07
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									5.64E-08
															Chrysene	3.53E-07	lb/MMBtu									1.19E-08
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									3.33E-09
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									5.21E-09
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									6.32E-09

Table H.46 Maximum Daily Gaseous Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 10	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 10								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.26E-08
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.96E-08
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.64E-08
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	24	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.03	0.03	0.00005	0.002	0	5.48	0.0002	0.00004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									3.13E-05
															Toluene	4.09E-04	lb/MMBtu									1.37E-05
															Xylenes	2.85E-04	lb/MMBtu									9.58E-06
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.31E-06
															Formaldehyde	1.18E-03	lb/MMBtu									3.96E-05
															Acetaldehyde	7.67E-04	lb/MMBtu									2.58E-05
															Acrolein	9.25E-05	lb/MMBtu									3.11E-06
															Naphthalene	8.48E-05	lb/MMBtu									2.85E-06
															Acenaphthylene	5.06E-06	lb/MMBtu									1.70E-07
															Acenaphthene	1.42E-06	lb/MMBtu									4.77E-08
															Fluorene	2.92E-05	lb/MMBtu									9.81E-07
															Phenanthrene	2.94E-05	lb/MMBtu									9.88E-07
															Anthracene	1.87E-06	lb/MMBtu									6.28E-08
															Fluoranthene	7.61E-06	lb/MMBtu									2.56E-07
															Pyrene	4.78E-06	lb/MMBtu									1.61E-07
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									5.64E-08
															Chrysene	3.53E-07	lb/MMBtu									1.19E-08
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									3.33E-09
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									5.21E-09
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									6.32E-09
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.26E-08
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.96E-08
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.64E-08
Tanks																										
T01	C7 Distribution Tank (T-C7D)	C7DT	4-03-010-19	NF	24	hours	0	0	0	1.08E-01	0	0	0	0	--	--	lb/hr	0	0	0	0.001	0	0	0	0	--
T02	MIBC Storage Tank (T-MIBCS)	MST	4-90-999-98	NF	24	hours	0	0	0	3.53E-03	0	0	0	0	--	--	lb/hr	0	0	0	0.00004	0	0	0	0	--
T03	Diesel Fuel Storage Tank - Heavy Vehicles 1 (T-DFS-HV1)	DFSTHV	4-03-010-19	NF	24	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.0002	0	0	0	0	6.85E-08
															Benzene	2.74E-05	lb/hr									3.29E-07
															Toluene	3.18E-04	lb/hr									3.82E-06
															Ethylbenzene	4.45E-05	lb/hr									5.34E-07
															m-Xylene	8.23E-04	lb/hr									9.88E-06
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									8.11E-06
T04	Diesel Fuel Storage Tank - Heavy Vehicles 2 (T-DFS-HV2)	DFSTHV	4-03-010-19	NF	24	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.0002	0	0	0	0	6.85E-08
															Benzene	2.74E-05	lb/hr									3.29E-07
															Toluene	3.18E-04	lb/hr									3.82E-06
															Ethylbenzene	4.45E-05	lb/hr									5.34E-07

Table H.46 Maximum Daily Gaseous Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 10	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 10								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															m-Xylene	8.23E-04	lb/hr									9.88E-06
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									8.11E-06
Total Non-Fugitive Emissions (excluding tailpipe emissions):																		**0.39**	**0.63**	**0.0008**	**0.04**	**0.00005**	**88.36**	**0.004**	**0.0007**	**0.001**
Total Fugitive Emissions (excluding tailpipe emissions):																		**1.74**	**0.44**	**0.05**	**0.01**	**0**	**14.73**	**0.0006**	**0.0001**	**0.009**
Total Emissions (excluding tailpipe emissions):																		**2.13**	**1.07**	**0.05**	**0.05**	**0.00005**	**103.09**	**0.004**	**0.0008**	**0.01**
Tailpipe Emissions (see Tables H.51-H.55):																		**2.78**	**3.51**	**0.006**	**0.25**	**--**	**542.21**	**--**	**--**	**--**

[a] CO_2e emissions are calculcated by summing the individual greenhouse gas emissions multiplied by their global warming potential (GWP). GWP of CO_2 = 1, GWP of CH_4 = 21, GWP of N_2O = 310.

[b] All HAP emissions are included in the facility-wide potential to emit, regardless of if they are fugitive or non-fugitive emissions.

Table H.47 Hourly Gaseous Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 10	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 10								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
Mining																										
MN02	Blasting	Blast	3-05-020-09	F	52	tons ANFO	67.00	17.00	2.00	0	0	566	0.02	0.005	--	--	lb/tons ANFO	3,484.00	884.00	104.00	0	0	29,455.36	1.19	0.24	--
Solvent Extraction and Electrowinning																										
SXE01	Solvent Extraction	SX	4-90-001-99	F	1	hours	0	0	0	9.43E-05	0	0	0	0	Benzene	3.37E-07	lb/hr-ft^2	0	0	0	0.86	0	0	0	0	3.08E-03
	4 Primary Mix Tanks (7.75' D x 9.75' H each)	4 @ 47.2 = 188.7	ft^2		9,132.9	ft^2	Total Surface Area of Solvent Extraction								Toluene	4.82E-06	lb/hr-ft^2									4.40E-02
	4 Secondary Mix Tanks (9.5' D x 9.75' H each)	4 @ 70.9 = 283.5	ft^2												Ethylbenzene	2.05E-05	lb/hr-ft^2									1.87E-01
	3 Tertiary Mix Tanks (9.5' D x 9.75' H each)	3 @ 70.9 = 212.6	ft^2												Xylenes	2.80E-05	lb/hr-ft^2									2.56E-01
	4 Extraction Settlers (64' L x 33' W x 3.33' H each)	4 @ 2,112 = 8,448	ft^2												Others (including Hexane)	2.94E-05	lb/hr-ft^2									2.69E-01
SXE02	Electrowinning Commercial Cells (EWCC)	EW	none	NF	1	hours	0	0	0	0	1.57E-04	0	0	0	Cobalt Compounds	2.36E-08	lb/hr-ft^2	0	0	0	0	0.004	0	0	0	6.22E-07
	Controlled by Cell Ventilation Scrubbers (PC-EWCVS1/EWCVS3)				2,640	ft^2																				
					99	Control Efficiency (%)																				
Fuel Burning Equipment																										
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	1	hours	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	POM	3.30E-03	lb/1000 gal	0.22	0.88	0.009	0.009	0	1,016.78	0.04	0.008	1.45E-04
					6.0	MMBtu/hr									Formaldehyde	6.10E-02	lb/1000 gal									2.67E-03
															Arsenic	4.00	lb/10^{12} Btu									2.40E-05
															Beryllium	3.00	lb/10^{12} Btu									1.80E-05
															Cadmium	3.00	lb/10^{12} Btu									1.80E-05
															Chromium	3.00	lb/10^{12} Btu									1.80E-05
															Lead	9.00	lb/10^{12} Btu									5.40E-05
															Mercury	3.00	lb/10^{12} Btu									1.80E-05
															Manganese	6.00	lb/10^{12} Btu									3.60E-05
															Nickel	3.00	lb/10^{12} Btu									1.80E-05
															Selenium	15.00	lb/10^{12} Btu									9.00E-05
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	7.72	13.23	0.01	0.88	0	1,530.61	0.06	0.01	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									7.28E-03
															Toluene	2.81E-04	lb/MMBtu									2.64E-03
															Xylenes	1.93E-04	lb/MMBtu									1.81E-03
															Formaldehyde	7.89E-05	lb/MMBtu									7.41E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									2.37E-04
															Acrolein	7.88E-06	lb/MMBtu									7.40E-05
															Naphthalene	1.30E-04	lb/MMBtu									1.22E-03
															Acenaphthylene	9.23E-06	lb/MMBtu									8.66E-05
															Acenaphthene	4.68E-06	lb/MMBtu									4.39E-05
															Fluorene	1.28E-05	lb/MMBtu									1.20E-04
															Phenanthrene	4.08E-05	lb/MMBtu									3.83E-04
															Anthracene	1.23E-06	lb/MMBtu									1.15E-05
															Fluoranthene	4.03E-06	lb/MMBtu									3.78E-05
															Pyrene	3.71E-06	lb/MMBtu									3.48E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.84E-06
															Chrysene	1.53E-06	lb/MMBtu									1.44E-05

Table H.47 Hourly Gaseous Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 10	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 10								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.04E-05
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.05E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.41E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.89E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.25E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									5.22E-06
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	7.72	13.23	0.01	0.88	0	1,530.61	0.06	0.01	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									7.28E-03
															Toluene	2.81E-04	lb/MMBtu									2.64E-03
															Xylenes	1.93E-04	lb/MMBtu									1.81E-03
															Formaldehyde	7.89E-05	lb/MMBtu									7.41E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									2.37E-04
															Acrolein	7.88E-06	lb/MMBtu									7.40E-05
															Naphthalene	1.30E-04	lb/MMBtu									1.22E-03
															Acenaphthylene	9.23E-06	lb/MMBtu									8.66E-05
															Acenaphthene	4.68E-06	lb/MMBtu									4.39E-05
															Fluorene	1.28E-05	lb/MMBtu									1.20E-04
															Phenanthrene	4.08E-05	lb/MMBtu									3.83E-04
															Anthracene	1.23E-06	lb/MMBtu									1.15E-05
															Fluoranthene	4.03E-06	lb/MMBtu									3.78E-05
															Pyrene	3.71E-06	lb/MMBtu									3.48E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.84E-06
															Chrysene	1.53E-06	lb/MMBtu									1.44E-05
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.04E-05
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.05E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.41E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.89E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.25E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									5.22E-06
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	5.79	9.92	0.01	0.66	0	1,147.96	0.05	0.009	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									5.46E-03
															Toluene	2.81E-04	lb/MMBtu									1.98E-03
															Xylenes	1.93E-04	lb/MMBtu									1.36E-03
															Formaldehyde	7.89E-05	lb/MMBtu									5.55E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									1.77E-04
															Acrolein	7.88E-06	lb/MMBtu									5.55E-05
															Naphthalene	1.30E-04	lb/MMBtu									9.15E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									6.50E-05
															Acenaphthene	4.68E-06	lb/MMBtu									3.29E-05
															Fluorene	1.28E-05	lb/MMBtu									9.01E-05

Table H.47 Hourly Gaseous Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 10	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 10								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Phenanthrene	4.08E-05	lb/MMBtu									2.87E-04
															Anthracene	1.23E-06	lb/MMBtu									8.66E-06
															Fluoranthene	4.03E-06	lb/MMBtu									2.84E-05
															Pyrene	3.71E-06	lb/MMBtu									2.61E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									4.38E-06
															Chrysene	1.53E-06	lb/MMBtu									1.08E-05
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									7.81E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.53E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									1.81E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									2.91E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.44E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									3.91E-06
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	5.79	9.92	0.01	0.66	0	1,147.96	0.05	0.009	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									5.46E-03
															Toluene	2.81E-04	lb/MMBtu									1.98E-03
															Xylenes	1.93E-04	lb/MMBtu									1.36E-03
															Formaldehyde	7.89E-05	lb/MMBtu									5.55E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									1.77E-04
															Acrolein	7.88E-06	lb/MMBtu									5.55E-05
															Naphthalene	1.30E-04	lb/MMBtu									9.15E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									6.50E-05
															Acenaphthene	4.68E-06	lb/MMBtu									3.29E-05
															Fluorene	1.28E-05	lb/MMBtu									9.01E-05
															Phenanthrene	4.08E-05	lb/MMBtu									2.87E-04
															Anthracene	1.23E-06	lb/MMBtu									8.66E-06
															Fluoranthene	4.03E-06	lb/MMBtu									2.84E-05
															Pyrene	3.71E-06	lb/MMBtu									2.61E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									4.38E-06
															Chrysene	1.53E-06	lb/MMBtu									1.08E-05
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									7.81E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.53E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									1.81E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									2.91E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.44E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									3.91E-06
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	1	hours	5.00	4.43	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.55	0.49	0.0007	0.03	0	76.53	0.003	0.0006	--
					50	kW									Benzene	9.33E-04	lb/MMBtu									4.38E-04
															Toluene	4.09E-04	lb/MMBtu									1.92E-04
															Xylenes	2.85E-04	lb/MMBtu									1.34E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.84E-05

Table H.47 Hourly Gaseous Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 10	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 10								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Formaldehyde	1.18E-03	lb/MMBtu									5.54E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									3.60E-04
															Acrolein	9.25E-05	lb/MMBtu									4.34E-05
															Naphthalene	8.48E-05	lb/MMBtu									3.98E-05
															Acenaphthylene	5.06E-06	lb/MMBtu									2.37E-06
															Acenaphthene	1.42E-06	lb/MMBtu									6.66E-07
															Fluorene	2.92E-05	lb/MMBtu									1.37E-05
															Phenanthrene	2.94E-05	lb/MMBtu									1.38E-05
															Anthracene	1.87E-06	lb/MMBtu									8.78E-07
															Fluoranthene	7.61E-06	lb/MMBtu									3.57E-06
															Pyrene	4.78E-06	lb/MMBtu									2.24E-06
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									7.89E-07
															Chrysene	3.53E-07	lb/MMBtu									1.66E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									4.65E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									7.28E-08
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									8.82E-08
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.76E-07
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									2.74E-07
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									2.30E-07
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	1	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	2.30	2.46	0.004	0.18	0	456.55	0.02	0.004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									2.61E-03
															Toluene	4.09E-04	lb/MMBtu									1.15E-03
															Xylenes	2.85E-04	lb/MMBtu									7.98E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.09E-04
															Formaldehyde	1.18E-03	lb/MMBtu									3.30E-03
															Acetaldehyde	7.67E-04	lb/MMBtu									2.15E-03
															Acrolein	9.25E-05	lb/MMBtu									2.59E-04
															Naphthalene	8.48E-05	lb/MMBtu									2.37E-04
															Acenaphthylene	5.06E-06	lb/MMBtu									1.42E-05
															Acenaphthene	1.42E-06	lb/MMBtu									3.98E-06
															Fluorene	2.92E-05	lb/MMBtu									8.18E-05
															Phenanthrene	2.94E-05	lb/MMBtu									8.23E-05
															Anthracene	1.87E-06	lb/MMBtu									5.24E-06
															Fluoranthene	7.61E-06	lb/MMBtu									2.13E-05
															Pyrene	4.78E-06	lb/MMBtu									1.34E-05
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									4.70E-06
															Chrysene	3.53E-07	lb/MMBtu									9.88E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									2.77E-07
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									4.34E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									5.26E-07

Table H.47 Hourly Gaseous Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 10	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 10								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.05E-06
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.63E-06
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.37E-06
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	1	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	2.30	2.46	0.004	0.18	0	456.55	0.02	0.004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									2.61E-03
															Toluene	4.09E-04	lb/MMBtu									1.15E-03
															Xylenes	2.85E-04	lb/MMBtu									7.98E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.09E-04
															Formaldehyde	1.18E-03	lb/MMBtu									3.30E-03
															Acetaldehyde	7.67E-04	lb/MMBtu									2.15E-03
															Acrolein	9.25E-05	lb/MMBtu									2.59E-04
															Naphthalene	8.48E-05	lb/MMBtu									2.37E-04
															Acenaphthylene	5.06E-06	lb/MMBtu									1.42E-05
															Acenaphthene	1.42E-06	lb/MMBtu									3.98E-06
															Fluorene	2.92E-05	lb/MMBtu									8.18E-05
															Phenanthrene	2.94E-05	lb/MMBtu									8.23E-05
															Anthracene	1.87E-06	lb/MMBtu									5.24E-06
															Fluoranthene	7.61E-06	lb/MMBtu									2.13E-05
															Pyrene	4.78E-06	lb/MMBtu									1.34E-05
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									4.70E-06
															Chrysene	3.53E-07	lb/MMBtu									9.88E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									2.77E-07
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									4.34E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									5.26E-07
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.05E-06
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.63E-06
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.37E-06
Tanks																										
T01	C7 Distribution Tank (T-C7D)	C7DT	4-03-010-19	NF	1	hours	0	0	0	1.08E-01	0	0	0	0	--	--	lb/hr	0	0	0	0.11	0	0	0	0	--
T02	MIBC Storage Tank (T-MIBCS)	MST	4-90-999-98	NF	1	hours	0	0	0	3.53E-03	0	0	0	0	--	--	lb/hr	0	0	0	0.004	0	0	0	0	--
T03	Diesel Fuel Storage Tank - Heavy Vehicles 1 (T-DFS-HV1)	DFSTHV	4-03-010-19	NF	1	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.01	0	0	0	0	5.71E-06
															Benzene	2.74E-05	lb/hr									2.74E-05
															Toluene	3.18E-04	lb/hr									3.18E-04
															Ethylbenzene	4.45E-05	lb/hr									4.45E-05
															m-Xylene	8.23E-04	lb/hr									8.23E-04
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									6.76E-04
T04	Diesel Fuel Storage Tank - Heavy Vehicles 2 (T-DFS-HV2)	DFSTHV	4-03-010-19	NF	1	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.01	0	0	0	0	5.71E-06
															Benzene	2.74E-05	lb/hr									2.74E-05
															Toluene	3.18E-04	lb/hr									3.18E-04
															Ethylbenzene	4.45E-05	lb/hr									4.45E-05

Table H.47 Hourly Gaseous Emissions - Year 10

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 10	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 10								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															m-Xylene	8.23E-04	lb/hr									8.23E-04
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									6.76E-04
Total Non-Fugitive Emissions (excluding tailpipe emissions):																		**32.38**	**52.57**	**0.07**	**3.61**	**0.004**	**7,363.56**	**0.30**	**0.06**	**0.08**
Total Fugitive Emissions (excluding tailpipe emissions):																		**3,484.00**	**884.00**	**104.00**	**0.86**	**0**	**29,455.36**	**1.19**	**0.24**	**0.76**
Total Emissions (excluding tailpipe emissions):																		**3,516.38**	**936.57**	**104.07**	**4.48**	**0.004**	**36,818.92**	**1.49**	**0.30**	**0.84**
Tailpipe Emissions (see Tables H.51-H.55):																		**231.91**	**294.06**	**1.00**	**20.76**	**--**	**47,021.00**	**--**	**--**	**--**

[a] CO_2e emissions are calculcated by summing the individual greenhouse gas emissions multiplied by their global warming potential (GWP). GWP of CO_2 = 1, GWP of CH_4 = 21, GWP of N_2O = 310.

[b] All HAP emissions are included in the facility-wide potential to emit, regardless of if they are fugitive or non-fugitive emissions.

Table H.48 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.15	g/hp-hr	7.01	0.08	23.14
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.03	g/hp-hr	0.33	0.004	1.10
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.03	g/hp-hr	0.04	0.0005	0.19
Crawler Dozers, D10T Class	3	580	0.70	17	6,090	hours	0.575	0.01	g/hp-hr	0.02	0.0002	0.07
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.003	0.00004	0.01
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,175	hours	0.575	0.01	g/hp-hr	0.01	0.0002	0.06
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	0.03	g/hp-hr	0.06	0.0007	0.20
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.03	g/hp-hr	0.06	0.0008	0.28
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.003	0.00004	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.15	g/hp-hr	0.70	0.008	3.08
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.01	g/hp-hr	0.007	0.00009	0.03
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.0007	0.000009	0.003

Table H.48 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.007
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.04	0.0005	0.17
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.008	0.0001	0.04
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.2117	g/mile	0.004	0.00005	0.02
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.2117	g/mile	0.00005	0.0000006	0.0002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.001	0.00002	0.006
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.02	g/hp-hr	0.004	0.00005	0.02
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00003	0.01
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000008	0.003
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000009	0.003
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.002	0.00002	0.009
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.01	g/hp-hr	0.0006	0.000007	0.003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.004

Table H.48 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.005
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.002	0.00002	0.009
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.2117	g/mile	0.0002	0.000002	0.0007
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.008
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.0005	0.000006	0.002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.005	0.00006	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.01	g/hp-hr	0.002	0.00003	0.01
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.02	g/hp-hr	0.001	0.00002	0.006
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.07	0.0009	0.32
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.2117	g/mile	0.0004	0.000005	0.002
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.2117	g/mile	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.02	g/hp-hr	0.06	0.0007	0.25
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.01	g/hp-hr	0.004	0.00005	0.001
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.01	g/hp-hr	0.009	0.0001	0.002
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.2117	g/mile	0.01	0.0002	0.04
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.2117	g/mile	0.003	0.000004	0.0005
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.2117	g/mile	0.01	0.00003	0.01

Table H.48 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 10

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.2117	g/mile	0.007	0.000005	0.001
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.001
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.2117	g/mile	0.003	0.000006	0.001
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.2117	g/mile	0.003	0.00001	0.003
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.2117	g/mile	0.003	0.000002	0.0003
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	0.0255	g/mile	0.002	0.00002	0.007
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	0.0255	g/mile	0.0002	0.000002	0.0007
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	0.0255	g/mile	0.0004	0.000005	0.002
Total Emissions from Haul Truck Engines:										**7.35**	**0.09**	**24.24**
Total Emissions from Other Mobile Engines:										**1.25**	**0.01**	**5.15**
Total Emissions from All Mobile Engines:										**8.59**	**0.10**	**29.39**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.49 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.15	g/hp-hr	7.01	0.08	23.14
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.03	g/hp-hr	0.33	0.004	1.10
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.03	g/hp-hr	0.04	0.0005	0.19
Crawler Dozers, D10T Class	3	580	0.70	17	6,090	hours	0.575	0.01	g/hp-hr	0.02	0.0002	0.07
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.003	0.00004	0.01
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,175	hours	0.575	0.01	g/hp-hr	0.01	0.0002	0.06
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	0.03	g/hp-hr	0.06	0.0007	0.20
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.03	g/hp-hr	0.06	0.0008	0.28
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.003	0.00004	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.15	g/hp-hr	0.70	0.008	3.08
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.01	g/hp-hr	0.007	0.00009	0.03
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.0007	0.000009	0.003

Table H.49 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.007
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.04	0.0005	0.17
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.008	0.0001	0.04
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.2117	g/mile	0.004	0.00005	0.02
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.2117	g/mile	0.00005	0.0000006	0.0002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.001	0.00002	0.006
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.02	g/hp-hr	0.004	0.00005	0.02
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00003	0.01
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Copper Cathode Forklift	1	92.5	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000008	0.003
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000009	0.003
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.002	0.00002	0.009
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.01	g/hp-hr	0.0006	0.000007	0.003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.004

Table H.49 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.005
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.002	0.00002	0.009
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.2117	g/mile	0.0002	0.000002	0.0007
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.008
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.0005	0.000006	0.002
Truck Shop Bridge Crane, 25 tons	1	24.1	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.005	0.00006	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.40	0.01	g/hp-hr	0.002	0.00003	0.01
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.30	0.02	g/hp-hr	0.001	0.00002	0.006
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.07	0.0009	0.32
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.2117	g/mile	0.0004	0.000005	0.002
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.2117	g/mile	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.02	g/hp-hr	0.06	0.0007	0.25
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.01	g/hp-hr	0.004	0.00005	0.001
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.01	g/hp-hr	0.009	0.0001	0.002
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.2117	g/mile	0.01	0.0002	0.04
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.2117	g/mile	0.003	0.000004	0.0005
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.2117	g/mile	0.01	0.00003	0.01

Table H.49 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 10

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.2117	g/mile	0.007	0.000005	0.001
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.001
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.2117	g/mile	0.003	0.000006	0.001
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.2117	g/mile	0.003	0.00001	0.003
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.2117	g/mile	0.003	0.000002	0.0003
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	0.0255	g/mile	0.002	0.00002	0.007
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	0.0255	g/mile	0.0002	0.000002	0.0007
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	0.0255	g/mile	0.0004	0.000005	0.002
Total Emissions from Haul Truck Engines:										**7.35**	**0.09**	**24.24**
Total Emissions from Other Mobile Engines:										**1.25**	**0.01**	**5.15**
Total Emissions from All Mobile Engies:										**8.59**	**0.10**	**29.39**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.50 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.15	g/hp-hr	7.01	0.08	23.14
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.03	g/hp-hr	0.33	0.004	1.10
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.03	g/hp-hr	0.04	0.0005	0.19
Crawler Dozers, D10T Class	3	580	0.70	17	6,090	hours	0.575	0.01	g/hp-hr	0.02	0.0002	0.07
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.003	0.00004	0.01
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,175	hours	0.575	0.01	g/hp-hr	0.01	0.0002	0.06
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	0.03	g/hp-hr	0.06	0.0007	0.20
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.03	g/hp-hr	0.06	0.0008	0.28
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.003	0.00004	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.15	g/hp-hr	0.70	0.008	3.08
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.01	g/hp-hr	0.007	0.00009	0.03
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.0007	0.000009	0.003

Table H.50 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.007
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.04	0.0005	0.17
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.008	0.0001	0.04
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.2117	g/mile	0.004	0.00005	0.02
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.2117	g/mile	0.00005	0.0000006	0.0002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.001	0.00002	0.006
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.02	g/hp-hr	0.004	0.00005	0.02
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00003	0.01
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000008	0.003
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000009	0.003
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.002	0.00002	0.009
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.01	g/hp-hr	0.0006	0.000007	0.003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.004

Table H.50 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.005
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.002	0.00002	0.009
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.2117	g/mile	0.0002	0.000002	0.0007
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.008
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.0005	0.000006	0.002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.005	0.00006	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.01	g/hp-hr	0.002	0.00003	0.01
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.02	g/hp-hr	0.001	0.00002	0.006
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.07	0.0009	0.32
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.2117	g/mile	0.0004	0.000005	0.002
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.2117	g/mile	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.02	g/hp-hr	0.06	0.0007	0.25
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.01	g/hp-hr	0.004	0.00005	0.001
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.01	g/hp-hr	0.009	0.0001	0.002
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.2117	g/mile	0.01	0.0002	0.04
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.2117	g/mile	0.003	0.000004	0.0005
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.2117	g/mile	0.01	0.00003	0.01

Table H.50 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 10

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.2117	g/mile	0.007	0.000005	0.001
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.001
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.2117	g/mile	0.003	0.000006	0.001
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.2117	g/mile	0.003	0.00001	0.003
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.2117	g/mile	0.003	0.000002	0.0003
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	0.0255	g/mile	0.002	0.00002	0.007
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	0.0255	g/mile	0.0002	0.000002	0.0007
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	0.0255	g/mile	0.0004	0.000005	0.002
Total Emissions from Haul Truck Engines:										**7.35**	**0.09**	**24.24**
Total Emissions from Other Mobile Engines:										**1.25**	**0.01**	**5.15**
Total Emissions from All Mobile Engines:										**8.59**	**0.10**	**29.39**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.51 CO Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	CO Emission Factor		CO Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	2.60	g/hp-hr	121.52	1.46	401.01
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	2.60	g/hp-hr	29.16	0.35	96.24
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	2.60	g/hp-hr	3.84	0.05	16.81
Crawler Dozers, D10T Class	3	580	0.70	17	6,090	hours	0.575	2.60	g/hp-hr	3.99	0.05	17.46
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	2.60	g/hp-hr	0.77	0.009	3.36
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,175	hours	0.575	2.60	g/hp-hr	3.47	0.04	15.20
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	2.60	g/hp-hr	1.20	0.01	5.27
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	2.60	g/hp-hr	1.34	0.02	5.87
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	2.60	g/hp-hr	4.82	0.06	17.58
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	5.55	0.07	24.29
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.79	0.009	3.44
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	2.60	g/hp-hr	12.17	0.15	53.33
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.66	0.02	7.29
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.66	0.02	7.29
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.29	0.02	5.67
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	2.60	g/hp-hr	1.30	0.02	5.67
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	2.60	g/hp-hr	1.85	0.02	8.11
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	3.70	g/hp-hr	0.27	0.003	1.16

Table H.51 CO Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	CO Emission Factor		CO Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.43	0.005	1.86
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	3.42	0.04	15.00
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	2.60	g/hp-hr	2.12	0.03	9.27
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	1.870	g/mile	0.04	0.0004	0.15
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	1.870	g/mile	0.0005	0.000006	0.002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.32	0.004	1.42
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.50	0.006	2.18
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	4.10	g/hp-hr	0.82	0.01	3.58
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.59	0.007	2.59
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.58	0.007	2.53
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.33	0.004	1.46
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.33	0.004	1.46
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	2.60	g/hp-hr	0.18	0.002	0.79
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	2.60	g/hp-hr	0.19	0.002	0.83
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	2.60	g/hp-hr	0.53	0.006	2.30
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	3.70	g/hp-hr	0.23	0.003	1.00
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.59	0.007	2.59
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.18	0.002	0.79

Table H.51 CO Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	CO Emission Factor		CO Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.23	0.003	1.00
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.36	0.004	1.58
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.29	0.02	5.67
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	1.870	g/mile	0.001	0.00002	0.006
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.49	0.006	2.16
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	3.70	g/hp-hr	0.20	0.002	0.86
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	4.90	g/hp-hr	0.08	0.001	0.37
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	3.70	g/hp-hr	0.85	0.01	3.71
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	3.70	g/hp-hr	0.27	0.003	1.17
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	6.39	0.08	28.00
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	1.870	g/mile	0.004	0.00004	0.02
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	1.870	g/mile	0.02	0.0003	0.10
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	2.60	g/hp-hr	7.45	0.09	32.61
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	2.60	g/hp-hr	1.15	0.01	0.29
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	3.70	g/hp-hr	3.26	0.04	0.82
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	1.870	g/mile	0.12	0.002	0.35
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	1.870	g/mile	0.03	0.00003	0.004
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	1.870	g/mile	0.09	0.0003	0.11

Table H.51 CO Emissions from Fuel Burning Mobile Engines - Year 10

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	CO Emission Factor		CO Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	1.870	g/mile	0.06	0.0001	0.04
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	1.870	g/mile	0.06	0.00005	0.01
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	1.870	g/mile	0.06	0.0001	0.04
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	1.870	g/mile	0.06	0.00009	0.01
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	1.870	g/mile	0.03	0.00005	0.01
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	1.870	g/mile	0.03	0.0001	0.03
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	1.870	g/mile	0.03	0.00002	0.002
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	15.51	g/mile	0.94	0.01	4.10
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	15.51	g/mile	0.09	0.001	0.41
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	15.51	g/mile	0.23	0.003	1.03
Total Emissions from Haul Truck Engines:										**150.68**	**1.81**	**497.25**
Total Emissions from Other Mobile Engines:										**81.23**	**0.97**	**332.11**
Total Emissions from All Mobile Engines:										**231.91**	**2.78**	**829.36**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.52 NO_x Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	4.50	g/hp-hr	210.32	2.52	694.06
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	2.61	g/hp-hr	29.28	0.35	96.61
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	2.60	g/hp-hr	3.84	0.05	16.81
Crawler Dozers, D10T Class	3	580	0.70	17	6,090	hours	0.575	0.30	g/hp-hr	0.46	0.006	2.01
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.30	g/hp-hr	0.09	0.001	0.39
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,175	hours	0.575	0.30	g/hp-hr	0.40	0.005	1.75
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.30	g/hp-hr	0.14	0.002	0.61
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.30	g/hp-hr	0.15	0.002	0.68
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	2.60	g/hp-hr	4.82	0.06	17.58
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	5.55	0.07	24.29
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.09	0.001	0.40
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	4.50	g/hp-hr	21.07	0.25	92.29
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.19	0.002	0.84
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.19	0.002	0.84
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.15	0.002	0.65
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.30	g/hp-hr	0.15	0.002	0.65
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.30	g/hp-hr	0.21	0.003	0.94
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.30	g/hp-hr	0.02	0.0003	0.09

Table H.52 NO_x Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.05	0.0006	0.21
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	3.42	0.04	15.00
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.30	g/hp-hr	0.24	0.003	1.07
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	7.394	g/mile	0.14	0.002	0.61
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	7.394	g/mile	0.002	0.00002	0.008
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.03	0.0003	0.12
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.04	0.0005	0.18
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	3.30	g/hp-hr	0.66	0.008	2.88
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.07	0.0008	0.30
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.05	0.0006	0.21
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.03	0.0003	0.12
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.03	0.0003	0.12
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.30	g/hp-hr	0.02	0.0003	0.09
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.30	g/hp-hr	0.02	0.0003	0.10
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.30	g/hp-hr	0.06	0.0007	0.27
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.30	g/hp-hr	0.02	0.0002	0.08
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.05	0.0006	0.21
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	3.30	g/hp-hr	0.16	0.002	0.71

Table H.52 NO_x Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	3.30	g/hp-hr	0.20	0.002	0.89
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	3.30	g/hp-hr	0.32	0.004	1.41
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.15	0.002	0.65
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	7.394	g/mile	0.006	0.00007	0.02
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.06	0.0007	0.25
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.02	0.0002	0.07
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	5.00	g/hp-hr	0.09	0.001	0.38
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.30	g/hp-hr	0.07	0.0008	0.30
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	3.30	g/hp-hr	0.24	0.003	1.05
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	6.39	0.08	28.00
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	7.394	g/mile	0.01	0.0002	0.06
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	7.394	g/mile	0.09	0.001	0.39
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.50	g/hp-hr	1.43	0.02	6.27
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.30	g/hp-hr	0.13	0.002	0.03
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.30	g/hp-hr	0.26	0.003	0.07
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	7.394	g/mile	0.48	0.008	1.38
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	7.394	g/mile	0.12	0.0001	0.02
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	7.394	g/mile	0.36	0.001	0.42

Table H.52 NO_x Emissions from Fuel Burning Mobile Engines - Year 10

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	7.394	g/mile	0.24	0.0004	0.16
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	7.394	g/mile	0.24	0.0002	0.05
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	7.394	g/mile	0.24	0.0004	0.14
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	7.394	g/mile	0.24	0.0003	0.04
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	7.394	g/mile	0.12	0.0002	0.05
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	7.394	g/mile	0.12	0.0004	0.10
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	7.394	g/mile	0.12	0.00006	0.009
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	1.145	g/mile	0.07	0.0008	0.30
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	1.145	g/mile	0.007	0.00008	0.03
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	1.145	g/mile	0.02	0.0002	0.08
Total Emissions from Haul Truck Engines:										**239.60**	**2.88**	**790.67**
Total Emissions from Other Mobile Engines:										**54.46**	**0.64**	**225.71**
Total Emissions from All Mobile Engines:										**294.06**	**3.51**	**1,016.38**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.53 SO_2 Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 10		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 10	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.002	g/hp-hr	0.24	0.003	0.78
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.002	g/hp-hr	0.06	0.0007	0.19
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.003	g/hp-hr	0.007	0.00008	0.03
Crawler Dozers, D10T Class	3	580	0.70	17	6,090	hours	0.575	0.002	g/hp-hr	0.005	0.00006	0.02
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.002	g/hp-hr	0.0008	0.00001	0.004
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,175	hours	0.575	0.002	g/hp-hr	0.004	0.00005	0.02
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.002	g/hp-hr	0.001	0.00002	0.006
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.003	g/hp-hr	0.002	0.00003	0.01
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	0.003	g/hp-hr	0.02	0.0002	0.06
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.008	0.0001	0.04
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.001	0.00001	0.005
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.001	g/hp-hr	0.01	0.0001	0.05
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00003	0.01
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00003	0.01
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00002	0.008
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.002	g/hp-hr	0.001	0.00002	0.006
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.001	g/hp-hr	0.003	0.00003	0.01
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.002	g/hp-hr	0.0003	0.000004	0.001

Table H.53 SO_2 Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 10		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 10	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0006	0.000007	0.003
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.004	0.00004	0.02
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.002	g/hp-hr	0.004	0.00005	0.02
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.005	0.00006	0.02
Tire Handler	1	90	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0002	0.000003	0.001
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000003	0.001
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0004	0.000004	0.002
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.003	g/hp-hr	0.001	0.00002	0.006
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0009	0.00001	0.004
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0004	0.000005	0.002
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000003	0.001
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000003	0.001
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.002	g/hp-hr	0.0005	0.000006	0.002
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.002	g/hp-hr	0.0006	0.000007	0.002
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.002	g/hp-hr	0.0009	0.00001	0.004
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.002	g/hp-hr	0.0004	0.000005	0.002
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0004	0.000005	0.002
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0001	0.000002	0.0006

Table H.53 SO_2 Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 10		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 10	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000002	0.0007
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0003	0.000003	0.001
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00002	0.008
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0007	0.000008	0.003
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0007	0.000009	0.003
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0002	0.000002	0.0009
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.00006	0.0000008	0.0003
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.40	0.002	g/hp-hr	0.0009	0.00001	0.004
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.002	g/hp-hr	0.0004	0.000005	0.002
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.007	0.00008	0.03
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.001	0.00001	0.005
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.001	g/hp-hr	0.009	0.0001	0.04
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.021	g/hp-hr	0.009	0.0001	0.002
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.021	g/hp-hr	0.02	0.0002	0.005
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.43	0.002	g/hp-hr	0.002	0.00001	0.005
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.43	0.124	g/hp-hr	0.12	0.00006	0.005
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.43	0.005	g/hp-hr	0.005	0.00001	0.005

Table H.53 SO_2 Emissions from Fuel Burning Mobile Engines - Year 10

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 10		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 10	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.43	0.014	g/hp-hr	0.01	0.00001	0.005
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.43	0.045	g/hp-hr	0.05	0.00002	0.005
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.43	0.016	g/hp-hr	0.02	0.00002	0.006
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.43	0.053	g/hp-hr	0.05	0.00003	0.005
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.43	0.042	g/hp-hr	0.04	0.00002	0.005
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.43	0.021	g/hp-hr	0.02	0.00001	0.005
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.43	0.240	g/hp-hr	0.24	0.0001	0.005
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	0.54	0.017	g/hp-hr	0.003	0.00004	0.01
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	0.54	0.0025	g/hp-hr	0.0005	0.000006	0.002
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	0.54	0.017	g/hp-hr	0.002	0.00003	0.01
Total Emissions from Haul Truck Engines:										**0.29**	**0.004**	**0.96**
Total Emissions from Other Mobile Engines:										**0.71**	**0.002**	**0.57**
Total Emissions from All Mobile Engines:										**1.00**	**0.006**	**1.54**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.54 VOC Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.30	g/hp-hr	14.02	0.17	46.27
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.14	g/hp-hr	1.59	0.02	5.24
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.14	g/hp-hr	0.21	0.002	0.91
Crawler Dozers, D10T Class	3	580	0.70	17	6,090	hours	0.575	0.14	g/hp-hr	0.21	0.003	0.94
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.14	g/hp-hr	0.04	0.0005	0.18
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,175	hours	0.575	0.14	g/hp-hr	0.19	0.002	0.82
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.14	g/hp-hr	0.06	0.0008	0.28
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.14	g/hp-hr	0.07	0.0009	0.32
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	0.14	g/hp-hr	0.26	0.003	0.95
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.30	0.004	1.31
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.04	0.0005	0.19
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.30	g/hp-hr	1.40	0.02	6.15
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.09	0.001	0.39
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.09	0.001	0.39
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.07	0.0008	0.31
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.14	g/hp-hr	0.07	0.0008	0.31
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.14	g/hp-hr	0.10	0.001	0.44
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.14	g/hp-hr	0.01	0.0001	0.04

Table H.54 VOC Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.02	0.0003	0.10
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.18	0.002	0.81
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.14	g/hp-hr	0.11	0.001	0.50
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.403	g/mile	0.008	0.00009	0.03
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.403	g/mile	0.0001	0.000001	0.0004
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.01	0.0001	0.05
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.02	0.0002	0.08
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.20	g/hp-hr	0.04	0.0005	0.17
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.03	0.0004	0.14
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.02	0.0003	0.10
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.01	0.0002	0.06
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.01	0.0002	0.06
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.14	g/hp-hr	0.01	0.0001	0.04
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.14	g/hp-hr	0.01	0.0001	0.04
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.14	g/hp-hr	0.03	0.0003	0.12
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.14	g/hp-hr	0.009	0.0001	0.04
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.02	0.0003	0.10
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.20	g/hp-hr	0.01	0.0001	0.04

Table H.54 VOC Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.20	g/hp-hr	0.01	0.0001	0.05
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.20	g/hp-hr	0.02	0.0002	0.09
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.07	0.0008	0.31
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.403	g/mile	0.0003	0.000004	0.001
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.03	0.0003	0.12
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.007	0.00009	0.03
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.60	g/hp-hr	0.01	0.0001	0.05
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.14	g/hp-hr	0.03	0.0004	0.14
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.20	g/hp-hr	0.01	0.0002	0.06
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.34	0.004	1.51
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.403	g/mile	0.0008	0.000009	0.003
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.403	g/mile	0.005	0.00006	0.02
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.14	g/hp-hr	0.40	0.005	1.76
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.14	g/hp-hr	0.06	0.0007	0.02
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.14	g/hp-hr	0.12	0.001	0.03
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.403	g/mile	0.03	0.0005	0.08
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.403	g/mile	0.007	0.000007	0.001
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.403	g/mile	0.02	0.00006	0.02

Table H.54 VOC Emissions from Fuel Burning Mobile Engines - Year 10

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 10		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.403	g/mile	0.01	0.00002	0.008
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.403	g/mile	0.01	0.00001	0.003
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.403	g/mile	0.01	0.00002	0.008
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.403	g/mile	0.01	0.00002	0.002
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.403	g/mile	0.007	0.00001	0.003
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.403	g/mile	0.007	0.00002	0.006
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.403	g/mile	0.007	0.000003	0.0005
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	1.329	g/mile	0.08	0.001	0.35
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	1.329	g/mile	0.008	0.0001	0.04
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	1.329	g/mile	0.02	0.0002	0.09
Total Emissions from Haul Truck Engines:										**15.61**	**0.19**	**51.52**
Total Emissions from Other Mobile Engines:										**5.15**	**0.06**	**21.18**
Total Emissions from All Mobile Engines:										**20.76**	**0.25**	**72.70**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.55 CO_2 Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 10		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	497	g/hp-hr	23,241.93	278.90	76,698.38
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	497	g/hp-hr	5,578.06	66.94	18,407.61
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	497	g/hp-hr	734.01	8.81	3,214.95
Crawler Dozers, D10T Class	3	580	0.70	17	6,090	hours	0.575	497	g/hp-hr	762.55	9.15	3,339.96
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	497	g/hp-hr	146.56	1.76	641.95
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,175	hours	0.575	497	g/hp-hr	663.88	7.97	2,907.78
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	497	g/hp-hr	230.13	2.76	1,007.98
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	497	g/hp-hr	256.47	3.08	1,123.34
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	497	g/hp-hr	921.12	11.05	3,362.08
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	497	g/hp-hr	1,060.69	12.73	4,645.81
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	497	g/hp-hr	150.26	1.80	658.16
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	497	g/hp-hr	2,328.58	27.94	10,199.17
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	497	g/hp-hr	318.21	3.82	1,393.74
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	497	g/hp-hr	318.21	3.82	1,393.74
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	497	g/hp-hr	247.49	2.97	1,084.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	497	g/hp-hr	247.74	2.97	1,085.10
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	497	g/hp-hr	354.32	4.25	1,551.92
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	497	g/hp-hr	35.69	0.43	156.30

Table H.55 CO_2 Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 10		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	497	g/hp-hr	81.32	0.98	356.18
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	497	g/hp-hr	654.91	7.86	2,868.52
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	497	g/hp-hr	404.62	4.86	1,772.25
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.43	497	g/hp-hr	654.09	7.85	2,864.92
Tire Handler	1	90	0.75	18	6,570	hours	0.43	497	g/hp-hr	31.82	0.38	139.37
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	497	g/hp-hr	43.66	0.52	191.23
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	497	g/hp-hr	66.95	0.80	293.23
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	497	g/hp-hr	99.00	1.19	433.61
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	497	g/hp-hr	113.14	1.36	495.55
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	497	g/hp-hr	77.62	0.93	339.97
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	497	g/hp-hr	44.87	0.54	196.55
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	497	g/hp-hr	44.87	0.54	196.55
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	497	g/hp-hr	34.53	0.41	151.26
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	497	g/hp-hr	36.26	0.44	158.82
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	497	g/hp-hr	100.44	1.21	439.91
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	497	g/hp-hr	30.63	0.37	134.15
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	497	g/hp-hr	79.56	0.95	348.47
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	497	g/hp-hr	24.26	0.29	106.24

Table H.55 CO_2 Emissions from Fuel Burning Mobile Engines - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 10		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	497	g/hp-hr	30.56	0.37	133.86
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	497	g/hp-hr	48.51	0.58	212.48
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	497	g/hp-hr	247.49	2.97	1,084.02
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.43	497	g/hp-hr	88.39	1.06	387.15
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	497	g/hp-hr	94.40	1.13	413.48
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	497	g/hp-hr	26.52	0.32	116.15
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	497	g/hp-hr	8.52	0.10	37.32
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	497	g/hp-hr	113.80	1.37	498.43
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	497	g/hp-hr	36.01	0.43	157.74
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	497	g/hp-hr	1,222.50	14.67	5,354.57
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.43	497	g/hp-hr	159.10	1.91	696.87
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.43	497	g/hp-hr	361.34	4.34	1,582.67
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	497	g/hp-hr	1,424.15	17.09	6,237.78
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	497	g/hp-hr	219.26	2.63	54.82
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	497	g/hp-hr	438.53	5.26	109.63
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.43	497	g/hp-hr	212.14	1.97	720.72
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.43	497	g/hp-hr	212.14	0.11	9.10
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.43	497	g/hp-hr	212.14	0.60	220.71

Table H.55 CO_2 Emissions from Fuel Burning Mobile Engines - Year 10

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 10		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.43	497	g/hp-hr	212.14	0.22	80.92
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.43	497	g/hp-hr	212.14	0.11	24.86
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.43	497	g/hp-hr	235.71	0.22	80.78
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.43	497	g/hp-hr	212.14	0.11	21.20
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.43	497	g/hp-hr	212.14	0.11	27.09
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.43	497	g/hp-hr	212.14	0.15	52.98
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.43	497	g/hp-hr	212.14	0.11	4.71
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	0.54	1.08	lb/hp-hr	51.03	0.61	223.51
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	0.54	1.08	lb/hp-hr	51.03	0.61	223.51
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	0.54	1.08	lb/hp-hr	36.45	0.44	159.65
Total Emissions from Haul Truck Engines:										**28,820.00**	**345.84**	**95,105.99**
Total Emissions from Other Mobile Engines:										**18,201.00**	**196.37**	**68,179.51**
Total Emissions from All Mobile Engines:										**47,021.00**	**542.21**	**163,285.50**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.56 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 10		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 10	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.00003	g/hp-hr	0.005	0.00006	0.02
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.00003	g/hp-hr	0.001	0.00001	0.004
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.00005	g/hp-hr	0.0001	0.000002	0.0006
Crawler Dozers, D10T Class	3	580	0.70	17	6,090	hours	0.575	0.00003	g/hp-hr	0.00009	0.000001	0.0004
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.00003	g/hp-hr	0.00002	0.0000002	0.00007
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,175	hours	0.575	0.00003	g/hp-hr	0.00008	0.000001	0.0004
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.00004	g/hp-hr	0.00003	0.0000003	0.0001
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.00005	g/hp-hr	0.00005	0.0000006	0.0002
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	0.00007	g/hp-hr	0.0003	0.000004	0.001
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.0002	0.000002	0.0007
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00002	0.0000003	0.0001
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.00003	g/hp-hr	0.0002	0.000003	0.0009
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00005	0.0000006	0.0002
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00005	0.0000006	0.0002
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00004	0.0000005	0.0002
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.00003	g/hp-hr	0.00003	0.0000003	0.0001
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.00003	g/hp-hr	0.00005	0.0000007	0.0002
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.00003	g/hp-hr	0.000007	0.00000008	0.00003

Table H.56 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 10		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 10	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00001	0.0000001	0.00005
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.00007	0.0000009	0.0003
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.00003	g/hp-hr	0.00008	0.0000009	0.0003
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.0001	0.000001	0.0004
Tire Handler	1	90	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000007	0.00000009	0.00003
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.00006	g/hp-hr	0.00003	0.0000003	0.0001
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00002	0.0000002	0.00008
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000009	0.0000001	0.00004
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.00003	g/hp-hr	0.00001	0.0000001	0.00005
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.00003	g/hp-hr	0.00001	0.0000001	0.00005
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.00003	g/hp-hr	0.00002	0.0000002	0.00008
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.00003	g/hp-hr	0.000008	0.0000001	0.00003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000009	0.0000001	0.00004
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000003	0.00000003	0.00001

Table H.56 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 10												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 10		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 10	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000003	0.00000004	0.00001
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00004	0.0000005	0.0002
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00001	0.0000002	0.00006
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00001	0.0000002	0.00006
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.000004	0.00000005	0.00002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.000001	0.00000002	0.000006
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.40	0.00003	g/hp-hr	0.00002	0.0000002	0.00008
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.00003	g/hp-hr	0.000008	0.00000009	0.00003
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.0001	0.000002	0.0006
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00002	0.0000003	0.0001
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00005	0.0000007	0.0002
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.00003	g/hp-hr	0.0002	0.000002	0.0008
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.00043	g/hp-hr	0.0002	0.000002	0.00005
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.0004	g/hp-hr	0.0004	0.000005	0.00009
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.43	0.00003	g/hp-hr	0.00003	0.0000003	0.0001
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.43	0.002	g/hp-hr	0.002	0.000001	0.0001
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.43	0.0001	g/hp-hr	0.0001	0.0000003	0.0001

Table H.56 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 10

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 10		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 10	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.43	0.0003	g/hp-hr	0.0003	0.0000003	0.0001
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.43	0.0009	g/hp-hr	0.0009	0.0000005	0.0001
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.43	0.0003	g/hp-hr	0.0003	0.0000003	0.0001
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.43	0.001	g/hp-hr	0.001	0.0000005	0.0001
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.43	0.0008	g/hp-hr	0.0008	0.0000004	0.0001
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.43	0.0004	g/hp-hr	0.0004	0.0000003	0.0001
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.43	0.005	g/hp-hr	0.005	0.000002	0.0001
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	0.54	--	--	--	--	--
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	0.54	--	--	--	--	--
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	0.54	--	--	--	--	--
Total Emissions from Haul Truck Engines:										**0.006**	**0.00007**	**0.02**
Total Emissions from Other Mobile Engines:										**0.01**	**0.00004**	**0.01**
Total Emissions from All Mobile Engines:										**0.02**	**0.0001**	**0.03**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.57 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 10													
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 10			Soot Emissions - Year 10		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.24	1.68	0.02	5.55	5.32	0.06	17.57
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.24	0.08	0.001	0.26	0.25	0.003	0.84
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.24	0.01	0.0001	0.05	0.03	0.0004	0.15
Crawler Dozers, D10T Class	3	580	0.70	17	6,090	hours	0.24	0.004	0.00004	0.02	0.01	0.0001	0.05
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.24	0.0007	0.000008	0.003	0.002	0.00003	0.010
Rubber Tired Dozers, 834H Class	3	498	0.70	17	6,175	hours	0.24	0.003	0.00004	0.01	0.01	0.0001	0.04
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.24	0.001	0.00001	0.005	0.003	0.00004	0.02
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.24	0.001	0.00001	0.005	0.004	0.00005	0.02
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.24	0.01	0.0002	0.05	0.04	0.0005	0.15
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.24	0.02	0.0002	0.067	0.05	0.0006	0.21
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.24	0.0007	0.000009	0.003	0.002	0.00003	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.24	0.17	0.002	0.74	0.53	0.006	2.34
Stemming Truck	2	450	0.75	18	6,570	hours	0.24	0.002	0.00002	0.007	0.005	0.00006	0.02
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.24	0.002	0.00002	0.007	0.005	0.00006	0.02
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.44	0.002	0.00003	0.01	0.003	0.00003	0.01
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.24	0.001	0.00001	0.005	0.004	0.00005	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.24	0.002	0.00002	0.007	0.005	0.00006	0.02
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.44	0.0003	0.000004	0.001	0.0004	0.000005	0.002

Table H.57 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 10													
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 10			Soot Emissions - Year 10		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.24	0.0004	0.000005	0.002	0.001	0.00001	0.005
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.24	0.009	0.0001	0.041	0.03	0.0004	0.13
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.24	0.002	0.00002	0.008	0.006	0.00007	0.03
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.44	0.002	0.00002	0.008	0.002	0.00003	0.01
Tire Handler	1	90	0.75	18	6,570	hours	0.51	0.00002	0.0000003	0.0001	0.00002	0.0000003	0.0001
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.51	0.0004	0.000005	0.002	0.0004	0.000005	0.002
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.44	0.0006	0.000007	0.003	0.0007	0.000009	0.003
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.5	0.002	0.00002	0.009	0.002	0.00002	0.009
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.24	0.0005	0.000007	0.002	0.002	0.00002	0.008
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.44	0.0007	0.000008	0.003	0.0009	0.00001	0.004
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.51	0.0005	0.000005	0.002	0.0004	0.000005	0.002
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.44	0.0004	0.000005	0.002	0.0005	0.000006	0.002
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.44	0.0003	0.000004	0.001	0.0004	0.000005	0.002
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.44	0.0003	0.000004	0.001	0.0004	0.000005	0.002
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.24	0.0005	0.000006	0.002	0.002	0.00002	0.007
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.44	0.0003	0.000003	0.001	0.0003	0.000004	0.001
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.5	0.0008	0.00001	0.003	0.0008	0.00001	0.003
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.5	0.0005	0.000006	0.002	0.0005	0.000006	0.002

Table H.57 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 10													
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 10			Soot Emissions - Year 10		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.48	0.0006	0.000007	0.003	0.0006	0.000008	0.003
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.5	0.001	0.00001	0.004	0.001	0.00001	0.004
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.44	0.002	0.00003	0.01	0.003	0.00003	0.01
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.24	0.00004	0.0000004	0.0002	0.0001	0.000001	0.0005
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.24	0.0005	0.000005	0.002	0.001	0.00002	0.006
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.24	0.0001	0.000002	0.0006	0.0004	0.000005	0.002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.24	0.001	0.00001	0.005	0.004	0.00005	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.24	0.0005	0.000007	0.002	0.002	0.00002	0.008
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.48	0.0007	0.000008	0.003	0.0007	0.000009	0.003
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.24	0.02	0.0002	0.08	0.06	0.0007	0.25
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.24	0.00009	0.000001	0.0004	0.0003	0.000003	0.001
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.24	0.0006	0.000007	0.003	0.002	0.00002	0.008
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.24	0.01	0.0002	0.06	0.04	0.0005	0.19
Storm Water Pond Pump	1	200	1.00	24	500	hours	0.5	0.002	0.00003	0.0005	0.002	0.00003	0.0005
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	0.5	0.004	0.00005	0.001	0.004	0.00005	0.001
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.24	0.003	0.00006	0.009	0.01	0.0002	0.03
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.24	0.0002	0.0000006	0.00009	0.0008	0.000002	0.0003
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.24	0.002	0.000008	0.003	0.008	0.00003	0.009

Table H.57 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 10

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 10			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 10			Soot Emissions - Year 10		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.24	0.002	0.000003	0.001	0.005	0.000009	0.003
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.24	0.001	0.000001	0.0003	0.005	0.000004	0.001
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.24	0.002	0.000003	0.0009	0.005	0.000008	0.003
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.24	0.001	0.000002	0.0003	0.004	0.000007	0.0008
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.44	0.001	0.000002	0.0006	0.001	0.000003	0.0008
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.44	0.001	0.000005	0.001	0.002	0.000006	0.002
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.44	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	--	--	--	--	--	--	--
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	--	--	--	--	--	--	--
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	--	--	--	--	--	--	--
Total Emissions from Haul Truck Engines:											**5.58**	**0.07**	**18.41**
Total Emissions from Other Mobile Engines:											**0.92**	**0.01**	**3.86**
Total Emissions from All Mobile Engines:											**6.50**	**0.08**	**22.27**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

YEAR 15

Table H.58 Particulate Matter Emission Factors - Year 15

Process Code	Process Description	SCC Code	Emission Factors				Prod. Rate Units	Particulate Matter Emission Factor Inputs [a]																							Reference
			PM/TSP	PM_{10}	$PM_{2.5}$	Units		k (PM/TSP)	k (PM_{10})	k ($PM_{2.5}$)	A (ft^2)	U (mph)	M (%)	W (tons)	s (%)	sL (g/m^2)	S (mph)	P (days/yr)	a (PM/TSP)	a (PM_{10})	a ($PM_{2.5}$)	b (PM/TSP)	b (PM_{10})	b ($PM_{2.5}$)	u^*	u_t^*	e	f (%)	PE	
Drilling	Drilling	3-05-020-10	1.30	0.43	0.08	lb/hole	holes	1	0.33	0.06																					AP-42, Section 11.9, Table 11.9-4 (10/98)
Blast	Blasting	3-05-020-09	328.26	170.69	9.85	lb/blast	blasts	1	0.52	0.03	81,920																				AP-42, Section 11.9, Table 11.9-1 (10/98)
Loading	Loading	3-03-024-08	0.0007	0.0003	0.00005	lb/ton	tons	0.74	0.35	0.053		4.14	4																		AP-42, Section 13.2.4, Expression 1 (11/06)
HaulingHD	Haul Trucks - Hourly/Daily	3-05-020-11	21.25	5.46	0.55	lb/VMT	VMT	4.9	1.5	0.15				305	5.0				0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expression 1a (11/06)
HaulingA	Haul Trucks - Annual	3-05-020-11	17.70	4.55	0.45	lb/VMT	VMT	4.9	1.5	0.15				305	5.0			61	0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expressions 1a and 2 (11/06)
Bldzrs	Bulldozers	3-05-020-99	2.82	0.43	0.30	lb/hr	hrs	5.7	0.75	0.60			4		2.5				1.2	1.5	1.2	1.3	1.4	1.3							AP-42, Section 11.9, Table 11.9-1 (10/98)
SupVehUY15H	Support Vehicular Traffic on Unpaved Roads - Year 15 Hourly	3-03-999-99	8.89	2.29	0.23	lb/VMT	VMT	4.9	1.5	0.15				44.0	5.0				0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expression 1a (11/06)
SupVehUY15D	Support Vehicular Traffic on Unpaved Roads - Year 15 Daily	3-03-999-99	8.78	2.26	0.23	lb/VMT	VMT	4.9	1.5	0.15				42.8	5.0				0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expression 1a (11/06)
SupVehUY15A	Support Vehicular Traffic on Unpaved Roads - Year 15 Annual	3-03-999-99	7.31	1.88	0.19	lb/VMT	VMT	4.9	1.5	0.15				42.7	5.0			61	0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expressions 1a and 2 (11/06)
SupVehPEY15H	Support Vehicular Traffic on Paved Entrance Road - Year 15 Hourly	3-03-999-99	0.05	0.01	0.003	lb/VMT	VMT	0.011	0.0022	0.00054				19.8		0.2															AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPEY15D	Support Vehicular Traffic on Paved Entrance Road - Year 15 Daily	3-03-999-99	0.05	0.01	0.002	lb/VMT	VMT	0.011	0.0022	0.00054				18.7		0.2															AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPEY15A	Support Vehicular Traffic on Paved Entrance Road - Year 15 Annual	3-03-999-99	0.04	0.008	0.002	lb/VMT	VMT	0.011	0.0022	0.00054				16.5		0.2		61													AP-42, Section 13.2.1, Expression 2 (01/11)
SupVehPIY15H	Support Vehicular Traffic on Paved Industrial Roads - Year 15 Hourly	3-03-999-99	1.23	0.25	0.06	lb/VMT	VMT	0.011	0.0022	0.00054				15.5		8.2															AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPIY15D	Support Vehicular Traffic on Paved Industrial Roads - Year 15 Daily	3-03-999-99	1.01	0.20	0.05	lb/VMT	VMT	0.011	0.0022	0.00054				12.8		8.2															AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPIY15A	Support Vehicular Traffic on Paved Industrial Roads - Year 15 Annual	3-03-999-99	0.80	0.16	0.04	lb/VMT	VMT	0.011	0.0022	0.00054				10.7		8.2		61													AP-42, Section 13.2.1, Expression 2 (01/11)
WtrTrksHD	Water Trucks - Hourly/Daily	3-05-020-99	17.06	4.38	0.44	lb/VMT	VMT	4.9	1.5	0.15				187.4	5.0				0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expression 1a (11/06)
WtrTrksA	Water Trucks - Annual	3-05-020-99	14.21	3.65	0.37	lb/VMT	VMT	4.9	1.5	0.15				187.4	5.0			61	0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expressions 1a and 2 (11/06)
GradersY15	Graders - Year 15	3-05-020-99	2.05	0.71	0.06	lb/VMT	VMT	1	0.60	0.031							4.83		0.040	0.051	0.040	2.5	2.0	2.5							AP-42, Section 11.9, Table 11.9-1 (10/98)
TrMlyCncPrt	Molybdnum Concentrate Transfer (Protected)	3-03-024-08	0.00002	0.00001	0.000002	lb/ton	tons	0.74	0.35	0.053		1.3	15																		AP-42, Section 13.2.4, Expression 1 (11/06)
DTrMlyCncPrt	Dried Molybdenum Concentrate Transfer (Protected)	3-03-024-08	0.00004	0.00002	0.000003	lb/ton	tons	0.74	0.35	0.053		1.3	10																		AP-42, Section 13.2.4, Expression 1 (11/06)
DTrMlyCnc	Dried Molybdenum Concentrate Transfer (Unprotected)	3-03-024-08	0.0003	0.0002	0.00002	lb/ton	tons	0.74	0.35	0.053		6.21	10																		AP-42, Section 13.2.4, Expression 1 (11/06)
TrCuCncPrt	Copper Concentrate Transfer (Protected)	3-03-024-08	0.00004	0.00002	0.000003	lb/ton	tons	0.74	0.35	0.053		1.3	10																		AP-42, Section 13.2.4, Expression 1 (11/06)
TrCuCnc	Copper Concentrate Loadout	3-03-024-08	0.0003	0.0002	0.00002	lb/ton	tons	0.74	0.35	0.053		6.21	10																		AP-42, Section 13.2.4, Expression 1 (11/06)
FiltTailPrt	Filtered Tailings Transfer (Protected)	3-03-024-08	0.00002	0.00001	0.000002	lb/ton	tons	0.74	0.35	0.053		1.3	15																		AP-42, Section 13.2.4, Expression 1 (11/06)
FiltTail	Filtered Tailings Transfer (Unprotected)	3-03-024-08	0.0002	0.00009	0.00001	lb/ton	tons	0.74	0.35	0.053		6.21	15																		AP-42, Section 13.2.4, Expression 1 (11/06)
CrushP	Primary Crushing - High Moisture Ore	3-03-024-05	0.02	0.009	0.002	lb/ton	tons			0.185																					AP-42, Section 11.24, Table 11.24-2 (08/82) and 11.19.2-2 (08/04)
CrushS	Secondary Crushing - High Moisture Ore	3-03-024-06	0.05	0.02	0.004	lb/ton	tons			0.185																					AP-42, Section 11.24, Table 11.24-2 (08/82) and 11.19.2-2 (08/04)
CrushT	Tertiary Crushing - High Moisture Ore	3-03-024-07	0.06	0.02	0.004	lb/ton	tons			0.185																					AP-42, Section 11.24, Table 11.24-2 (08/82) and 11.19.2-2 (08/04)
Screen	Screening	3-05-020-02	0.025	0.0087	0.0006	lb/ton	tons			0.068																					AP-42, Section 11.19, Table 11.19.2-2 (08/04)
MolyDry	Drying of High Moisture Ore	3-03-024-11	19.70	12.00	5.91	lb/ton	tons			0.30																					AP-42, Section 11.24, Table 11.24-2 (08/82) and Appendix B.2 (09/96)

Table H.58 Particulate Matter Emission Factors - Year 15

Process Code	Process Description	SCC Code	Emission Factors				Prod. Rate Units	Particulate Matter Emission Factor Inputs [a]																						Reference
			PM/TSP	PM_{10}	$PM_{2.5}$	Units		k (PM/TSP)	k (PM_{10})	k ($PM_{2.5}$)	A (ft^2)	U (mph)	M (%)	W (tons)	s (%)	sL (g/m^2)	S (mph)	P (days/yr)	a (PM/TSP)	a (PM_{10})	a ($PM_{2.5}$)	b (PM/TSP)	b (PM_{10})	b ($PM_{2.5}$)	u^*	u_t^*	e	f (%)	PE	
TrStnPrt	Material Transfer (Protected)	3-03-024-08	0.0002	0.00007	0.00001	lb/ton	tons	0.74	0.35	0.053		1.3	4																	AP-42, Section 13.2.4, Expression 1 (11/06)
TrStnUnp	Material Transfer (Unprotected)	3-03-024-08	0.001	0.0006	0.00009	lb/ton	tons	0.74	0.35	0.053		6.21	4																	AP-42, Section 13.2.4, Expression 1 (11/06)
LimeLd	Lime Product Loading, Enclosed Truck	3-05-016-26	0.61	0.29	0.04	lb/ton	tons	1	0.47	0.07																				AP-42, Section 11.17, Table 11.17-4 (02/98) and AP-42, Section 13.2.4 (11/06)
LimeSlk	Lime Slaking	3-05-016-09	8.00	8.00	8.00	lb/ton	tons																							AP-42, Section 11.17, Table 11.17-2 (02/98), Scrubber CE = 99%
ReagTr	Miscellaneous Reagent Material Transfer	3-03-024-04	0.008	0.004	0.0006	lb/ton	tons	0.74	0.35	0.053		6.21	1																	AP-42, Section 13.2.4, Expression 1 (11/06)
ICDE1	Internal Combustion Diesel Engine 37 ≤ kW > 75	2-02-001-02	0.40	0.40	0.40	g/kW-hr	hours	1	1	1																				NSPS Emission Standard
ICDE2	Internal Combustion Diesel Engine 225 ≤ kW > 450	2-02-001-02	0.20	0.20	0.20	g/kW-hr	hours	1	1	1																				NSPS Emission Standard
ICDE3	Internal Combustion Diesel Engine > 560 kW	2-02-001-02	0.20	0.20	0.20	g/kW-hr	hours	1	1	1																				NSPS Emission Standard
DFB	Diesel (Distillate Oil) Fired Boiler <100 MMBtu/hr	1-02-005-03	3.30	2.30	1.54	lb/1000 gal	hours	1	0.5	0.12																				AP-42, Section 1.3, Tables 1.3-1, 1.3-2 and 1.3-6 (09/98)
CADC	Crushing Area Dust Collector	none	1.42	0.64	0.12	lb/hr	hours	2.22	1.00	0.18																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
SARTDC	Stockpile Area and Reclaim Tunnel Dust Collector	none	3.11	1.47	0.22	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
SFCDC	Stockpile Feed Conveyor Transfer Point Dust Collector	none	0.76	0.36	0.05	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
PCADC	Pebble Crusher Area Dust Collector	none	0.96	0.32	0.06	lb/hr	hours	2.99	1.00	0.18																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
CCDC	Copper Concentrate Dust Collectors	none	3.76	1.78	0.27	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
MS/EP	Molybdenum Scrubber / Electrostatic Precipitator	none	0.015	0.014	0.013	lb/hr	hours	1.10	1.00	0.94																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
MDC	Molybdenum Dust Collector	none	0.112	0.053	0.008	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
LDC	Laboratory Dust Collectors	none	0.008	0.005	0.002	gr/dscf	dscf	1.65	1.00	0.49																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
SFDC	SAG Feed Conveyor Dust Collector	none	0.97	0.46	0.07	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
WindROM	Wind Erosion - Run of Mine Stockpile	3-03-888-01	0.21	0.11	0.02	ton/acre-yr	acres	1	0.5	0.075					2.5												38	4.77	22	FDEMI[b] (07/83), p. 51-57, MRI Equation, AP-42, Section 13.2.5 (11/06) and Table 13.2.4-1 (11/06)
WindCvd	Wind Erosion - Covered Stockpile	3-03-888-01	0	0	0	ton/acre-yr	acres																							Assumed
TailStrg	Wind Erosion - Tailings Storage	3-03-888-01	0.02	0.01	0.002	ton/acre-yr	acres	1	0.5	0.075															0.57	0.43				AP-42, Section 13.2.5 (11/06)

[a] k = particle size multiplier, A = horizonal area of blasting surface, U = mean wind speed, M = material moisture content, W = mean vehicle weight, s = surface material silt content, sL = road surface silt loading, S = mean vehicle speed, P = number of days per year with at least 0.01 inches of precipitation, a = constant based on particle size, b = constant based on particle size, u^* = friction velocity, u_t^* = threshold friction velocity, e = surface erodibility, f = percentage of time the wind speed exceeds 12 mph, PE = Thornthwaite's Precipitation-Evaporation Index

[b] FDEMI = *Fugitive Dust Emission Factors for the Mining Industry*

Table H.59 Gaseous Emission Factors - Year 15

Process Code	Process Description	SCC Code	Emission Factor									Prod. Rate Units	Reference
			CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	Units		
Blast	Blasting	3-05-020-09	67.00	17.00	2.00	0	0	566	0.02	0.005	lb/tons ANFO	tons ANFO	AP-42 Section 13.3, Table 13.3-1 (02/80) and 40 CFR 98, Tables C-1 and C-2[a]
SX	Solvent Extraction Mixers and Settlers	4-90-001-99	0	0	0	9.43E-05	0	0	0	0	lb/hr-ft^2	hours	Hydrometallurgy of Copper (Control Efficiency of 66%)
EW	Electrowining Tankhouse	none	0	0	0	0	1.57E-04	0	0	0	lb/hr-ft^2	hours	Applied Environmental Consultants - Report[b]
ICDE1	Internal Combustion Diesel Engine 37 ≤ kW > 75	2-02-001-02	5.0	4.4	0.0066	0.3	0	694	0.03	0.006	g/kW-hr	hours	NSPS Emission Standard, Complete Sulfur Conversion[c], and 40 CFR 98, Tables C-1 and C-2
ICDE2	Internal Combustion Diesel Engine 225 ≤ kW > 450	2-02-001-02	3.5	3.7	0.0066	0.3	0	694	0.03	0.006	g/kW-hr	hours	NSPS Emission Standard, Complete Sulfur Conversion[c], and 40 CFR 98, Tables C-1 and C-2
ICDE3	Internal Combustion Diesel Engine > 560 kW	2-02-001-02	3.5	6.0	0.0066	0.40	0	694	0.03	0.006	g/kW-hr	hours	NSPS Emission Standard, Complete Sulfur Conversion[c], and 40 CFR 98, Tables C-1 and C-2
DFB	Diesel (Distillate Oil) Fired Boiler <100 MMBtu/hr	1-02-005-03	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	lb/1000 gal	hours	AP-42 Section 1.3, Tables 1.3-1 and 1.3-3 (05/10)[c] and 40 CFR 98, Tables C-1 and C-2
C7DT	C7 Distribution Tank	4-03-010-19	0	0	0	1.08E-01	0	0	0	0	lb/hr	hours	EPA Tanks Program 4.0[d]
MST	MIBC Storage Tank	4-90-999-98	0	0	0	3.53E-03	0	0	0	0	lb/hr	hours	EPA Tanks Program 4.0[d]
DFSTHV	Diesel Fuel Storage Tank - Heavy Vehicles	4-03-010-19	0	0	0	1.39E-02	0	0	0	0	lb/hr	hours	EPA Tanks Program 4.0[d]

[a] Assumes a fuel oil to ammonium nitrate ratio of 9.0%.

[b] "Measurement of Sulfuric Acid Mist Emissions from the Cyprus Twin Buttes Copper Company Electrowinning Tankhouse" (02/93).

[c] SO_2 emissions are calculated using a sulfur content of 0.0015% for diesel fuel.

[d] Assumes continuous operation.

Table H.60 Particulate Matter Control Efficiencies - Year 15

Control Code	Control Description	Pick-up Efficiency (%)	Control Efficiency (%)	Reference
CADC	Crushing Area Dust Collector (PC-CADC)	100%	--	Assumed
SARTDC	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	100%	--	Assumed
SFCDC	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	100%	--	Assumed
PCADC	Pebble Crusher Area Dust Collector (PC-PCADC)	100%	--	Assumed
CCDC	Copper Concentrate Dust Collectors (PC-CCDC1/CCDC2)	100%	--	Assumed
MS/EP	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	100%	--	Assumed
LSV	Lime Storage Bin Vent (PC-LSBV)	100%	90%	Vendor Specification
LSS	Lime Slaker Scrubber (PC-LSS)	100%	99%	AP-42, Table B.2-3 (09/96)
SMSV	Sodium Metasilicate Storage Bin Vent (PC-SMSBV)	100%	90%	Vendor Specification
CVS	EW Cell Ventilation Scrubbers (PC-CVS)	100%	99%	Engineering Design
MDC	Molybdenum Dust Collector (PC-MDC)	100%	--	Assumed
SFDC	SAG Feed Conveyor Dust Collector (PC-SFDC)	100%	--	Assumed
HaulRdUI	Road Watering (Inside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
HaulRdUO	Road Watering (Outside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
HaulRdWTI	Road Watering - Water Trucks (Inside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
HaulRdWTO	Road Watering - Water Trucks (Outside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
Water	Addition of Process Water	N/A	100%	Assumed
WSpry	Water Spray at Unprotected Points	N/A	82.5%	Average Value of AP-42, p. 11.19.1-5 (11/95)
Wet	Wet Process	N/A	100%	Assumed
Clean	Wet, Cleaned Ore (no fines)	N/A	100%	Assumed
Enclosed	Totally Enclosed Transfer Point	N/A	100%	Assumed
UndrGrd	Underground Transfer Point	N/A	100%	Assumed
None	No Pollution Controls	0%	0%	Assumed

[a] EPA Document gives methods for calculating efficiencies - pages 5-9 to 5-14

Table H.61 Annual Particulate Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 15	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 15		PM_{10} Emissions (tpy) - Year 15		$PM_{2.5}$ Emissions (tpy) - Year 15	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Mining																		
MN01	Drilling	Drilling	3-05-020-10	F	20,160	holes	1.30	0.43	0.08	lb/hole	None	0%	13.10	13.10	4.37	4.37	0.81	0.81
MN02	Blasting	Blast	3-05-020-09	F	252	blasts	328.26	170.69	9.85	lb/blast	None	0%	41.36	41.36	21.51	21.51	1.24	1.24
MN03	Loading Concentrate Ore	Loading	3-03-024-08	F	27,375,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	9.60	9.60	4.54	4.54	0.69	0.69
MN04	Loading Leach Ore	Loading	3-03-024-08	F	0	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0	0	0	0	0	0
MN05	Loading Waste Rock	Loading	3-03-024-08	F	52,012,500	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	18.24	18.24	8.63	8.63	1.31	1.31
MN06a	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Inside the Pit)	HaulingA	3-05-020-11	F	610,545	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUI	90%	5,401.91	540.19	1,388.03	138.80	138.80	13.88
MN06b	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Outside the Pit)	HaulingA	3-05-020-11	F	128,082	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUO	90%	1,133.23	113.32	291.19	29.12	29.12	2.91
MN07a	Hauling Leach Ore to Leach Pad (Inside the Pit)	HaulingA	3-05-020-11	F	0	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUI	90%	0	0	0	0	0	0
MN07b	Hauling Leach Ore to Leach Pad (Outside the Pit)	HaulingA	3-05-020-11	F	0	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUO	90%	0	0	0	0	0	0
MN08a	Hauling Waste Rock to Waste Rock Storage Area (Inside the Pit)	HaulingA	3-05-020-11	F	600,508	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUI	90%	5,313.10	531.31	1,365.21	136.52	136.52	13.65
MN08b	Hauling Waste Rock to Waste Rock Storage Area (Outside the Pit)	HaulingA	3-05-020-11	F	857,103	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUO	90%	7,583.37	758.34	1,948.57	194.86	194.86	19.49
MN09	Unloading Concentrate Ore to Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	2,737,500	tons	0.001	0.0006	0.00009	lb/ton	None	0%	1.63	1.63	0.77	0.77	0.12	0.12
MN10	Unloading Leach Ore to Leach Pad	TrStnUnp	3-03-024-08	F	0	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0	0	0	0	0	0
MN11	Unloading Waste Rock to Waste Rock Storage Area	TrStnUnp	3-03-024-08	F	52,012,500	tons	0.001	0.0006	0.00009	lb/ton	None	0%	30.90	30.90	14.62	14.62	2.21	2.21
MN12	Bulldozer Use	Bldzrs	3-05-020-99	F	51,795	hrs	2.82	0.43	0.30	lb/hr	None	0%	73.11	73.11	11.02	11.02	7.68	7.68
MN13a	Water Truck Use (Inside the Pit)	WtrTrksA	3-05-020-99	F	78,853	VMT	14.21	3.65	0.37	lb/VMT	HaulRdWTI	90%	560.35	56.04	143.98	14.40	14.40	1.44
MN13b	Water Truck Use (Outside the Pit)	WtrTrksA	3-05-020-99	F	64,147	VMT	14.21	3.65	0.37	lb/VMT	HaulRdWTO	90%	455.84	45.58	117.13	11.71	11.71	1.17
MN14	Grader Use	GradersY15	3-05-020-99	F	87,000	VMT	2.05	0.71	0.06	lb/VMT	None	0%	89.36	89.36	31.10	31.10	2.77	2.77
MN15a	Support Vehicle Use on Unpaved Roads (Inside the Pit)	SupVehUY15A	3-03-999-99	F	272,361	VMT	7.31	1.88	0.19	lb/VMT	HaulRdUI	90%	995.24	99.52	255.73	25.57	25.57	2.56
MN15b	Support Vehicle Use on Unpaved Roads (Outside the Pit)	SupVehUY15A	3-03-999-99	F	272,361	VMT	7.31	1.88	0.19	lb/VMT	HaulRdUO	90%	995.24	99.52	255.73	25.57	25.57	2.56
M16a	Support Vehicle Use on the Paved Entrance Road (within the process area boundary)	SupVehPEY15A	3-03-999-99	F	74,399	VMT	0.04	0.008	0.002	lb/VMT	None	0%	1.58	1.58	0.32	0.32	0.08	0.08
M16b	Support Vehicle Use on the Paved Entrance Road (outside of the process area boundary)	SupVehPEY15A	3-03-999-99	F	322,577	VMT	0.04	0.008	0.002	lb/VMT	None	0%	6.84	6.84	1.37	1.37	0.34	0.34
M16c	Support Vehicle Use on Paved Industrial Roads	SupVehPIY15A	3-03-999-99	F	185,705	VMT	0.80	0.16	0.04	lb/VMT	None	0%	74.37	74.37	14.87	14.87	3.65	3.65
Primary Crushing, Conveying, Coarse Ore Storage, and Reclaim Conveying																		
PC01	Wind Erosion of the Run of Mine Stockpile	WindROM	3-03-888-01	F	26	acres	0.21	0.11	0.02	ton/acre-yr	None	0%	5.43	5.43	2.72	2.72	0.41	0.41
PC02	Unloading to Primary Crusher Dump Hopper (H-CDp) from Haul Trucks or Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	27,375,000	tons	0.001	0.0006	0.00009	lb/ton	WSpry	82.5%	16.27	2.85	7.69	1.35	1.16	0.20
PC03	Primary Crusher (PCr)	CrushP	3-03-024-05	NF	43,362,000	tons	0.02	0.009	0.002	lb/ton	CADC	100%	433.62	0	195.13	0	36.14	0
PC04	Primary Crusher (PCr) to Crusher Discharge Hopper (H-CDs)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
PC05	Crusher Discharge Hopper (H-CDs) to Crusher Discharge Feeder (F-CD)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	3.38	0	1.60	0	0.24	0
PC06	Crusher Discharge Feeder (F-CD) to Stockpile Feed Conveyor No. 1 (CV-SF1)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	3.38	0	1.60	0	0.24	0

Table H.61 Annual Particulate Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 15	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 15		PM_{10} Emissions (tpy) - Year 15		$PM_{2.5}$ Emissions (tpy) - Year 15	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
PC07	Stockpile Feed Conveyor No. 1 (CV-SF1) to Stockpile Feed Conveyor No. 2 (CV-SF2)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SFCDC	100%	3.38	0	1.60	0	0.24	0
PC08	Stockpile Feed Conveyor No. 2 (CV-SF2) to Covered Coarse Ore Stockpile	TrStnPrt	3-03-024-08	F	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	3.38	0	1.60	0	0.24	0
PC09	Wind Erosion of the Coarse Ore Stockpile	WindCvd	3-03-888-01	F	5	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
PC10	Coarse Ore Stockpile to Reclaim Feeders (F-R1/R4)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	UndrGrd [a]	100%	0	0	0	0	0	0
PC11	Reclaim Feeders (F-R1/R4) to Reclaim Conveyor (CV-R)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	3.38	0	1.60	0	0.24	0
PC12	Reclaim Conveyor (CV-R) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	3.38	0	1.60	0	0.24	0
PC13	Pebble Conveyor No. 3 (CV-Pb3) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.49	0	0.23	0	0.03	0
PC14	SAG Mill Feed Conveyor (CV-SMF) to SAG Mill (M-SAG)	TrStnPrt	3-03-024-08	NF	49,631,400	tons	0.0002	0.00007	0.00001	lb/ton	Water [a]	100%	0	0	0	0	0	0
Milling																		
M01	SAG Mill (M-SAG)	CrushS	3-03-024-06	NF	49,669,200	tons	0.05	0.02	0.004	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M02	SAG Mill (M-SAG) to Trommel Screen (Sn-T)	TrStnPrt	3-03-024-08	NF	49,669,200	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M03	Trommel Screen (Sn-T)	Screen	3-05-020-02	NF	49,669,200	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M04	Trommel Screen (Sn-T) to Pebble Conveyor No. 1 (CV-Pb1)	TrStnPrt	3-03-024-08	NF	10,505,042	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M05	Pebble Conveyor No. 1 (CV-Pb1) to Pebble Wash Screen (Sn-PbW)	TrStnPrt	3-03-024-08	NF	10,505,042	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M06	Pebble Wash Screen (Sn-PbW)	Screen	3-05-020-02	NF	10,505,042	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M07	Pebble Wash Screen (Sn-PbW) to Pebble Conveyor No. 2	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M08	Pebble Conveyor No. 2 (CV-Pb2) to SAG Oversize Surge Bin (B-SAGOS)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.49	0	0.23	0	0.03	0
M09	SAG Oversize Surge Bin (B-SAGOS) to Pebble Crusher Feeder (F-PbC)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.49	0	0.23	0	0.03	0
M10	Pebble Crusher Feeder (F-PbC) to Pebble Crusher (PbC)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M11	Pebble Crusher (PbC)	CrushT	3-03-024-07	NF	6,269,400	tons	0.06	0.02	0.004	lb/ton	PCADC	100%	188.08	0	62.69	0	11.61	0
M12	Pebble Crusher (PbC) to Pebble Conveyor No. 3 (CV-Pb3)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.49	0	0.23	0	0.03	0
Copper Concentrate Dewatering and Stacking																		
CCD01	Copper Concentrate Filters (Ft-CC1/CC4) to Copper Concentrate Conveyor (CV-CC)	TrCuCncPrt	3-03-024-08	NF	550,936	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
CCD02	Copper Concentrate Conveyor (CV-CC) to Copper Concentrate Loadout Stockpile	TrCuCncPrt	3-03-024-08	F	550,936	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.01	0	0.006	0	0.0009	0
CCD03	Wind Erosion of Copper Concentrate Loadout Stockpile	WindCvd	3-03-888-01	F	1.17	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
CCD04	Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loaders	TrCuCncPrt	3-03-024-08	F	550,936	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.01	0	0.006	0	0.0009	0
Molybdenum Dewatering and Packaging																		
MD01	Molybdenum Concentrate Filter (Ft-MC) to Molybdenum Concentrate Dryer (D-MC)	TrMlyCncPrt	3-03-024-08	NF	6,377	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD02	Molybdenum Concentrate Dryer	MolyDry	3-03-024-11	NF	6,377	tons	19.70	12.00	5.91	lb/ton	MS/EP	100%	62.81	0	38.26	0	18.84	0
MD03	Molybdenum Concentrate Dryer (D-MC) to Molybdenum Concentrate Bin (B-MC)	DTrMlyCncPrt	3-03-024-08	NF	6,377	tons	0.00004	0.00002	0.000003	lb/ton	MDC	100%	0.0001	0	0.00007	0	0.00001	0
MD04	Molybdenum Concentrate Bin (B-MC) to Molybdenum Concentrate Hopper (H-MC)	DTrMlyCnc	3-03-024-08	NF	6,377	tons	0.0003	0.0002	0.00002	lb/ton	None	0%	0.001	0.001	0.0005	0.0005	0.00008	0.00008

Table H.61 Annual Particulate Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 15	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 15		PM_{10} Emissions (tpy) - Year 15		$PM_{2.5}$ Emissions (tpy) - Year 15	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
MD05	Molybdenum Concentrate Hopper (H-MC) to Molybdenum Concentrate Conveyor (CV-MC)	DTrMlyCncPrt	3-03-024-08	NF	6,377	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD06	Molybdenum Concentrate Conveyor (CV-MC) to Molybdenum Packaging and Weigh System (MPS)	DTrMlyCnc	3-03-024-08	NF	6,377	tons	0.0003	0.0002	0.00002	lb/ton	MDC	100%	0.001	0	0.0005	0	0.00008	0
Tailings Dewatering and Placement																		
TDS01	Tailings Filters (Ft-T1/T14) to Tailings Belt Feeders (F-T1/T14)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS02	Tailings Belt Feeders (F-T1/T14) to Fixed Tailings Conveyor No. 1 (CV-F1)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS03	Fixed Tailings Conveyor No. 1 (CV-F1) to Fixed Tailings Conveyor No. 2 (CV-F2)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS04	Fixed Tailings Conveyor No. 2 (CV-F2) to Fixed Tailings Conveyor No. 3 (CV-F3)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.52	0.52	0.25	0.25	0.04	0.04
TDS05	Fixed Tailings Conveyor No. 3 (CV-F3) to Relocatable Conveyor (CV-R1)	FiltTailPrt	3-03-024-08	F	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.52	0.52	0.25	0.25	0.04	0.04
TDS06	Relocatable Conveyor (CV-R1) to Shiftable Conveyor (CV-S1)	FiltTailPrt	3-03-024-08	F	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.52	0.52	0.25	0.25	0.04	0.04
TDS07	Shiftable Conveyor (CV-S1) to Belt Wagon Conveyor (CV-BW1)	FiltTail	3-03-024-08	F	42,804,687	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	4.00	4.00	1.89	1.89	0.29	0.29
TDS08	Belt Wagon Conveyor (CV-BW1) to Spreader Crawler Mounted Conveyor (CV-SP1)	FiltTail	3-03-024-08	F	42,804,687	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	4.00	4.00	1.89	1.89	0.29	0.29
TDS09	Spreader Crawler Mounted Conveyor (CV-SP1) to Tailings Storage	FiltTail	3-03-024-08	F	42,804,687	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	4.00	4.00	1.89	1.89	0.29	0.29
TDS10	Wind Erosion of Tailings Storage	TailStrg	3-03-888-01	F	1,500	acres	0.02	0.01	0.002	ton/acre-yr	None	0%	30.23	30.23	15.11	15.11	2.27	2.27
Fuel Burning Equipment																		
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	8,760	hours	3.30	2.30	1.54	lb/1000 gal	None	0%	0.63	0.63	0.44	0.44	0.30	0.30
					6.0	MMBtu/hr												
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.11	0.11	0.11	0.11	0.11	0.11
					1,000	kW												
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.11	0.11	0.11	0.11	0.11	0.11
					1,000	kW												
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.08	0.08	0.08	0.08	0.08	0.08
					750	kW												
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.08	0.08	0.08	0.08	0.08	0.08
					750	kW												
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	500	hours	0.40	0.40	0.40	g/kW-hr	None	0%	0.01	0.01	0.01	0.01	0.01	0.01
					50	kW												
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.03	0.03	0.03	0.03	0.03	0.03
					400	hp												
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.03	0.03	0.03	0.03	0.03	0.03
					400	hp												

Table H.61 Annual Particulate Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 15	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 15		PM_{10} Emissions (tpy) - Year 15		$PM_{2.5}$ Emissions (tpy) - Year 15	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Miscellaneous Sources																		
MS01	Transfer of Lime to the Lime Storage Bin (B-L)	LimeLd	3-05-016-26	NF	56,700	tons	0.61	0.29	0.04	lb/ton	LSV [a]	90%	1.73	1.73	0.82	0.82	0.12	0.12
MS02	Lime Storage Bin (B-L) to Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2)	ReagTr	3-03-024-04	NF	56,700	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS03	Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2) to Lime Slakers 1 and 2 (T-LS1/2)	ReagTr	3-03-024-04	NF	56,700	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS04	Lime Slaking in Lime Slakers 1 and 2 (T-LS1/2)	LimeSlk	3-05-016-09	NF	56,700	tons	8.00	8.00	8.00	lb/ton	LSS	99%	226.80	2.27	226.80	2.27	226.80	2.27
MS05	Transfer of Sodium Metasilicate to the Sodium Metasilicate Storage Bin (B-SM)	ReagTr	3-03-024-04	NF	3,000	tons	0.008	0.004	0.0006	lb/ton	SMSV [a]	90%	0.001	0.001	0.0006	0.0006	0.00009	0.00009
MS06	Transfer of Flocculant from Supersacks to Flocculant Storage Bins (B-F1/F2)	ReagTr	3-03-024-04	NF	1,100	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.005	0.005	0.002	0.002	0.0003	0.0003
MS07	Transfer of Guar from Bags to Guar Feeder (F-Gu)	ReagTr	3-03-024-04	NF	150	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.0006	0.0006	0.0003	0.0003	0.00004	0.00004
MS08	Transfer of Granular Cobalt Sulfate from Bags to Cobalt Sulfate Feeder (F-CoS)	ReagTr	3-03-024-04	NF	6	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.00002	0.00002	0.00001	0.00001	0.000002	0.000002
Particulate Matter Pollution Control Equipment with Emission Limits																		
PCL01	Crushing Area Dust Collector (PC-CADC)	CADC	none	NF	8,760	hours	1.42	0.64	0.12	lb/hr	--	--	--	6.22	--	2.80	--	0.52
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	SARTDC	none	NF	8,760	hours	3.11	1.47	0.22	lb/hr	--	--	--	13.61	--	6.44	--	0.97
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	SFCDC	none	NF	8,760	hours	0.76	0.36	0.05	lb/hr	--	--	--	3.33	--	1.58	--	0.24
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	PCADC	none	NF	8,760	hours	0.96	0.32	0.06	lb/hr	--	--	--	4.19	--	1.40	--	0.26
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	CCDC	none	NF	8,760	hours	3.76	1.78	0.27	lb/hr	--	--	--	16.48	--	7.80	--	1.18
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	CCDC	none	NF	8,760	hours	3.76	1.78	0.27	lb/hr	--	--	--	16.48	--	7.80	--	1.18
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	MS/EP	none	NF	8,760	hours	0.015	0.014	0.013	lb/hr	--	--	--	0.07	--	0.06	--	0.06
PCL08	Molybdenum Dust Collector (PC-MDC)	MDC	none	NF	8,760	hours	0.112	0.053	0.008	lb/hr	--	--	--	0.49	--	0.23	--	0.04
PCL09	Laboratory Dust Collector 1 (PC-L1)	LDC	none	NF	4,357,315,176	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	2.56	--	1.56	--	0.76
PCL10	Laboratory Dust Collector 2 (PC-L2)	LDC	none	NF	4,357,315,176	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	2.56	--	1.56	--	0.76
PCL11	Laboratory Dust Collector 3 (PC-L3)	LDC	none	NF	4,357,315,176	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	2.56	--	1.56	--	0.76
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	SFDC	none	NF	8,760	hours	0.97	0.46	0.07	lb/hr	--	--	--	4.26	--	2.01	--	0.31
Total Non-Fugitive Emissions (excluding tailpipe emissions):													**933.50**	**78.46**	**533.76**	**39.03**	**295.66**	**10.23**
Total Fugitive Emissions (excluding tailpipe emissions):													**22,866.77**	**2,655.49**	**5,911.99**	**715.01**	**602.46**	**82.35**
Total Emissions (excluding tailpipe emissions):													**23,800.27**	**2,733.95**	**6,445.75**	**754.04**	**898.12**	**92.59**
Tailpipe Emissions (see Tables H.67-H.69):													**29.38**	**29.38**	**29.38**	**29.38**	**29.38**	**29.38**

[a] The control efficiency for this emission unit is inherent to the process. Therefore, the control efficiency is applied to both uncontrolled and controlled emissions.

Table H.62 Maximum Daily Particulate Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 15	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 15		PM_{10} Emissions (tpd) - Year 15		$PM_{2.5}$ Emissions (tpd) - Year 15	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Mining																		
MN01	Drilling	Drilling	3-05-020-10	F	80	holes	1.30	0.43	0.08	lb/hole	None	0%	0.05	0.05	0.02	0.02	0.003	0.003
MN02	Blasting	Blast	3-05-020-09	F	1.0	blasts	328.26	170.69	9.85	lb/blast	None	0%	0.16	0.16	0.09	0.09	0.005	0.005
MN03	Loading Concentrate Ore	Loading	3-03-024-08	F	90,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0.03	0.03	0.01	0.01	0.002	0.002
MN04	Loading Leach Ore	Loading	3-03-024-08	F	0	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0	0	0	0	0	0
MN05	Loading Waste Rock	Loading	3-03-024-08	F	171,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0.06	0.06	0.03	0.03	0.004	0.004
MN06a	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Inside the Pit)	HaulingHD	3-05-020-11	F	2,007	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	21.32	2.13	5.48	0.55	0.55	0.05
MN06b	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Outside the Pit)	HaulingHD	3-05-020-11	F	421	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	4.47	0.45	1.15	0.11	0.11	0.01
MN07a	Hauling Leach Ore to Leach Pad (Inside the Pit)	HaulingHD	3-05-020-11	F	0	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	0	0	0	0	0	0
MN07b	Hauling Leach Ore to Leach Pad (Outside the Pit)	HaulingHD	3-05-020-11	F	0	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	0	0	0	0	0	0
MN08a	Hauling Waste Rock to Waste Rock Storage Area (Inside the Pit)	HaulingHD	3-05-020-11	F	1,974	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	20.97	2.10	5.39	0.54	0.54	0.05
MN08b	Hauling Waste Rock to Waste Rock Storage Area (Outside the Pit)	HaulingHD	3-05-020-11	F	2,818	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	29.93	2.99	7.69	0.77	0.77	0.08
MN09	Unloading Concentrate Ore to Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	90,000	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0.05	0.05	0.03	0.03	0.004	0.004
MN10	Unloading Leach Ore to Leach Pad	TrStnUnp	3-03-024-08	F	0	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0	0	0	0	0	0
MN11	Unloading Waste Rock to Waste Rock Storage Area	TrStnUnp	3-03-024-08	F	171,000	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0.10	0.10	0.05	0.05	0.007	0.007
MN12	Bulldozer Use	Bldzrs	3-05-020-99	F	142	hrs	2.82	0.43	0.30	lb/hr	None	0%	0.20	0.20	0.03	0.03	0.02	0.02
MN13a	Water Truck Use (Inside the Pit)	WtrTrksHD	3-05-020-99	F	259	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTI	90%	2.21	0.22	0.57	0.06	0.06	0.006
MN13b	Water Truck Use (Outside the Pit)	WtrTrksHD	3-05-020-99	F	211	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTO	90%	1.80	0.18	0.46	0.05	0.05	0.005
MN14	Grader Use	GradersY15	3-05-020-99	F	238	VMT	2.05	0.71	0.06	lb/VMT	None	0%	0.24	0.24	0.09	0.09	0.008	0.008
MN15a	Support Vehicle Use on Unpaved Roads (Inside the Pit)	SupVehUY15D	3-03-999-99	F	746	VMT	8.78	2.26	0.23	lb/VMT	HaulRdUI	90%	3.27	0.33	0.84	0.08	0.08	0.008
MN15b	Support Vehicle Use on Unpaved Roads (Outside the Pit)	SupVehUY15D	3-03-999-99	F	746	VMT	8.78	2.26	0.23	lb/VMT	HaulRdUO	90%	3.27	0.33	0.84	0.08	0.08	0.008
M16a	Support Vehicle Use on the Paved Entrance Road (within the process area boundary)	SupVehPEY15D	3-03-999-99	F	302	VMT	0.05	0.01	0.002	lb/VMT	None	0%	0.008	0.008	0.002	0.002	0.0004	0.0004
M16b	Support Vehicle Use on the Paved Entrance Road (outside of the process area boundary)	SupVehPEY15D	3-03-999-99	F	1,310	VMT	0.05	0.01	0.002	lb/VMT	None	0%	0.03	0.03	0.007	0.007	0.002	0.002
M16c	Support Vehicle Use on Paved Industrial Roads	SupVehPIY15D	3-03-999-99	F	610	VMT	1.01	0.20	0.05	lb/VMT	None	0%	0.31	0.31	0.06	0.06	0.02	0.02
Primary Crushing, Conveying, Coarse Ore Storage, and Reclaim Conveying																		
PC01	Wind Erosion of the Run of Mine Stockpile	WindROM	3-03-888-01	F	26	acres	0.21	0.11	0.02	ton/acre-yr	None	0%	0.01	0.01	0.007	0.007	0.001	0.001
PC02	Unloading to Primary Crusher Dump Hopper (H-CDp) from Haul Trucks or Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	166,800	tons	0.001	0.0006	0.00009	lb/ton	WSpry	82.5%	0.10	0.02	0.05	0.008	0.007	0.001
PC03	Primary Crusher (PCr)	CrushP	3-03-024-05	NF	166,800	tons	0.02	0.009	0.002	lb/ton	CADC	100%	1.67	0	0.75	0	0.14	0
PC04	Primary Crusher (PCr) to Crusher Discharge Hopper (H-CDs)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
PC05	Crusher Discharge Hopper (H-CDs) to Crusher Discharge Feeder (F-CD)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	0.01	0	0.006	0	0.0009	0
PC06	Crusher Discharge Feeder (F-CD) to Stockpile Feed Conveyor No. 1 (CV-SF1)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	0.01	0	0.006	0	0.0009	0

Table H.62 Maximum Daily Particulate Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 15	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 15		PM_{10} Emissions (tpd) - Year 15		$PM_{2.5}$ Emissions (tpd) - Year 15	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
PC07	Stockpile Feed Conveyor No. 1 (CV-SF1) to Stockpile Feed Conveyor No. 2 (CV-SF2)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SFCDC	100%	0.01	0	0.006	0	0.0009	0
PC08	Stockpile Feed Conveyor No. 2 (CV-SF2) to Covered Coarse Ore Stockpile	TrStnPrt	3-03-024-08	F	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	0.01	0	0.006	0	0.0009	0
PC09	Wind Erosion of the Coarse Ore Stockpile	WindCvd	3-03-888-01	F	5	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
PC10	Coarse Ore Stockpile to Reclaim Feeders (F-R1/R4)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	UndrGrd [a]	100%	0	0	0	0	0	0
PC11	Reclaim Feeders (F-R1/R4) to Reclaim Conveyor (CV-R)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	0.01	0	0.006	0	0.0009	0
PC12	Reclaim Conveyor (CV-R) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.01	0	0.006	0	0.0009	0
PC13	Pebble Conveyor No. 3 (CV-Pb3) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.003	0	0.002	0	0.0002	0
PC14	SAG Mill Feed Conveyor (CV-SMF) to SAG Mill (M-SAG)	TrStnPrt	3-03-024-08	NF	209,308	tons	0.0002	0.00007	0.00001	lb/ton	Water [a]	100%	0	0	0	0	0	0
Milling																		
M01	SAG Mill (M-SAG)	CrushS	3-03-024-06	NF	209,432	tons	0.05	0.02	0.004	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M02	SAG Mill (M-SAG) to Trommel Screen (Sn-T)	TrStnPrt	3-03-024-08	NF	209,432	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M03	Trommel Screen (Sn-T)	Screen	3-05-020-02	NF	209,432	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M04	Trommel Screen (Sn-T) to Pebble Conveyor No. 1 (CV-Pb1)	TrStnPrt	3-03-024-08	NF	44,426	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M05	Pebble Conveyor No. 1 (CV-Pb1) to Pebble Wash Screen (Sn-PbW)	TrStnPrt	3-03-024-08	NF	44,426	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M06	Pebble Wash Screen (Sn-PbW)	Screen	3-05-020-02	NF	44,426	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M07	Pebble Wash Screen (Sn-PbW) to Pebble Conveyor No. 2	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M08	Pebble Conveyor No. 2 (CV-Pb2) to SAG Oversize Surge Bin (B-SAGOS)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.003	0	0.002	0	0.0002	0
M09	SAG Oversize Surge Bin (B-SAGOS) to Pebble Crusher Feeder (F-PbC)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.003	0	0.002	0	0.0002	0
M10	Pebble Crusher Feeder (F-PbC) to Pebble Crusher (PbC)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M11	Pebble Crusher (PbC)	CrushT	3-03-024-07	NF	42,508	tons	0.06	0.02	0.004	lb/ton	PCADC	100%	1.28	0	0.43	0	0.08	0
M12	Pebble Crusher (PbC) to Pebble Conveyor No. 3 (CV-Pb3)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.003	0	0.002	0	0.0002	0
Copper Concentrate Dewatering and Stacking																		
CCD01	Copper Concentrate Filters (Ft-CC1/CC4) to Copper Concentrate Conveyor (CV-CC)	TrCuCncPrt	3-03-024-08	NF	3,312	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
CCD02	Copper Concentrate Conveyor (CV-CC) to Copper Concentrate Loadout Stockpile	TrCuCncPrt	3-03-024-08	F	3,312	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.00007	0	0.00003	0	0.000005	0
CCD03	Wind Erosion of Copper Concentrate Loadout Stockpile	WindCvd	3-03-888-01	F	1.17	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
CCD04	Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loaders	TrCuCncPrt	3-03-024-08	F	3,312	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.00007	0	0.00003	0	0.000005	0
Molybdenum Dewatering and Packaging																		
MD01	Molybdenum Concentrate Filter (Ft-MC) to Molybdenum Concentrate Dryer (D-MC)	TrMlyCncPrt	3-03-024-08	NF	45.6	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD02	Molybdenum Concentrate Dryer	MolyDry	3-03-024-11	NF	45.6	tons	19.70	12.00	5.91	lb/ton	MS/EP	100%	0.45	0	0.27	0	0.13	0
MD03	Molybdenum Concentrate Dryer (D-MC) to Molybdenum Concentrate Bin (B-MC)	DTrMlyCncPrt	3-03-024-08	NF	45.6	tons	0.00004	0.00002	0.000003	lb/ton	MDC	100%	0.000001	0	0.0000005	0	0.00000007	0
MD04	Molybdenum Concentrate Bin (B-MC) to Molybdenum Concentrate Hopper (H-MC)	DTrMlyCnc	3-03-024-08	NF	45.6	tons	0.0003	0.0002	0.00002	lb/ton	None	0%	0.000008	0.000008	0.000004	0.000004	0.0000005	0.0000005

Table H.62 Maximum Daily Particulate Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 15	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 15		PM_{10} Emissions (tpd) - Year 15		$PM_{2.5}$ Emissions (tpd) - Year 15	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
MD05	Molybdenum Concentrate Hopper (H-MC) to Molybdenum Concentrate Conveyor (CV-MC)	DTrMlyCncPrt	3-03-024-08	NF	45.6	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD06	Molybdenum Concentrate Conveyor (CV-MC) to Molybdenum Packaging and Weigh System (MPS)	DTrMlyCnc	3-03-024-08	NF	45.6	tons	0.0003	0.0002	0.00002	lb/ton	MDC	100%	0.000008	0	0.000004	0	0.0000005	0
Tailings Dewatering and Placement																		
TDS01	Tailings Filters (Ft-T1/T14) to Tailings Belt Feeders (F-T1/T14)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS02	Tailings Belt Feeders (F-T1/T14) to Fixed Tailings Conveyor No. 1 (CV-F1)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS03	Fixed Tailings Conveyor No. 1 (CV-F1) to Fixed Tailings Conveyor No. 2 (CV-F2)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS04	Fixed Tailings Conveyor No. 2 (CV-F2) to Fixed Tailings Conveyor No. 3 (CV-F3)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.003	0.003	0.001	0.001	0.0002	0.0002
TDS05	Fixed Tailings Conveyor No. 3 (CV-F3) to Relocatable Conveyor (CV-R1)	FiltTailPrt	3-03-024-08	F	257,328	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.003	0.003	0.001	0.001	0.0002	0.0002
TDS06	Relocatable Conveyor (CV-R1) to Shiftable Conveyor (CV-S1)	FiltTailPrt	3-03-024-08	F	257,328	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.003	0.003	0.001	0.001	0.0002	0.0002
TDS07	Shiftable Conveyor (CV-S1) to Belt Wagon Conveyor (CV-BW1)	FiltTail	3-03-024-08	F	257,328	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	0.02	0.02	0.01	0.01	0.002	0.002
TDS08	Belt Wagon Conveyor (CV-BW1) to Spreader Crawler Mounted Conveyor (CV-SP1)	FiltTail	3-03-024-08	F	257,328	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	0.02	0.02	0.01	0.01	0.002	0.002
TDS09	Spreader Crawler Mounted Conveyor (CV-SP1) to Tailings Storage	FiltTail	3-03-024-08	F	257,328	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	0.02	0.02	0.01	0.01	0.002	0.002
TDS10	Wind Erosion of Tailings Storage	TailStrg	3-03-888-01	F	1,500	acres	0.02	0.01	0.002	ton/acre-yr	None	0%	0.08	0.08	0.04	0.04	0.006	0.006
Fuel Burning Equipment																		
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	24	hours	3.30	2.30	1.54	lb/1000 gal	None	0%	0.002	0.002	0.001	0.001	0.0008	0.0008
					6.0	MMBtu/hr												
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.005	0.005	0.005	0.005	0.005	0.005
					1,000	kW												
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.005	0.005	0.005	0.005	0.005	0.005
					1,000	kW												
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.004	0.004	0.004	0.004	0.004	0.004
					750	kW												
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.004	0.004	0.004	0.004	0.004	0.004
					750	kW												
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	24	hours	0.40	0.40	0.40	g/kW-hr	None	0%	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
					50	kW												
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.002	0.002	0.002	0.002	0.002	0.002
					400	hp												
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.002	0.002	0.002	0.002	0.002	0.002
					400	hp												

Table H.62 Maximum Daily Particulate Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 15	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 15		PM_{10} Emissions (tpd) - Year 15		$PM_{2.5}$ Emissions (tpd) - Year 15	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Miscellaneous Sources																		
MS01	Transfer of Lime to the Lime Storage Bin (B-L)	LimeLd	3-05-016-26	NF	186.41	tons	0.61	0.29	0.04	lb/ton	BPLSV [a]	90%	0.006	0.006	0.003	0.003	0.0004	0.0004
MS02	Lime Storage Bin (B-L) to Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2)	ReagTr	3-03-024-04	NF	186.41	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS03	Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2) to Lime Slakers 1 and 2 (T-LS1/2)	ReagTr	3-03-024-04	NF	186.41	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS04	Lime Slaking in Lime Slakers 1 and 2 (T-LS1/2)	LimeSlk	3-05-016-09	NF	186.41	tons	8.00	8.00	8.00	lb/ton	LSS	99%	0.75	0.007	0.75	0.007	0.75	0.007
MS05	Transfer of Sodium Metasilicate to the Sodium Metasilicate Storage Bin (B-SM)	ReagTr	3-03-024-04	NF	9.86	tons	0.008	0.004	0.0006	lb/ton	SMSV [a]	90%	0.000004	0.000004	0.000002	0.000002	0.0000003	0.0000003
MS06	Transfer of Flocculant from Supersacks to Flocculant Storage Bins (B-F1/F2)	ReagTr	3-03-024-04	NF	3.62	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.00001	0.00001	0.000007	0.000007	0.000001	0.000001
MS07	Transfer of Guar from Bags to Guar Feeder (F-Gu)	ReagTr	3-03-024-04	NF	0.49	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.000002	0.000002	0.000001	0.000001	0.0000001	0.0000001
MS08	Transfer of Granular Cobalt Sulfate from Bags to Cobalt Sulfate Feeder (F-CoS)	ReagTr	3-03-024-04	NF	0.02	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.00000008	0.00000008	0.00000004	0.00000004	0.000000006	0.000000006
Particulate Matter Pollution Control Equipment with Emission Limits																		
PCL01	Crushing Area Dust Collector (PC-CADC)	CADC	none	NF	24	hours	1.42	0.64	0.12	lb/hr	--	--	--	0.02	--	0.008	--	0.001
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	SARTDC	none	NF	24	hours	3.11	1.47	0.22	lb/hr	--	--	--	0.04	--	0.02	--	0.003
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	SFCDC	none	NF	24	hours	0.76	0.36	0.05	lb/hr	--	--	--	0.01	--	0.004	--	0.001
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	PCADC	none	NF	24	hours	0.96	0.32	0.06	lb/hr	--	--	--	0.01	--	0.004	--	0.0007
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	CCDC	none	NF	24	hours	3.76	1.78	0.27	lb/hr	--	--	--	0.05	--	0.02	--	0.003
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	CCDC	none	NF	24	hours	3.76	1.78	0.27	lb/hr	--	--	--	0.05	--	0.02	--	0.003
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	MS/EP	none	NF	24	hours	0.015	0.014	0.013	lb/hr	--	--	--	0.0002	--	0.0002	--	0.0002
PCL08	Molybdenum Dust Collector (PC-MDC)	MDC	none	NF	24	hours	0.112	0.053	0.008	lb/hr	--	--	--	0.001	--	0.0006	--	0.0001
PCL09	Laboratory Dust Collector 1 (PC-L1)	LDC	none	NF	11,937,850	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.007	--	0.004	--	0.002
PCL10	Laboratory Dust Collector 2 (PC-L2)	LDC	none	NF	11,937,850	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.007	--	0.004	--	0.002
PCL11	Laboratory Dust Collector 3 (PC-L3)	LDC	none	NF	11,937,850	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.007	--	0.004	--	0.002
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	SFDC	none	NF	24	hours	0.97	0.46	0.07	lb/hr	--	--	--	0.01	--	0.006	--	0.0008
Total Non-Fugitive Emissions (excluding tailpipe emissions):													**4.25**	**0.24**	**2.26**	**0.13**	**1.13**	**0.05**
Total Fugitive Emissions (excluding tailpipe emissions):													**88.81**	**10.18**	**22.97**	**2.74**	**2.33**	**0.31**
Total Emissions (excluding tailpipe emissions):													**93.06**	**10.42**	**25.23**	**2.87**	**3.46**	**0.36**
Tailpipe Emissions (see Tables H.67-H.69):													**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**

[a] The control efficiency for this emission unit is inherent to the process. Therefore, the control efficiency is applied to both uncontrolled and controlled emissions.

Table H.63 Maximum Hourly Particulate Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 15	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (lb/hr) - Year 15		PM_{10} Emissions (lb/hr) - Year 15		$PM_{2.5}$ Emissions (lb/hr) - Year 15	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Mining																		
MN01	Drilling	Drilling	3-05-020-10	F	80	holes	1.30	0.43	0.08	lb/hole	None	0%	104.00	104.00	34.67	34.67	6.42	6.42
MN02	Blasting	Blast	3-05-020-09	F	1.00	blasts	328.26	170.69	9.85	lb/blast	None	0%	328.26	328.26	170.69	170.69	9.85	9.85
MN03	Loading Concentrate Ore	Loading	3-03-024-08	F	3,750	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	2.63	2.63	1.24	1.24	0.19	0.19
MN04	Loading Leach Ore	Loading	3-03-024-08	F	0	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0	0	0	0	0	0
MN05	Loading Waste Rock	Loading	3-03-024-08	F	7,125	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	5.00	5.00	2.36	2.36	0.36	0.36
MN06a	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Inside the Pit)	HaulingHD	3-05-020-11	F	84	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	1776.94	177.69	456.59	45.66	45.66	4.57
MN06b	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Outside the Pit)	HaulingHD	3-05-020-11	F	18	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	372.77	37.28	95.78	9.58	9.58	0.96
MN07a	Hauling Leach Ore to Leach Pad (Inside the Pit)	HaulingHD	3-05-020-11	F	0	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	0	0	0	0	0	0
MN07b	Hauling Leach Ore to Leach Pad (Outside the Pit)	HaulingHD	3-05-020-11	F	0	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	0	0	0	0	0	0
MN08a	Hauling Waste Rock to Waste Rock Storage Area (Inside the Pit)	HaulingHD	3-05-020-11	F	82	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	1,747.73	174.77	449.08	44.91	44.91	4.49
MN08b	Hauling Waste Rock to Waste Rock Storage Area (Outside the Pit)	HaulingHD	3-05-020-11	F	117	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	2,494.53	249.45	640.98	64.10	64.10	6.41
MN09	Unloading Concentrate Ore to Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	3,750	tons	0.001	0.0006	0.00009	lb/ton	None	0%	4.46	4.46	2.11	2.11	0.32	0.32
MN10	Unloading Leach Ore to Leach Pad	TrStnUnp	3-03-024-08	F	0	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0	0	0	0	0	0
MN11	Unloading Waste Rock to Waste Rock Storage Area	TrStnUnp	3-03-024-08	F	7,125	tons	0.001	0.0006	0.00009	lb/ton	None	0%	8.47	8.47	4.00	4.00	0.61	0.61
MN12	Bulldozer Use	Bldzrs	3-05-020-99	F	6	hrs	2.82	0.43	0.30	lb/hr	None	0%	16.69	16.69	2.52	2.52	1.75	1.75
MN13a	Water Truck Use (Inside the Pit)	WtrTrksHD	3-05-020-99	F	11	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTI	90%	184.33	18.43	47.36	4.74	4.74	0.47
MN13b	Water Truck Use (Outside the Pit)	WtrTrksHD	3-05-020-99	F	9	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTO	90%	149.95	14.99	38.53	3.85	3.85	0.39
MN14	Grader Use	GradersY15	3-05-020-99	F	10	VMT	2.05	0.71	0.06	lb/VMT	None	0%	20.40	20.40	7.10	7.10	0.63	0.63
MN15a	Support Vehicle Use on Unpaved Roads (Inside the Pit)	SupVehUY15H	3-03-999-99	F	31	VMT	8.89	2.29	0.23	lb/VMT	HaulRdUI	90%	279.67	27.97	71.86	7.19	7.19	0.72
MN15b	Support Vehicle Use on Unpaved Roads (Outside the Pit)	SupVehUY15H	3-03-999-99	F	31	VMT	8.89	2.29	0.23	lb/VMT	HaulRdUO	90%	279.67	27.97	71.86	7.19	7.19	0.72
M16a	Support Vehicle Use on the Paved Entrance Road (within the process area boundary)	SupVehPEY15H	3-03-999-99	F	25	VMT	0.05	0.01	0.003	lb/VMT	None	0%	1.35	1.35	0.27	0.27	0.07	0.07
M16b	Support Vehicle Use on the Paved Entrance Road (outside of the process area boundary)	SupVehPEY15H	3-03-999-99	F	110	VMT	0.05	0.01	0.003	lb/VMT	None	0%	5.87	5.87	1.17	1.17	0.29	0.29
M16c	Support Vehicle Use on Paved Industrial Roads	SupVehPIY15H	3-03-999-99	F	39	VMT	1.23	0.25	0.06	lb/VMT	None	0%	47.33	47.33	9.47	9.47	2.32	2.32
Primary Crushing, Conveying, Coarse Ore Storage, and Reclaim Conveying																		
PC01	Wind Erosion of the Run of Mine Stockpile	WindROM	3-03-888-01	F	26	acres	0.21	0.11	0.02	ton/acre-yr	None	0%	1.24	1.24	0.62	0.62	0.09	0.09
PC02	Unloading to Primary Crusher Dump Hopper (H-CDp) from Haul Trucks or Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	6,950	tons	0.001	0.0006	0.00009	lb/ton	WSpry	82.5%	8.26	1.45	3.91	0.68	0.59	0.10
PC03	Primary Crusher (PCr)	CrushP	3-03-024-05	NF	6,950	tons	0.02	0.009	0.002	lb/ton	CADC	100%	139.00	0	62.55	0	11.58	0
PC04	Primary Crusher (PCr) to Crusher Discharge Hopper (H-CDs)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
PC05	Crusher Discharge Hopper (H-CDs) to Crusher Discharge Feeder (F-CD)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	1.08	0	0.51	0	0.08	0
PC06	Crusher Discharge Feeder (F-CD) to Stockpile Feed Conveyor No. 1 (CV-SF1)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	1.08	0	0.51	0	0.08	0

Table H.63 Maximum Hourly Particulate Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 15	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (lb/hr) - Year 15		PM_{10} Emissions (lb/hr) - Year 15		$PM_{2.5}$ Emissions (lb/hr) - Year 15	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
PC07	Stockpile Feed Conveyor No. 1 (CV-SF1) to Stockpile Feed Conveyor No. 2 (CV-SF2)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SFCDC	100%	1.08	0	0.51	0	0.08	0
PC08	Stockpile Feed Conveyor No. 2 (CV-SF2) to Covered Coarse Ore Stockpile	TrStnPrt	3-03-024-08	F	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	1.08	0	0.51	0	0.08	0
PC09	Wind Erosion of the Coarse Ore Stockpile	WindCvd	3-03-888-01	F	5	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
PC10	Coarse Ore Stockpile to Reclaim Feeders (F-R1/R4)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	UndrGrd [a]	100%	0	0	0	0	0	0
PC11	Reclaim Feeders (F-R1/R4) to Reclaim Conveyor (CV-R)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	1.08	0	0.51	0	0.08	0
PC12	Reclaim Conveyor (CV-R) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	1.08	0	0.51	0	0.08	0
PC13	Pebble Conveyor No. 3 (CV-Pb3) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.28	0	0.13	0	0.02	0
PC14	SAG Mill Feed Conveyor (CV-SMF) to SAG Mill (M-SAG)	TrStnPrt	3-03-024-08	NF	8,721	tons	0.0002	0.00007	0.00001	lb/ton	Water [a]	100%	0	0	0	0	0	0
Milling																		
M01	SAG Mill (M-SAG)	CrushS	3-03-024-06	NF	8,726	tons	0.05	0.02	0.004	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M02	SAG Mill (M-SAG) to Trommel Screen (Sn-T)	TrStnPrt	3-03-024-08	NF	8,726	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M03	Trommel Screen (Sn-T)	Screen	3-05-020-02	NF	8,726	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M04	Trommel Screen (Sn-T) to Pebble Conveyor No. 1 (CV-Pb1)	TrStnPrt	3-03-024-08	NF	1,851	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M05	Pebble Conveyor No. 1 (CV-Pb1) to Pebble Wash Screen (Sn-PbW)	TrStnPrt	3-03-024-08	NF	1,851	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M06	Pebble Wash Screen (Sn-PbW)	Screen	3-05-020-02	NF	1,851	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M07	Pebble Wash Screen (Sn-PbW) to Pebble Conveyor No. 2	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M08	Pebble Conveyor No. 2 (CV-Pb2) to SAG Oversize Surge Bin (B-SAGOS)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.28	0	0.13	0	0.02	0
M09	SAG Oversize Surge Bin (B-SAGOS) to Pebble Crusher Feeder (F-PbC)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.28	0	0.13	0	0.02	0
M10	Pebble Crusher Feeder (F-PbC) to Pebble Crusher (PbC)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M11	Pebble Crusher (PbC)	CrushT	3-03-024-07	NF	1,771	tons	0.06	0.02	0.00	lb/ton	PCADC	100%	106.27	0	35.42	0	6.56	0
M12	Pebble Crusher (PbC) to Pebble Conveyor No. 3 (CV-Pb3)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.28	0	0.13	0	0.02	0
Copper Concentrate Dewatering and Stacking																		
CCD01	Copper Concentrate Filters (Ft-CC1/CC4) to Copper Concentrate Conveyor (CV-CC)	TrCuCncPrt	3-03-024-08	NF	138	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
CCD02	Copper Concentrate Conveyor (CV-CC) to Copper Concentrate Loadout Stockpile	TrCuCncPrt	3-03-024-08	F	138	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.006	0	0.003	0	0.0004	0
CCD03	Wind Erosion of Copper Concentrate Loadout Stockpile	WindCvd	3-03-888-01	F	1.17	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
CCD04	Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loaders	TrCuCncPrt	3-03-024-08	F	138	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.006	0	0.003	0	0.0004	0
Molybdenum Dewatering and Packaging																		
MD01	Molybdenum Concentrate Filter (Ft-MC) to Molybdenum Concentrate Dryer (D-MC)	TrMlyCncPrt	3-03-024-08	NF	1.9	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD02	Molybdenum Concentrate Dryer	MolyDry	3-03-024-11	NF	1.9	tons	19.70	12.00	5.91	lb/ton	MS/EP	100%	37.43	0	22.80	0	11.23	0
MD03	Molybdenum Concentrate Dryer (D-MC) to Molybdenum Concentrate Bin (B-MC)	DTrMlyCncPrt	3-03-024-08	NF	1.9	tons	0.00004	0.00002	0.000003	lb/ton	MDC	100%	0.00008	0	0.00004	0	0.000006	0
MD04	Molybdenum Concentrate Bin (B-MC) to Molybdenum Concentrate Hopper (H-MC)	DTrMlyCnc	3-03-024-08	NF	1.9	tons	0.0003	0.0002	0.00002	lb/ton	None	0%	0.0006	0.0006	0.0003	0.0003	0.00004	0.00004

Table H.63 Maximum Hourly Particulate Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 15	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (lb/hr) - Year 15		PM_{10} Emissions (lb/hr) - Year 15		$PM_{2.5}$ Emissions (lb/hr) - Year 15	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
MD05	Molybdenum Concentrate Hopper (H-MC) to Molybdenum Concentrate Conveyor (CV-MC)	DTrMlyCncPrt	3-03-024-08	NF	1.9	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD06	Molybdenum Concentrate Conveyor (CV-MC) to Molybdenum Packaging and Weigh System (MPS)	DTrMlyCnc	3-03-024-08	NF	1.9	tons	0.0003	0.0002	0.00002	lb/ton	MDC	100%	0.0006	0	0.0003	0	0.00004	0
Tailings Dewatering and Placement																		
TDS01	Tailings Filters (Ft-T1/T14) to Tailings Belt Feeders (F-T1/T14)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS02	Tailings Belt Feeders (F-T1/T14) to Fixed Tailings Conveyor No. 1 (CV-F1)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS03	Fixed Tailings Conveyor No. 1 (CV-F1) to Fixed Tailings Conveyor No. 2 (CV-F2)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS04	Fixed Tailings Conveyor No. 2 (CV-F2) to Fixed Tailings Conveyor No. 3 (CV-F3)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.26	0.26	0.12	0.12	0.02	0.02
TDS05	Fixed Tailings Conveyor No. 3 (CV-F3) to Relocatable Conveyor (CV-R1)	FiltTailPrt	3-03-024-08	F	10,722	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.26	0.26	0.12	0.12	0.02	0.02
TDS06	Relocatable Conveyor (CV-R1) to Shiftable Conveyor (CV-S1)	FiltTailPrt	3-03-024-08	F	10,722	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.26	0.26	0.12	0.12	0.02	0.02
TDS07	Shiftable Conveyor (CV-S1) to Belt Wagon Conveyor (CV-BW1)	FiltTail	3-03-024-08	F	10,722	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	2.00	2.00	0.95	0.95	0.14	0.14
TDS08	Belt Wagon Conveyor (CV-BW1) to Spreader Crawler Mounted Conveyor (CV-SP1)	FiltTail	3-03-024-08	F	10,722	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	2.00	2.00	0.95	0.95	0.14	0.14
TDS09	Spreader Crawler Mounted Conveyor (CV-SP1) to Tailings Storage	FiltTail	3-03-024-08	F	10,722	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	2.00	2.00	0.95	0.95	0.14	0.14
TDS10	Wind Erosion of Tailings Storage	TailStrg	3-03-888-01	F	1,500	acres	0.02	0.01	0.002	ton/acre-yr	None	0%	6.90	6.90	3.45	3.45	0.52	0.52
Fuel Burning Equipment																		
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	1	hours	3.30	2.30	1.54	lb/1000 gal	None	0%	0.14	0.14	0.10	0.10	0.07	0.07
					6.0	MMBtu/hr												
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.44	0.44	0.44	0.44	0.44	0.44
					1,000	kW												
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.44	0.44	0.44	0.44	0.44	0.44
					1,000	kW												
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.33	0.33	0.33	0.33	0.33	0.33
					750	kW												
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.33	0.33	0.33	0.33	0.33	0.33
					750	kW												
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	1	hours	0.40	0.40	0.40	g/kW-hr	None	0%	0.04	0.04	0.04	0.04	0.04	0.04
					50	kW												
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.13	0.13	0.13	0.13	0.13	0.13
					400	hp												
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.13	0.13	0.13	0.13	0.13	0.13
					400	hp												

Table H.63 Maximum Hourly Particulate Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 15	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (lb/hr) - Year 15		PM_{10} Emissions (lb/hr) - Year 15		$PM_{2.5}$ Emissions (lb/hr) - Year 15	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Miscellaneous Sources																		
MS01	Transfer of Lime to the Lime Storage Bin (B-L)	LimeLd	3-05-016-26	NF	7.77	tons	0.61	0.29	0.04	lb/ton	BPLSV [a]	90%	0.47	0.47	0.22	0.22	0.03	0.03
MS02	Lime Storage Bin (B-L) to Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2)	ReagTr	3-03-024-04	NF	7.77	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS03	Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2) to Lime Slakers 1 and 2 (T-LS1/2)	ReagTr	3-03-024-04	NF	7.77	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS04	Lime Slaking in Lime Slakers 1 and 2 (T-LS1/2)	LimeSlk	3-05-016-09	NF	7.77	tons	8.00	8.00	8.00	lb/ton	LSS	99%	62.14	0.62	62.14	0.62	62.14	0.62
MS05	Transfer of Sodium Metasilicate to the Sodium Metasilicate Storage Bin (B-SM)	ReagTr	3-03-024-04	NF	0.41	tons	0.008	0.004	0.0006	lb/ton	SMSV [a]	90%	0.0003	0.0003	0.0002	0.0002	0.00002	0.00002
MS06	Transfer of Flocculant from Supersacks to Flocculant Storage Bins (B-F1/F2)	ReagTr	3-03-024-04	NF	0.15	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.001	0.001	0.0006	0.0006	0.00009	0.00009
MS07	Transfer of Guar from Bags to Guar Feeder (F-Gu)	ReagTr	3-03-024-04	NF	0.02	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.0002	0.0002	0.00008	0.00008	0.00001	0.00001
MS08	Transfer of Granular Cobalt Sulfate from Bags to Cobalt Sulfate Feeder (F-CoS)	ReagTr	3-03-024-04	NF	0.0008	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.000007	0.000007	0.000003	0.000003	0.0000005	0.0000005
Particulate Matter Pollution Control Equipment with Emission Limits																		
PCL01	Crushing Area Dust Collector (PC-CADC)	CADC	none	NF	1	hours	1.42	0.64	0.12	lb/hr	--	--	--	1.42	--	0.64	--	0.12
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	SARTDC	none	NF	1	hours	3.11	1.47	0.22	lb/hr	--	--	--	3.11	--	1.47	--	0.22
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	SFCDC	none	NF	1	hours	0.76	0.36	0.05	lb/hr	--	--	--	0.76	--	0.36	--	0.05
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	PCADC	none	NF	1	hours	0.96	0.32	0.06	lb/hr	--	--	--	0.96	--	0.32	--	0.06
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	CCDC	none	NF	1	hours	3.76	1.78	0.27	lb/hr	--	--	--	3.76	--	1.78	--	0.27
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	CCDC	none	NF	1	hours	3.76	1.78	0.27	lb/hr	--	--	--	3.76	--	1.78	--	0.27
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	MS/EP	none	NF	1	hours	0.015	0.014	0.013	lb/hr	--	--	--	0.02	--	0.01	--	0.01
PCL08	Molybdenum Dust Collector (PC-MDC)	MDC	none	NF	1	hours	0.112	0.053	0.008	lb/hr	--	--	--	0.11	--	0.05	--	0.008
PCL09	Laboratory Dust Collector 1 (PC-L1)	LDC	none	NF	497,410	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.58	--	0.36	--	0.17
PCL10	Laboratory Dust Collector 2 (PC-L2)	LDC	none	NF	497,410	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.58	--	0.36	--	0.17
PCL11	Laboratory Dust Collector 3 (PC-L3)	LDC	none	NF	497,410	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.58	--	0.36	--	0.17
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	SFDC	none	NF	1	hours	0.97	0.46	0.07	lb/hr	--	--	--	0.97	--	0.46	--	0.07
Total Non-Fugitive Emissions (excluding tailpipe emissions):													**354.09**	**19.98**	**188.29**	**10.86**	**93.95**	**4.20**
Total Fugitive Emissions (excluding tailpipe emissions):													**7,854.08**	**1,289.14**	**2,119.24**	**430.66**	**211.76**	**42.71**
Total Emissions (excluding tailpipe emissions):													**8,208.17**	**1,309.12**	**2,307.54**	**441.52**	**305.70**	**46.91**
Tailpipe Emissions (see Tables H.67-H.69):													**8.59**	**8.59**	**8.59**	**8.59**	**8.59**	**8.59**

[a] The control efficiency for this emission unit is inherent to the process. Therefore, the control efficiency is applied to both uncontrolled and controlled emissions.

Table H.64 Annual Gaseous Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 15	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 15								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
Mining																										
MN02	Blasting	Blast	3-05-020-09	F	13,104	tons ANFO	67.00	17.00	2.00	0	0	566	0.02	0.005	--	--	lb/tons ANFO	438.98	111.38	13.10	0	0	3,711.38	0.15	0.03	--
Solvent Extraction and Electrowinning																										
SXE01	Solvent Extraction	SX	4-90-001-99	F	8,760	hours	0	0	0	9.43E-05	0	0	0	0	Benzene	3.37E-07	lb/hr-ft^2	0	0	0	3.77	0	0	0	0	1.35E-02
	4 Primary Mix Tanks (7.75' D x 9.75' H each)	4 @ 47.2 = 188.7	ft^2		9,132.9	ft^2	Total Surface Area of Solvent Extraction								Toluene	4.82E-06	lb/hr-ft^2									1.93E-01
	4 Secondary Mix Tanks (9.5' D x 9.75' H each)	4 @ 70.9 = 283.5	ft^2												Ethylbenzene	2.05E-05	lb/hr-ft^2									8.21E-01
	3 Tertiary Mix Tanks (9.5' D x 9.75' H each)	3 @ 70.9 = 212.6	ft^2												Xylenes	2.80E-05	lb/hr-ft^2									1.12E+00
	4 Extraction Settlers (64' L x 33' W x 3.33' H each)	4 @ 2,112 = 8,448	ft^2												Others (including Hexane)	2.94E-05	lb/hr-ft^2									1.18E+00
SXE02	Electrowinning Commercial Cells (EWCC)	EW	none	NF	8,760	hours	0	0	0	0	1.57E-04	0	0	0	Cobalt Compounds	2.36E-08	lb/hr-ft^2	0	0	0	0	0.02	0	0	0	2.72E-06
	Controlled by Cell Ventilation Scrubbers (PC-EWCVS1/EWCVS3)				2,640	ft^2																				
					99	Control Efficiency (%)																				
Fuel Burning Equipment																										
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	8,760	hours	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	POM	3.30E-03	lb/1000 gal	0.96	3.84	0.04	0.04	0	4,453.51	0.18	0.04	6.33E-04
					6.0	MMBtu/hr									Formaldehyde	6.10E-02	lb/1000 gal									1.17E-02
															Arsenic	4.00	lb/10^{12} Btu									1.05E-04
															Beryllium	3.00	lb/10^{12} Btu									7.88E-05
															Cadmium	3.00	lb/10^{12} Btu									7.88E-05
															Chromium	3.00	lb/10^{12} Btu									7.88E-05
															Lead	9.00	lb/10^{12} Btu									2.37E-04
															Mercury	3.00	lb/10^{12} Btu									7.88E-05
															Manganese	6.00	lb/10^{12} Btu									1.58E-04
															Nickel	3.00	lb/10^{12} Btu									7.88E-05
															Selenium	15.00	lb/10^{12} Btu									3.94E-04
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.93	3.31	0.004	0.22	0	382.65	0.02	0.003	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									1.82E-03
															Toluene	2.81E-04	lb/MMBtu									6.59E-04
															Xylenes	1.93E-04	lb/MMBtu									4.53E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.85E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									5.91E-05
															Acrolein	7.88E-06	lb/MMBtu									1.85E-05
															Naphthalene	1.30E-04	lb/MMBtu									3.05E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									2.17E-05
															Acenaphthene	4.68E-06	lb/MMBtu									1.10E-05
															Fluorene	1.28E-05	lb/MMBtu									3.00E-05
															Phenanthrene	4.08E-05	lb/MMBtu									9.57E-05
															Anthracene	1.23E-06	lb/MMBtu									2.89E-06
															Fluoranthene	4.03E-06	lb/MMBtu									9.46E-06
															Pyrene	3.71E-06	lb/MMBtu									8.71E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.46E-06
															Chrysene	1.53E-06	lb/MMBtu									3.59E-06

Table H.64 Annual Gaseous Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 15	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 15								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									2.60E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									5.12E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									6.03E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									9.72E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									8.12E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									1.30E-06
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.93	3.31	0.004	0.22	0	382.65	0.02	0.003	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									1.82E-03
															Toluene	2.81E-04	lb/MMBtu									6.59E-04
															Xylenes	1.93E-04	lb/MMBtu									4.53E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.85E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									5.91E-05
															Acrolein	7.88E-06	lb/MMBtu									1.85E-05
															Naphthalene	1.30E-04	lb/MMBtu									3.05E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									2.17E-05
															Acenaphthene	4.68E-06	lb/MMBtu									1.10E-05
															Fluorene	1.28E-05	lb/MMBtu									3.00E-05
															Phenanthrene	4.08E-05	lb/MMBtu									9.57E-05
															Anthracene	1.23E-06	lb/MMBtu									2.89E-06
															Fluoranthene	4.03E-06	lb/MMBtu									9.46E-06
															Pyrene	3.71E-06	lb/MMBtu									8.71E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.46E-06
															Chrysene	1.53E-06	lb/MMBtu									3.59E-06
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									2.60E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									5.12E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									6.03E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									9.72E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									8.12E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									1.30E-06
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.45	2.48	0.003	0.17	0	286.99	0.01	0.002	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									1.37E-03
															Toluene	2.81E-04	lb/MMBtu									4.95E-04
															Xylenes	1.93E-04	lb/MMBtu									3.40E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.39E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									4.44E-05
															Acrolein	7.88E-06	lb/MMBtu									1.39E-05
															Naphthalene	1.30E-04	lb/MMBtu									2.29E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									1.62E-05
															Acenaphthene	4.68E-06	lb/MMBtu									8.24E-06
															Fluorene	1.28E-05	lb/MMBtu									2.25E-05

Table H.64 Annual Gaseous Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 15	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 15								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Phenanthrene	4.08E-05	lb/MMBtu									7.18E-05
															Anthracene	1.23E-06	lb/MMBtu									2.16E-06
															Fluoranthene	4.03E-06	lb/MMBtu									7.09E-06
															Pyrene	3.71E-06	lb/MMBtu									6.53E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.09E-06
															Chrysene	1.53E-06	lb/MMBtu									2.69E-06
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.95E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									3.84E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									4.52E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									7.29E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									6.09E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									9.79E-07
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.45	2.48	0.003	0.17	0	286.99	0.01	0.002	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									1.37E-03
															Toluene	2.81E-04	lb/MMBtu									4.95E-04
															Xylenes	1.93E-04	lb/MMBtu									3.40E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.39E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									4.44E-05
															Acrolein	7.88E-06	lb/MMBtu									1.39E-05
															Naphthalene	1.30E-04	lb/MMBtu									2.29E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									1.62E-05
															Acenaphthene	4.68E-06	lb/MMBtu									8.24E-06
															Fluorene	1.28E-05	lb/MMBtu									2.25E-05
															Phenanthrene	4.08E-05	lb/MMBtu									7.18E-05
															Anthracene	1.23E-06	lb/MMBtu									2.16E-06
															Fluoranthene	4.03E-06	lb/MMBtu									7.09E-06
															Pyrene	3.71E-06	lb/MMBtu									6.53E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.09E-06
															Chrysene	1.53E-06	lb/MMBtu									2.69E-06
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.95E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									3.84E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									4.52E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									7.29E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									6.09E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									9.79E-07
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	500	hours	5.00	4.43	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.14	0.12	0.0002	0.007	0	19.13	0.0008	0.0002	--
					50	kW									Benzene	9.33E-04	lb/MMBtu									1.09E-04
															Toluene	4.09E-04	lb/MMBtu									4.80E-05
															Xylenes	2.85E-04	lb/MMBtu									3.34E-05
															1,3-Butadiene	3.91E-05	lb/MMBtu									4.59E-06

Table H.64 Annual Gaseous Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 15	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 15								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Formaldehyde	1.18E-03	lb/MMBtu									1.38E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									9.00E-05
															Acrolein	9.25E-05	lb/MMBtu									1.09E-05
															Naphthalene	8.48E-05	lb/MMBtu									9.95E-06
															Acenaphthylene	5.06E-06	lb/MMBtu									5.94E-07
															Acenaphthene	1.42E-06	lb/MMBtu									1.67E-07
															Fluorene	2.92E-05	lb/MMBtu									3.43E-06
															Phenanthrene	2.94E-05	lb/MMBtu									3.45E-06
															Anthracene	1.87E-06	lb/MMBtu									2.19E-07
															Fluoranthene	7.61E-06	lb/MMBtu									8.93E-07
															Pyrene	4.78E-06	lb/MMBtu									5.61E-07
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									1.97E-07
															Chrysene	3.53E-07	lb/MMBtu									4.14E-08
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									1.16E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									1.82E-08
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									2.21E-08
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									4.40E-08
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									6.84E-08
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									5.74E-08
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	500	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.58	0.61	0.001	0.04	0	114.14	0.005	0.0009	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									6.53E-04
															Toluene	4.09E-04	lb/MMBtu									2.86E-04
															Xylenes	2.85E-04	lb/MMBtu									2.00E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									2.74E-05
															Formaldehyde	1.18E-03	lb/MMBtu									8.26E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									5.37E-04
															Acrolein	9.25E-05	lb/MMBtu									6.48E-05
															Naphthalene	8.48E-05	lb/MMBtu									5.94E-05
															Acenaphthylene	5.06E-06	lb/MMBtu									3.54E-06
															Acenaphthene	1.42E-06	lb/MMBtu									9.94E-07
															Fluorene	2.92E-05	lb/MMBtu									2.04E-05
															Phenanthrene	2.94E-05	lb/MMBtu									2.06E-05
															Anthracene	1.87E-06	lb/MMBtu									1.31E-06
															Fluoranthene	7.61E-06	lb/MMBtu									5.33E-06
															Pyrene	4.78E-06	lb/MMBtu									3.35E-06
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									1.18E-06
															Chrysene	3.53E-07	lb/MMBtu									2.47E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									6.94E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									1.09E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									1.32E-07

Table H.64 Annual Gaseous Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 15	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 15								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									2.63E-07
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									4.08E-07
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									3.42E-07
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	500	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.58	0.61	0.001	0.04	0	114.14	0.005	0.0009	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									6.53E-04
															Toluene	4.09E-04	lb/MMBtu									2.86E-04
															Xylenes	2.85E-04	lb/MMBtu									2.00E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									2.74E-05
															Formaldehyde	1.18E-03	lb/MMBtu									8.26E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									5.37E-04
															Acrolein	9.25E-05	lb/MMBtu									6.48E-05
															Naphthalene	8.48E-05	lb/MMBtu									5.94E-05
															Acenaphthylene	5.06E-06	lb/MMBtu									3.54E-06
															Acenaphthene	1.42E-06	lb/MMBtu									9.94E-07
															Fluorene	2.92E-05	lb/MMBtu									2.04E-05
															Phenanthrene	2.94E-05	lb/MMBtu									2.06E-05
															Anthracene	1.87E-06	lb/MMBtu									1.31E-06
															Fluoranthene	7.61E-06	lb/MMBtu									5.33E-06
															Pyrene	4.78E-06	lb/MMBtu									3.35E-06
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									1.18E-06
															Chrysene	3.53E-07	lb/MMBtu									2.47E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									6.94E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									1.09E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									1.32E-07
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									2.63E-07
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									4.08E-07
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									3.42E-07
Tanks																										
T01	C7 Distribution Tank (T-C7D)	C7DT	4-03-010-19	NF	8,760	hours	0	0	0	1.08E-01	0	0	0	0	--	--	lb/hr	0	0	0	0.47	0	0	0	0	--
T02	MIBC Storage Tank (T-MIBCS)	MST	4-90-999-98	NF	8,760	hours	0	0	0	3.53E-03	0	0	0	0	--	--	lb/hr	0	0	0	0.02	0	0	0	0	--
T03	Diesel Fuel Storage Tank - Heavy Vehicles 1 (T-DFS-HV1)	DFSTHV	4-03-010-19	NF	8,760	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.06	0	0	0	0	2.50E-05
															Benzene	2.74E-05	lb/hr									1.20E-04
															Toluene	3.18E-04	lb/hr									1.40E-03
															Ethylbenzene	4.45E-05	lb/hr									1.95E-04
															m-Xylene	8.23E-04	lb/hr									3.61E-03
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									2.96E-03
T04	Diesel Fuel Storage Tank - Heavy Vehicles 2 (T-DFS-HV2)	DFSTHV	4-03-010-19	NF	8,760	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.06	0	0	0	0	2.50E-05
															Benzene	2.74E-05	lb/hr									1.20E-04
															Toluene	3.18E-04	lb/hr									1.40E-03
															Ethylbenzene	4.45E-05	lb/hr									1.95E-04

Table H.64 Annual Gaseous Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 15	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 15								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															m-Xylene	8.23E-04	lb/hr									3.61E-03
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									2.96E-03
Total Non-Fugitive Emissions (excluding tailpipe emissions):																		**9.00**	**16.76**	**0.06**	**1.51**	**0.02**	**6,040.20**	**0.25**	**0.05**	**0.05**
Total Fugitive Emissions (excluding tailpipe emissions):																		**438.98**	**111.38**	**13.10**	**3.77**	**0**	**3,711.38**	**0.15**	**0.03**	**3.32**
Total Emissions (excluding tailpipe emissions):																		**447.98**	**128.14**	**13.16**	**5.28**	**0.02**	**9,751.58**	**0.40**	**0.08**	**3.37**
Tailpipe Emissions (see Tables H.70-H.74):																		**826.39**	**1,016.04**	**1.54**	**72.54**	**--**	**162,718.15**	**--**	**--**	**--**

[a] CO_2e emissions are calculcated by summing the individual greenhouse gas emissions multiplied by their global warming potential (GWP). GWP of CO_2 = 1, GWP of CH_4 = 21, GWP of N_2O = 310.

[b] All HAP emissions are included in the facility-wide potential to emit, regardless of if they are fugitive or non-fugitive emissions.

Table H.65 Maximum Daily Gaseous Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 15	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 15								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
Mining																										
MN02	Blasting	Blast	3-05-020-09	F	52	tons ANFO	67.00	17.00	2.00	0	0	566	0.02	0.005	--	--	lb/tons ANFO	1.74	0.44	0.05	0	0	14.73	0.0006	0.0001	--
Solvent Extraction and Electrowinning																										
SXE01	Solvent Extraction	SX	4-90-001-99	F	24	hours	0	0	0	9.43E-05	0	0	0	0	Benzene	3.37E-07	lb/hr-ft^2	0	0	0	0.01	0	0	0	0	3.69E-05
	4 Primary Mix Tanks (7.75' D x 9.75' H each)	4 @ 47.2 = 188.7	ft^2		9,132.9	ft^2	Total Surface Area of Solvent Extraction								Toluene	4.82E-06	lb/hr-ft^2									5.28E-04
	4 Secondary Mix Tanks (9.5' D x 9.75' H each)	4 @ 70.9 = 283.5	ft^2												Ethylbenzene	2.05E-05	lb/hr-ft^2									2.25E-03
	3 Tertiary Mix Tanks (9.5' D x 9.75' H each)	3 @ 70.9 = 212.6	ft^2												Xylenes	2.80E-05	lb/hr-ft^2									3.07E-03
	4 Extraction Settlers (64' L x 33' W x 3.33' H each)	4 @ 2,112 = 8,448	ft^2												Others (including Hexane)	2.94E-05	lb/hr-ft^2									3.22E-03
SXE02	Electrowinning Commercial Cells (EWCC)	EW	none	NF	24	hours	0	0	0	0	1.57E-04	0	0	0	Cobalt Compounds	2.36E-08	lb/hr-ft^2	0	0	0	0	0.00005	0	0	0	7.46E-09
	Controlled by Cell Ventilation Scrubbers (PC-EWCVS1/EWCVS3)				2,640	ft^2																				
					99	Control Efficiency (%)																				
Fuel Burning Equipment																										
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	24	hours	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	POM	3.30E-03	lb/1000 gal	0.003	0.01	0.0001	0.0001	0	12.20	0.0005	0.0001	1.73E-06
					6.0	MMBtu/hr									Formaldehyde	6.10E-02	lb/1000 gal									3.21E-05
															Arsenic	4.00	lb/10^{12} Btu									2.88E-07
															Beryllium	3.00	lb/10^{12} Btu									2.16E-07
															Cadmium	3.00	lb/10^{12} Btu									2.16E-07
															Chromium	3.00	lb/10^{12} Btu									2.16E-07
															Lead	9.00	lb/10^{12} Btu									6.48E-07
															Mercury	3.00	lb/10^{12} Btu									2.16E-07
															Manganese	6.00	lb/10^{12} Btu									4.32E-07
															Nickel	3.00	lb/10^{12} Btu									2.16E-07
															Selenium	15.00	lb/10^{12} Btu									1.08E-06
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.09	0.16	0.0002	0.01	0	18.37	0.0007	0.0001	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									8.74E-05
															Toluene	2.81E-04	lb/MMBtu									3.17E-05
															Xylenes	1.93E-04	lb/MMBtu									2.17E-05
															Formaldehyde	7.89E-05	lb/MMBtu									8.89E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.84E-06
															Acrolein	7.88E-06	lb/MMBtu									8.88E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.46E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									1.04E-06
															Acenaphthene	4.68E-06	lb/MMBtu									5.27E-07
															Fluorene	1.28E-05	lb/MMBtu									1.44E-06
															Phenanthrene	4.08E-05	lb/MMBtu									4.60E-06
															Anthracene	1.23E-06	lb/MMBtu									1.39E-07
															Fluoranthene	4.03E-06	lb/MMBtu									4.54E-07
															Pyrene	3.71E-06	lb/MMBtu									4.18E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									7.01E-08
															Chrysene	1.53E-06	lb/MMBtu									1.72E-07

Table H.65 Maximum Daily Gaseous Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 15	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 15								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.25E-07
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.46E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.89E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									4.66E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.90E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									6.26E-08
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.09	0.16	0.0002	0.01	0	18.37	0.0007	0.0001	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									8.74E-05
															Toluene	2.81E-04	lb/MMBtu									3.17E-05
															Xylenes	1.93E-04	lb/MMBtu									2.17E-05
															Formaldehyde	7.89E-05	lb/MMBtu									8.89E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.84E-06
															Acrolein	7.88E-06	lb/MMBtu									8.88E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.46E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									1.04E-06
															Acenaphthene	4.68E-06	lb/MMBtu									5.27E-07
															Fluorene	1.28E-05	lb/MMBtu									1.44E-06
															Phenanthrene	4.08E-05	lb/MMBtu									4.60E-06
															Anthracene	1.23E-06	lb/MMBtu									1.39E-07
															Fluoranthene	4.03E-06	lb/MMBtu									4.54E-07
															Pyrene	3.71E-06	lb/MMBtu									4.18E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									7.01E-08
															Chrysene	1.53E-06	lb/MMBtu									1.72E-07
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.25E-07
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.46E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.89E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									4.66E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.90E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									6.26E-08
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.07	0.12	0.0001	0.008	0	13.78	0.0006	0.0001	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									6.56E-05
															Toluene	2.81E-04	lb/MMBtu									2.37E-05
															Xylenes	1.93E-04	lb/MMBtu									1.63E-05
															Formaldehyde	7.89E-05	lb/MMBtu									6.67E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.13E-06
															Acrolein	7.88E-06	lb/MMBtu									6.66E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.10E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									7.80E-07
															Acenaphthene	4.68E-06	lb/MMBtu									3.95E-07
															Fluorene	1.28E-05	lb/MMBtu									1.08E-06

Table H.65 Maximum Daily Gaseous Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 15	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 15								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Phenanthrene	4.08E-05	lb/MMBtu									3.45E-06
															Anthracene	1.23E-06	lb/MMBtu									1.04E-07
															Fluoranthene	4.03E-06	lb/MMBtu									3.40E-07
															Pyrene	3.71E-06	lb/MMBtu									3.13E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.25E-08
															Chrysene	1.53E-06	lb/MMBtu									1.29E-07
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									9.38E-08
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.84E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.17E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.50E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.92E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									4.70E-08
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.07	0.12	0.0001	0.008	0	13.78	0.0006	0.0001	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									6.56E-05
															Toluene	2.81E-04	lb/MMBtu									2.37E-05
															Xylenes	1.93E-04	lb/MMBtu									1.63E-05
															Formaldehyde	7.89E-05	lb/MMBtu									6.67E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.13E-06
															Acrolein	7.88E-06	lb/MMBtu									6.66E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.10E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									7.80E-07
															Acenaphthene	4.68E-06	lb/MMBtu									3.95E-07
															Fluorene	1.28E-05	lb/MMBtu									1.08E-06
															Phenanthrene	4.08E-05	lb/MMBtu									3.45E-06
															Anthracene	1.23E-06	lb/MMBtu									1.04E-07
															Fluoranthene	4.03E-06	lb/MMBtu									3.40E-07
															Pyrene	3.71E-06	lb/MMBtu									3.13E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.25E-08
															Chrysene	1.53E-06	lb/MMBtu									1.29E-07
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									9.38E-08
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.84E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.17E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.50E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.92E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									4.70E-08
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	24	hours	5.00	4.43	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.007	0.006	0.000009	0.0004	0	0.92	0.00004	0.000007	--
					50	kW									Benzene	9.33E-04	lb/MMBtu									5.25E-06
															Toluene	4.09E-04	lb/MMBtu									2.30E-06
															Xylenes	2.85E-04	lb/MMBtu									1.61E-06
															1,3-Butadiene	3.91E-05	lb/MMBtu									2.20E-07

Table H.65 Maximum Daily Gaseous Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 15	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 15								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Formaldehyde	1.18E-03	lb/MMBtu									6.65E-06
															Acetaldehyde	7.67E-04	lb/MMBtu									4.32E-06
															Acrolein	9.25E-05	lb/MMBtu									5.21E-07
															Naphthalene	8.48E-05	lb/MMBtu									4.78E-07
															Acenaphthylene	5.06E-06	lb/MMBtu									2.85E-08
															Acenaphthene	1.42E-06	lb/MMBtu									8.00E-09
															Fluorene	2.92E-05	lb/MMBtu									1.64E-07
															Phenanthrene	2.94E-05	lb/MMBtu									1.66E-07
															Anthracene	1.87E-06	lb/MMBtu									1.05E-08
															Fluoranthene	7.61E-06	lb/MMBtu									4.29E-08
															Pyrene	4.78E-06	lb/MMBtu									2.69E-08
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									9.46E-09
															Chrysene	3.53E-07	lb/MMBtu									1.99E-09
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									5.58E-10
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									8.73E-10
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									1.06E-09
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									2.11E-09
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									3.28E-09
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									2.75E-09
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	24	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.03	0.03	0.00005	0.002	0	5.48	0.0002	0.00004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									3.13E-05
															Toluene	4.09E-04	lb/MMBtu									1.37E-05
															Xylenes	2.85E-04	lb/MMBtu									9.58E-06
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.31E-06
															Formaldehyde	1.18E-03	lb/MMBtu									3.96E-05
															Acetaldehyde	7.67E-04	lb/MMBtu									2.58E-05
															Acrolein	9.25E-05	lb/MMBtu									3.11E-06
															Naphthalene	8.48E-05	lb/MMBtu									2.85E-06
															Acenaphthylene	5.06E-06	lb/MMBtu									1.70E-07
															Acenaphthene	1.42E-06	lb/MMBtu									4.77E-08
															Fluorene	2.92E-05	lb/MMBtu									9.81E-07
															Phenanthrene	2.94E-05	lb/MMBtu									9.88E-07
															Anthracene	1.87E-06	lb/MMBtu									6.28E-08
															Fluoranthene	7.61E-06	lb/MMBtu									2.56E-07
															Pyrene	4.78E-06	lb/MMBtu									1.61E-07
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									5.64E-08
															Chrysene	3.53E-07	lb/MMBtu									1.19E-08
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									3.33E-09
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									5.21E-09
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									6.32E-09

Table H.65 Maximum Daily Gaseous Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 15	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 15								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.26E-08
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.96E-08
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.64E-08
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	24	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.03	0.03	0.00005	0.002	0	5.48	0.0002	0.00004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									3.13E-05
															Toluene	4.09E-04	lb/MMBtu									1.37E-05
															Xylenes	2.85E-04	lb/MMBtu									9.58E-06
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.31E-06
															Formaldehyde	1.18E-03	lb/MMBtu									3.96E-05
															Acetaldehyde	7.67E-04	lb/MMBtu									2.58E-05
															Acrolein	9.25E-05	lb/MMBtu									3.11E-06
															Naphthalene	8.48E-05	lb/MMBtu									2.85E-06
															Acenaphthylene	5.06E-06	lb/MMBtu									1.70E-07
															Acenaphthene	1.42E-06	lb/MMBtu									4.77E-08
															Fluorene	2.92E-05	lb/MMBtu									9.81E-07
															Phenanthrene	2.94E-05	lb/MMBtu									9.88E-07
															Anthracene	1.87E-06	lb/MMBtu									6.28E-08
															Fluoranthene	7.61E-06	lb/MMBtu									2.56E-07
															Pyrene	4.78E-06	lb/MMBtu									1.61E-07
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									5.64E-08
															Chrysene	3.53E-07	lb/MMBtu									1.19E-08
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									3.33E-09
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									5.21E-09
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									6.32E-09
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.26E-08
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.96E-08
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.64E-08
Tanks																										
T01	C7 Distribution Tank (T-C7D)	C7DT	4-03-010-19	NF	24	hours	0	0	0	1.08E-01	0	0	0	0	--	--	lb/hr	0	0	0	0.001	0	0	0	0	--
T02	MIBC Storage Tank (T-MIBCS)	MST	4-90-999-98	NF	24	hours	0	0	0	3.53E-03	0	0	0	0	--	--	lb/hr	0	0	0	0.00004	0	0	0	0	--
T03	Diesel Fuel Storage Tank - Heavy Vehicles 1 (T-DFS-HV1)	DFSTHV	4-03-010-19	NF	24	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.0002	0	0	0	0	6.85E-08
															Benzene	2.74E-05	lb/hr									3.29E-07
															Toluene	3.18E-04	lb/hr									3.82E-06
															Ethylbenzene	4.45E-05	lb/hr									5.34E-07
															m-Xylene	8.23E-04	lb/hr									9.88E-06
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									8.11E-06
T04	Diesel Fuel Storage Tank - Heavy Vehicles 2 (T-DFS-HV2)	DFSTHV	4-03-010-19	NF	24	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.0002	0	0	0	0	6.85E-08
															Benzene	2.74E-05	lb/hr									3.29E-07
															Toluene	3.18E-04	lb/hr									3.82E-06
															Ethylbenzene	4.45E-05	lb/hr									5.34E-07

Table H.65 Maximum Daily Gaseous Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 15	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 15								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															m-Xylene	8.23E-04	lb/hr									9.88E-06
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									8.11E-06
Total Non-Fugitive Emissions (excluding tailpipe emissions):																		**0.39**	**0.63**	**0.0008**	**0.04**	**0.00005**	**88.36**	**0.004**	**0.0007**	**0.001**
Total Fugitive Emissions (excluding tailpipe emissions):																		**1.74**	**0.44**	**0.05**	**0.01**	**0**	**14.73**	**0.0006**	**0.0001**	**0.009**
Total Emissions (excluding tailpipe emissions):																		**2.13**	**1.07**	**0.05**	**0.05**	**0.00005**	**103.09**	**0.004**	**0.0008**	**0.01**
Tailpipe Emissions (see Tables H.70-H.74):																		**2.77**	**3.51**	**0.006**	**0.25**	**--**	**540.66**	**--**	**--**	**--**

[a] CO_2e emissions are calculcated by summing the individual greenhouse gas emissions multiplied by their global warming potential (GWP). GWP of CO_2 = 1, GWP of CH_4 = 21, GWP of N_2O = 310.

[b] All HAP emissions are included in the facility-wide potential to emit, regardless of if they are fugitive or non-fugitive emissions.

Table H.66 Hourly Gaseous Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 15	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 15								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
Mining																										
MN02	Blasting	Blast	3-05-020-09	F	52	tons ANFO	67.00	17.00	2.00	0	0	566	0.02	0.005	--	--	lb/tons ANFO	3,484.00	884.00	104.00	0	0	29,455.36	1.19	0.24	--
Solvent Extraction and Electrowinning																										
SXE01	Solvent Extraction	SX	4-90-001-99	F	1	hours	0	0	0	9.43E-05	0	0	0	0	Benzene	3.37E-07	lb/hr-ft^2	0	0	0	0.86	0	0	0	0	3.08E-03
	4 Primary Mix Tanks (7.75' D x 9.75' H each)	4 @ 47.2 = 188.7	ft^2		9,132.9	ft^2	Total Surface Area of Solvent Extraction								Toluene	4.82E-06	lb/hr-ft^2									4.40E-02
	4 Secondary Mix Tanks (9.5' D x 9.75' H each)	4 @ 70.9 = 283.5	ft^2												Ethylbenzene	2.05E-05	lb/hr-ft^2									1.87E-01
	3 Tertiary Mix Tanks (9.5' D x 9.75' H each)	3 @ 70.9 = 212.6	ft^2												Xylenes	2.80E-05	lb/hr-ft^2									2.56E-01
	4 Extraction Settlers (64' L x 33' W x 3.33' H each)	4 @ 2,112 = 8,448	ft^2												Others (including Hexane)	2.94E-05	lb/hr-ft^2									2.69E-01
SXE02	Electrowinning Commercial Cells (EWCC)	EW	none	NF	1	hours	0	0	0	0	1.57E-04	0	0	0	Cobalt Compounds	2.36E-08	lb/hr-ft^2	0	0	0	0	0.004	0	0	0	6.22E-07
	Controlled by Cell Ventilation Scrubbers (PC-EWCVS1/EWCVS3)				2,640	ft^2																				
					99	Control Efficiency (%)																				
Fuel Burning Equipment																										
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	1	hours	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	POM	3.30E-03	lb/1000 gal	0.22	0.88	0.009	0.009	0	1,016.78	0.04	0.008	1.45E-04
					6.0	MMBtu/hr									Formaldehyde	6.10E-02	lb/1000 gal									2.67E-03
															Arsenic	4.00	lb/10^{12} Btu									2.40E-05
															Beryllium	3.00	lb/10^{12} Btu									1.80E-05
															Cadmium	3.00	lb/10^{12} Btu									1.80E-05
															Chromium	3.00	lb/10^{12} Btu									1.80E-05
															Lead	9.00	lb/10^{12} Btu									5.40E-05
															Mercury	3.00	lb/10^{12} Btu									1.80E-05
															Manganese	6.00	lb/10^{12} Btu									3.60E-05
															Nickel	3.00	lb/10^{12} Btu									1.80E-05
															Selenium	15.00	lb/10^{12} Btu									9.00E-05
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	7.72	13.23	0.01	0.88	0	1,530.61	0.06	0.01	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									7.28E-03
															Toluene	2.81E-04	lb/MMBtu									2.64E-03
															Xylenes	1.93E-04	lb/MMBtu									1.81E-03
															Formaldehyde	7.89E-05	lb/MMBtu									7.41E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									2.37E-04
															Acrolein	7.88E-06	lb/MMBtu									7.40E-05
															Naphthalene	1.30E-04	lb/MMBtu									1.22E-03
															Acenaphthylene	9.23E-06	lb/MMBtu									8.66E-05
															Acenaphthene	4.68E-06	lb/MMBtu									4.39E-05
															Fluorene	1.28E-05	lb/MMBtu									1.20E-04
															Phenanthrene	4.08E-05	lb/MMBtu									3.83E-04
															Anthracene	1.23E-06	lb/MMBtu									1.15E-05
															Fluoranthene	4.03E-06	lb/MMBtu									3.78E-05
															Pyrene	3.71E-06	lb/MMBtu									3.48E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.84E-06
															Chrysene	1.53E-06	lb/MMBtu									1.44E-05

Table H.66 Hourly Gaseous Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 15	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 15								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.04E-05
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.05E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.41E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.89E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.25E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									5.22E-06
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	7.72	13.23	0.01	0.88	0	1,530.61	0.06	0.01	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									7.28E-03
															Toluene	2.81E-04	lb/MMBtu									2.64E-03
															Xylenes	1.93E-04	lb/MMBtu									1.81E-03
															Formaldehyde	7.89E-05	lb/MMBtu									7.41E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									2.37E-04
															Acrolein	7.88E-06	lb/MMBtu									7.40E-05
															Naphthalene	1.30E-04	lb/MMBtu									1.22E-03
															Acenaphthylene	9.23E-06	lb/MMBtu									8.66E-05
															Acenaphthene	4.68E-06	lb/MMBtu									4.39E-05
															Fluorene	1.28E-05	lb/MMBtu									1.20E-04
															Phenanthrene	4.08E-05	lb/MMBtu									3.83E-04
															Anthracene	1.23E-06	lb/MMBtu									1.15E-05
															Fluoranthene	4.03E-06	lb/MMBtu									3.78E-05
															Pyrene	3.71E-06	lb/MMBtu									3.48E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.84E-06
															Chrysene	1.53E-06	lb/MMBtu									1.44E-05
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.04E-05
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.05E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.41E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.89E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.25E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									5.22E-06
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	5.79	9.92	0.01	0.66	0	1,147.96	0.05	0.009	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									5.46E-03
															Toluene	2.81E-04	lb/MMBtu									1.98E-03
															Xylenes	1.93E-04	lb/MMBtu									1.36E-03
															Formaldehyde	7.89E-05	lb/MMBtu									5.55E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									1.77E-04
															Acrolein	7.88E-06	lb/MMBtu									5.55E-05
															Naphthalene	1.30E-04	lb/MMBtu									9.15E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									6.50E-05
															Acenaphthene	4.68E-06	lb/MMBtu									3.29E-05
															Fluorene	1.28E-05	lb/MMBtu									9.01E-05

Table H.66 Hourly Gaseous Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 15	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 15								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Phenanthrene	4.08E-05	lb/MMBtu									2.87E-04
															Anthracene	1.23E-06	lb/MMBtu									8.66E-06
															Fluoranthene	4.03E-06	lb/MMBtu									2.84E-05
															Pyrene	3.71E-06	lb/MMBtu									2.61E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									4.38E-06
															Chrysene	1.53E-06	lb/MMBtu									1.08E-05
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									7.81E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.53E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									1.81E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									2.91E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.44E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									3.91E-06
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	5.79	9.92	0.01	0.66	0	1,147.96	0.05	0.009	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									5.46E-03
															Toluene	2.81E-04	lb/MMBtu									1.98E-03
															Xylenes	1.93E-04	lb/MMBtu									1.36E-03
															Formaldehyde	7.89E-05	lb/MMBtu									5.55E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									1.77E-04
															Acrolein	7.88E-06	lb/MMBtu									5.55E-05
															Naphthalene	1.30E-04	lb/MMBtu									9.15E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									6.50E-05
															Acenaphthene	4.68E-06	lb/MMBtu									3.29E-05
															Fluorene	1.28E-05	lb/MMBtu									9.01E-05
															Phenanthrene	4.08E-05	lb/MMBtu									2.87E-04
															Anthracene	1.23E-06	lb/MMBtu									8.66E-06
															Fluoranthene	4.03E-06	lb/MMBtu									2.84E-05
															Pyrene	3.71E-06	lb/MMBtu									2.61E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									4.38E-06
															Chrysene	1.53E-06	lb/MMBtu									1.08E-05
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									7.81E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.53E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									1.81E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									2.91E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.44E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									3.91E-06
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	1	hours	5.00	4.43	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.55	0.49	0.0007	0.03	0	76.53	0.003	0.0006	--
					50	kW									Benzene	9.33E-04	lb/MMBtu									4.38E-04
															Toluene	4.09E-04	lb/MMBtu									1.92E-04
															Xylenes	2.85E-04	lb/MMBtu									1.34E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.84E-05

Table H.66 Hourly Gaseous Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 15	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 15								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Formaldehyde	1.18E-03	lb/MMBtu									5.54E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									3.60E-04
															Acrolein	9.25E-05	lb/MMBtu									4.34E-05
															Naphthalene	8.48E-05	lb/MMBtu									3.98E-05
															Acenaphthylene	5.06E-06	lb/MMBtu									2.37E-06
															Acenaphthene	1.42E-06	lb/MMBtu									6.66E-07
															Fluorene	2.92E-05	lb/MMBtu									1.37E-05
															Phenanthrene	2.94E-05	lb/MMBtu									1.38E-05
															Anthracene	1.87E-06	lb/MMBtu									8.78E-07
															Fluoranthene	7.61E-06	lb/MMBtu									3.57E-06
															Pyrene	4.78E-06	lb/MMBtu									2.24E-06
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									7.89E-07
															Chrysene	3.53E-07	lb/MMBtu									1.66E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									4.65E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									7.28E-08
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									8.82E-08
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.76E-07
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									2.74E-07
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									2.30E-07
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	1	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	2.30	2.46	0.004	0.18	0	456.55	0.02	0.004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									2.61E-03
															Toluene	4.09E-04	lb/MMBtu									1.15E-03
															Xylenes	2.85E-04	lb/MMBtu									7.98E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.09E-04
															Formaldehyde	1.18E-03	lb/MMBtu									3.30E-03
															Acetaldehyde	7.67E-04	lb/MMBtu									2.15E-03
															Acrolein	9.25E-05	lb/MMBtu									2.59E-04
															Naphthalene	8.48E-05	lb/MMBtu									2.37E-04
															Acenaphthylene	5.06E-06	lb/MMBtu									1.42E-05
															Acenaphthene	1.42E-06	lb/MMBtu									3.98E-06
															Fluorene	2.92E-05	lb/MMBtu									8.18E-05
															Phenanthrene	2.94E-05	lb/MMBtu									8.23E-05
															Anthracene	1.87E-06	lb/MMBtu									5.24E-06
															Fluoranthene	7.61E-06	lb/MMBtu									2.13E-05
															Pyrene	4.78E-06	lb/MMBtu									1.34E-05
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									4.70E-06
															Chrysene	3.53E-07	lb/MMBtu									9.88E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									2.77E-07
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									4.34E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									5.26E-07

Table H.66 Hourly Gaseous Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 15	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 15								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.05E-06
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.63E-06
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.37E-06
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	1	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	2.30	2.46	0.004	0.18	0	456.55	0.02	0.004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									2.61E-03
															Toluene	4.09E-04	lb/MMBtu									1.15E-03
															Xylenes	2.85E-04	lb/MMBtu									7.98E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.09E-04
															Formaldehyde	1.18E-03	lb/MMBtu									3.30E-03
															Acetaldehyde	7.67E-04	lb/MMBtu									2.15E-03
															Acrolein	9.25E-05	lb/MMBtu									2.59E-04
															Naphthalene	8.48E-05	lb/MMBtu									2.37E-04
															Acenaphthylene	5.06E-06	lb/MMBtu									1.42E-05
															Acenaphthene	1.42E-06	lb/MMBtu									3.98E-06
															Fluorene	2.92E-05	lb/MMBtu									8.18E-05
															Phenanthrene	2.94E-05	lb/MMBtu									8.23E-05
															Anthracene	1.87E-06	lb/MMBtu									5.24E-06
															Fluoranthene	7.61E-06	lb/MMBtu									2.13E-05
															Pyrene	4.78E-06	lb/MMBtu									1.34E-05
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									4.70E-06
															Chrysene	3.53E-07	lb/MMBtu									9.88E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									2.77E-07
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									4.34E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									5.26E-07
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.05E-06
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.63E-06
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.37E-06
Tanks																										
T01	C7 Distribution Tank (T-C7D)	C7DT	4-03-010-19	NF	1	hours	0	0	0	1.08E-01	0	0	0	0	--	--	lb/hr	0	0	0	0.11	0	0	0	0	--
T02	MIBC Storage Tank (T-MIBCS)	MST	4-90-999-98	NF	1	hours	0	0	0	3.53E-03	0	0	0	0	--	--	lb/hr	0	0	0	0.004	0	0	0	0	--
T03	Diesel Fuel Storage Tank - Heavy Vehicles 1 (T-DFS-HV1)	DFSTHV	4-03-010-19	NF	1	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.01	0	0	0	0	5.71E-06
															Benzene	2.74E-05	lb/hr									2.74E-05
															Toluene	3.18E-04	lb/hr									3.18E-04
															Ethylbenzene	4.45E-05	lb/hr									4.45E-05
															m-Xylene	8.23E-04	lb/hr									8.23E-04
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									6.76E-04
T04	Diesel Fuel Storage Tank - Heavy Vehicles 2 (T-DFS-HV2)	DFSTHV	4-03-010-19	NF	1	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.01	0	0	0	0	5.71E-06
															Benzene	2.74E-05	lb/hr									2.74E-05
															Toluene	3.18E-04	lb/hr									3.18E-04
															Ethylbenzene	4.45E-05	lb/hr									4.45E-05

Table H.66 Hourly Gaseous Emissions - Year 15

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 15	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 15								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															m-Xylene	8.23E-04	lb/hr									8.23E-04
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									6.76E-04
Total Non-Fugitive Emissions (excluding tailpipe emissions):																		**32.38**	**52.57**	**0.07**	**3.61**	**0.004**	**7,363.56**	**0.30**	**0.06**	**0.08**
Total Fugitive Emissions (excluding tailpipe emissions):																		**3,484.00**	**884.00**	**104.00**	**0.86**	**0**	**29,455.36**	**1.19**	**0.24**	**0.76**
Total Emissions (excluding tailpipe emissions):																		**3,516.38**	**936.57**	**104.07**	**4.48**	**0.004**	**36,818.92**	**1.49**	**0.30**	**0.84**
Tailpipe Emissions (see Tables H.70-H.74):																		**231.23**	**293.98**	**1.00**	**20.72**	**--**	**46,891.47**	**--**	**--**	**--**

[a] CO_2e emissions are calculcated by summing the individual greenhouse gas emissions multiplied by their global warming potential (GWP). GWP of CO_2 = 1, GWP of CH_4 = 21, GWP of N_2O = 310.

[b] All HAP emissions are included in the facility-wide potential to emit, regardless of if they are fugitive or non-fugitive emissions.

Table H.67 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.15	g/hp-hr	7.01	0.08	23.14
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.03	g/hp-hr	0.33	0.004	1.10
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.03	g/hp-hr	0.04	0.0005	0.19
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.02	0.0002	0.07
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.003	0.00004	0.01
Rubber Tired Dozers, 834H Class	3	498	0.58	14	5,075	hours	0.575	0.01	g/hp-hr	0.01	0.0001	0.05
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	0.03	g/hp-hr	0.06	0.0007	0.20
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.03	g/hp-hr	0.06	0.0008	0.28
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.003	0.00004	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.15	g/hp-hr	0.70	0.008	3.08
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.01	g/hp-hr	0.007	0.00009	0.03
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.0007	0.000009	0.003

Table H.67 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.007
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.04	0.0005	0.17
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.008	0.0001	0.04
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.2117	g/mile	0.004	0.00005	0.02
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.2117	g/mile	0.00005	0.0000006	0.0002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.001	0.00002	0.006
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.02	g/hp-hr	0.004	0.00005	0.02
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00003	0.01
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000008	0.003
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000009	0.003
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.002	0.00002	0.009
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.01	g/hp-hr	0.0006	0.000007	0.003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.004

Table H.67 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.005
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.002	0.00002	0.009
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.2117	g/mile	0.0002	0.000002	0.0007
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.008
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.0005	0.000006	0.002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.005	0.00006	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.01	g/hp-hr	0.002	0.00003	0.01
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.02	g/hp-hr	0.001	0.00002	0.006
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.07	0.0009	0.32
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.2117	g/mile	0.0004	0.000005	0.002
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.2117	g/mile	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.02	g/hp-hr	0.06	0.0007	0.25
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.01	g/hp-hr	0.004	0.00005	0.001
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.01	g/hp-hr	0.009	0.0001	0.002
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.2117	g/mile	0.01	0.0002	0.04
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.2117	g/mile	0.003	0.000004	0.0005
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.2117	g/mile	0.01	0.00003	0.01

Table H.67 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 15

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.2117	g/mile	0.007	0.000005	0.001
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.001
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.2117	g/mile	0.003	0.000006	0.001
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.2117	g/mile	0.003	0.00001	0.003
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.2117	g/mile	0.003	0.000002	0.0003
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	0.0255	g/mile	0.002	0.00002	0.007
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	0.0255	g/mile	0.0002	0.000002	0.0007
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	0.0255	g/mile	0.0004	0.000005	0.002
Total Emissions from Haul Truck Engines:										**7.35**	**0.09**	**24.24**
Total Emissions from Other Mobile Engines:										**1.25**	**0.01**	**5.14**
Total Emissions from All Mobile Engines:										**8.59**	**0.10**	**29.38**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.68 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.15	g/hp-hr	7.01	0.08	23.14
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.03	g/hp-hr	0.33	0.004	1.10
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.03	g/hp-hr	0.04	0.0005	0.19
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.02	0.0002	0.07
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.003	0.00004	0.01
Rubber Tired Dozers, 834H Class	3	498	0.58	14	5,075	hours	0.575	0.01	g/hp-hr	0.01	0.0001	0.05
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	0.03	g/hp-hr	0.06	0.0007	0.20
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.03	g/hp-hr	0.06	0.0008	0.28
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.003	0.00004	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.15	g/hp-hr	0.70	0.008	3.08
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.01	g/hp-hr	0.007	0.00009	0.03
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.0007	0.000009	0.003

Table H.68 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.007
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.04	0.0005	0.17
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.008	0.0001	0.04
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.2117	g/mile	0.004	0.00005	0.02
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.2117	g/mile	0.00005	0.0000006	0.0002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.001	0.00002	0.006
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.02	g/hp-hr	0.004	0.00005	0.02
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00003	0.01
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Copper Cathode Forklift	1	92.5	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000008	0.003
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000009	0.003
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.002	0.00002	0.009
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.01	g/hp-hr	0.0006	0.000007	0.003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.004

Table H.68 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.005
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.002	0.00002	0.009
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.2117	g/mile	0.0002	0.000002	0.0007
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.008
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.0005	0.000006	0.002
Truck Shop Bridge Crane, 25 tons	1	24.1	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.005	0.00006	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.40	0.01	g/hp-hr	0.002	0.00003	0.01
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.30	0.02	g/hp-hr	0.001	0.00002	0.006
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.07	0.0009	0.32
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.2117	g/mile	0.0004	0.000005	0.002
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.2117	g/mile	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.02	g/hp-hr	0.06	0.0007	0.25
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.01	g/hp-hr	0.004	0.00005	0.001
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.01	g/hp-hr	0.009	0.0001	0.002
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.2117	g/mile	0.01	0.0002	0.04
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.2117	g/mile	0.003	0.000004	0.0005
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.2117	g/mile	0.01	0.00003	0.01

Table H.68 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 15

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.2117	g/mile	0.007	0.000005	0.001
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.001
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.2117	g/mile	0.003	0.000006	0.001
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.2117	g/mile	0.003	0.00001	0.003
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.2117	g/mile	0.003	0.000002	0.0003
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	0.0255	g/mile	0.002	0.00002	0.007
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	0.0255	g/mile	0.0002	0.000002	0.0007
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	0.0255	g/mile	0.0004	0.000005	0.002
Total Emissions from Haul Truck Engines:										**7.35**	**0.09**	**24.24**
Total Emissions from Other Mobile Engines:										**1.25**	**0.01**	**5.14**
Total Emissions from All Mobile Engies:										**8.59**	**0.10**	**29.38**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.69 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.15	g/hp-hr	7.01	0.08	23.14
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.03	g/hp-hr	0.33	0.004	1.10
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.03	g/hp-hr	0.04	0.0005	0.19
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.02	0.0002	0.07
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.003	0.00004	0.01
Rubber Tired Dozers, 834H Class	3	498	0.58	14	5,075	hours	0.575	0.01	g/hp-hr	0.01	0.0001	0.05
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	0.03	g/hp-hr	0.06	0.0007	0.20
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.03	g/hp-hr	0.06	0.0008	0.28
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.003	0.00004	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.15	g/hp-hr	0.70	0.008	3.08
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.01	g/hp-hr	0.007	0.00009	0.03
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.0007	0.000009	0.003

Table H.69 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.007
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.04	0.0005	0.17
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.008	0.0001	0.04
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.2117	g/mile	0.004	0.00005	0.02
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.2117	g/mile	0.00005	0.0000006	0.0002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.001	0.00002	0.006
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.02	g/hp-hr	0.004	0.00005	0.02
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00003	0.01
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000008	0.003
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000009	0.003
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.002	0.00002	0.009
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.01	g/hp-hr	0.0006	0.000007	0.003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.004

Table H.69 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.005
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.002	0.00002	0.009
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.2117	g/mile	0.0002	0.000002	0.0007
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.008
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.0005	0.000006	0.002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.005	0.00006	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.01	g/hp-hr	0.002	0.00003	0.01
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.02	g/hp-hr	0.001	0.00002	0.006
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.07	0.0009	0.32
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.2117	g/mile	0.0004	0.000005	0.002
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.2117	g/mile	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.02	g/hp-hr	0.06	0.0007	0.25
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.01	g/hp-hr	0.004	0.00005	0.001
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.01	g/hp-hr	0.009	0.0001	0.002
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.2117	g/mile	0.01	0.0002	0.04
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.2117	g/mile	0.003	0.000004	0.0005
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.2117	g/mile	0.01	0.00003	0.01

Table H.69 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 15

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.2117	g/mile	0.007	0.000005	0.001
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.001
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.2117	g/mile	0.003	0.000006	0.001
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.2117	g/mile	0.003	0.00001	0.003
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.2117	g/mile	0.003	0.000002	0.0003
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	0.0255	g/mile	0.002	0.00002	0.007
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	0.0255	g/mile	0.0002	0.000002	0.0007
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	0.0255	g/mile	0.0004	0.000005	0.002
Total Emissions from Haul Truck Engines:										**7.35**	**0.09**	**24.24**
Total Emissions from Other Mobile Engines:										**1.25**	**0.01**	**5.14**
Total Emissions from All Mobile Engines:										**8.59**	**0.10**	**29.38**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.70 CO Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	CO Emission Factor		CO Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	2.60	g/hp-hr	121.52	1.46	401.01
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	2.60	g/hp-hr	29.16	0.35	96.24
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	2.60	g/hp-hr	3.84	0.05	16.81
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	2.60	g/hp-hr	3.93	0.05	17.20
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	2.60	g/hp-hr	0.77	0.009	3.36
Rubber Tired Dozers, 834H Class	3	498	0.58	14	5,075	hours	0.575	2.60	g/hp-hr	2.85	0.03	12.49
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	2.60	g/hp-hr	1.20	0.01	5.27
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	2.60	g/hp-hr	1.34	0.02	5.87
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	2.60	g/hp-hr	4.82	0.06	17.58
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	5.55	0.07	24.29
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.79	0.009	3.44
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	2.60	g/hp-hr	12.17	0.15	53.33
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.66	0.02	7.29
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.66	0.02	7.29
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.29	0.02	5.67
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	2.60	g/hp-hr	1.30	0.02	5.67
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	2.60	g/hp-hr	1.85	0.02	8.11
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	3.70	g/hp-hr	0.27	0.003	1.16

Table H.70 CO Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	CO Emission Factor		CO Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.43	0.005	1.86
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	3.42	0.04	15.00
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	2.60	g/hp-hr	2.12	0.03	9.27
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	1.870	g/mile	0.04	0.0004	0.15
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	1.870	g/mile	0.0005	0.000006	0.002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.32	0.004	1.42
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.50	0.006	2.18
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	4.10	g/hp-hr	0.82	0.01	3.58
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.59	0.007	2.59
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.58	0.007	2.53
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.33	0.004	1.46
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.33	0.004	1.46
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	2.60	g/hp-hr	0.18	0.002	0.79
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	2.60	g/hp-hr	0.19	0.002	0.83
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	2.60	g/hp-hr	0.53	0.006	2.30
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	3.70	g/hp-hr	0.23	0.003	1.00
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.59	0.007	2.59
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.18	0.002	0.79

Table H.70 CO Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	CO Emission Factor		CO Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.23	0.003	1.00
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.36	0.004	1.58
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.29	0.02	5.67
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	1.870	g/mile	0.001	0.00002	0.006
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.49	0.006	2.16
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	3.70	g/hp-hr	0.20	0.002	0.86
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	4.90	g/hp-hr	0.08	0.001	0.37
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	3.70	g/hp-hr	0.85	0.01	3.71
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	3.70	g/hp-hr	0.27	0.003	1.17
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	6.39	0.08	28.00
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	1.870	g/mile	0.004	0.00004	0.02
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	1.870	g/mile	0.02	0.0003	0.10
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	2.60	g/hp-hr	7.45	0.09	32.61
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	2.60	g/hp-hr	1.15	0.01	0.29
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	3.70	g/hp-hr	3.26	0.04	0.82
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	1.870	g/mile	0.12	0.002	0.35
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	1.870	g/mile	0.03	0.00003	0.004
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	1.870	g/mile	0.09	0.0003	0.11

Table H.70 CO Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	CO Emission Factor		CO Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	1.870	g/mile	0.06	0.0001	0.04
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	1.870	g/mile	0.06	0.00005	0.01
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	1.870	g/mile	0.06	0.0001	0.04
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	1.870	g/mile	0.06	0.00009	0.01
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	1.870	g/mile	0.03	0.00005	0.01
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	1.870	g/mile	0.03	0.0001	0.03
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	1.870	g/mile	0.03	0.00002	0.002
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	15.51	g/mile	0.94	0.01	4.10
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	15.51	g/mile	0.09	0.001	0.41
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	15.51	g/mile	0.23	0.003	1.03
Total Emissions from Haul Truck Engines:										**150.68**	**1.81**	**497.25**
Total Emissions from Other Mobile Engines:										**80.55**	**0.96**	**329.14**
Total Emissions from All Mobile Engines:										**231.23**	**2.77**	**826.39**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.71 NO_x Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	4.50	g/hp-hr	210.32	2.52	694.06
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	2.61	g/hp-hr	29.28	0.35	96.61
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	2.60	g/hp-hr	3.84	0.05	16.81
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.30	g/hp-hr	0.45	0.005	1.99
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.30	g/hp-hr	0.09	0.001	0.39
Rubber Tired Dozers, 834H Class	3	498	0.58	14	5,075	hours	0.575	0.30	g/hp-hr	0.33	0.004	1.44
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.30	g/hp-hr	0.14	0.002	0.61
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.30	g/hp-hr	0.15	0.002	0.68
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	2.60	g/hp-hr	4.82	0.06	17.58
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	5.55	0.07	24.29
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.09	0.001	0.40
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	4.50	g/hp-hr	21.07	0.25	92.29
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.19	0.002	0.84
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.19	0.002	0.84
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.15	0.002	0.65
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.30	g/hp-hr	0.15	0.002	0.65
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.30	g/hp-hr	0.21	0.003	0.94
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.30	g/hp-hr	0.02	0.0003	0.09

Table H.71 NO_x Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.05	0.0006	0.21
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	3.42	0.04	15.00
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.30	g/hp-hr	0.24	0.003	1.07
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	7.394	g/mile	0.14	0.002	0.61
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	7.394	g/mile	0.002	0.00002	0.008
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.03	0.0003	0.12
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.04	0.0005	0.18
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	3.30	g/hp-hr	0.66	0.008	2.88
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.07	0.0008	0.30
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.05	0.0006	0.21
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.03	0.0003	0.12
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.03	0.0003	0.12
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.30	g/hp-hr	0.02	0.0003	0.09
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.30	g/hp-hr	0.02	0.0003	0.10
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.30	g/hp-hr	0.06	0.0007	0.27
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.30	g/hp-hr	0.02	0.0002	0.08
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.05	0.0006	0.21
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	3.30	g/hp-hr	0.16	0.002	0.71

Table H.71 NO_x Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	3.30	g/hp-hr	0.20	0.002	0.89
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	3.30	g/hp-hr	0.32	0.004	1.41
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.15	0.002	0.65
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	7.394	g/mile	0.006	0.00007	0.02
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.06	0.0007	0.25
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.02	0.0002	0.07
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	5.00	g/hp-hr	0.09	0.001	0.38
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.30	g/hp-hr	0.07	0.0008	0.30
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	3.30	g/hp-hr	0.24	0.003	1.05
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	6.39	0.08	28.00
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	7.394	g/mile	0.01	0.0002	0.06
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	7.394	g/mile	0.09	0.001	0.39
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.50	g/hp-hr	1.43	0.02	6.27
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.30	g/hp-hr	0.13	0.002	0.03
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.30	g/hp-hr	0.26	0.003	0.07
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	7.394	g/mile	0.48	0.008	1.38
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	7.394	g/mile	0.12	0.0001	0.02
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	7.394	g/mile	0.36	0.001	0.42

Table H.71 NO_x Emissions from Fuel Burning Mobile Engines - Year 15

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	7.394	g/mile	0.24	0.0004	0.16
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	7.394	g/mile	0.24	0.0002	0.05
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	7.394	g/mile	0.24	0.0004	0.14
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	7.394	g/mile	0.24	0.0003	0.04
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	7.394	g/mile	0.12	0.0002	0.05
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	7.394	g/mile	0.12	0.0004	0.10
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	7.394	g/mile	0.12	0.00006	0.009
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	1.145	g/mile	0.07	0.0008	0.30
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	1.145	g/mile	0.007	0.00008	0.03
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	1.145	g/mile	0.02	0.0002	0.08
Total Emissions from Haul Truck Engines:										**239.60**	**2.88**	**790.67**
Total Emissions from Other Mobile Engines:										**54.38**	**0.64**	**225.37**
Total Emissions from All Mobile Engines:										**293.98**	**3.51**	**1,016.04**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.72 SO_2 Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 15		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 15	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.002	g/hp-hr	0.24	0.003	0.78
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.002	g/hp-hr	0.06	0.0007	0.19
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.003	g/hp-hr	0.007	0.00008	0.03
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.002	g/hp-hr	0.005	0.00006	0.02
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.002	g/hp-hr	0.0008	0.00001	0.004
Rubber Tired Dozers, 834H Class	3	498	0.58	14	5,075	hours	0.575	0.002	g/hp-hr	0.004	0.00005	0.02
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.002	g/hp-hr	0.001	0.00002	0.006
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.003	g/hp-hr	0.002	0.00003	0.01
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	0.003	g/hp-hr	0.02	0.0002	0.06
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.008	0.0001	0.04
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.001	0.00001	0.005
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.001	g/hp-hr	0.01	0.0001	0.05
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00003	0.01
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00003	0.01
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00002	0.008
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.002	g/hp-hr	0.001	0.00002	0.006
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.001	g/hp-hr	0.003	0.00003	0.01
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.002	g/hp-hr	0.0003	0.000004	0.001

Table H.72 SO_2 Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 15		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 15	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0006	0.000007	0.003
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.004	0.00004	0.02
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.002	g/hp-hr	0.004	0.00005	0.02
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.005	0.00006	0.02
Tire Handler	1	90	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0002	0.000003	0.001
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000003	0.001
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0004	0.000004	0.002
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.003	g/hp-hr	0.001	0.00002	0.006
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0009	0.00001	0.004
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0004	0.000005	0.002
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000003	0.001
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000003	0.001
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.002	g/hp-hr	0.0005	0.000006	0.002
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.002	g/hp-hr	0.0006	0.000007	0.002
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.002	g/hp-hr	0.0009	0.00001	0.004
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.002	g/hp-hr	0.0004	0.000005	0.002
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0004	0.000005	0.002
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0001	0.000002	0.0006

Table H.72 SO_2 Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 15		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 15	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000002	0.0007
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0003	0.000003	0.001
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00002	0.008
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0007	0.000008	0.003
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0007	0.000009	0.003
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0002	0.000002	0.0009
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.00006	0.0000008	0.0003
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.40	0.002	g/hp-hr	0.0009	0.00001	0.004
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.002	g/hp-hr	0.0004	0.000005	0.002
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.007	0.00008	0.03
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.001	0.00001	0.005
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.001	g/hp-hr	0.009	0.0001	0.04
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.021	g/hp-hr	0.009	0.0001	0.002
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.021	g/hp-hr	0.02	0.0002	0.005
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.43	0.002	g/hp-hr	0.002	0.00001	0.005
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.43	0.124	g/hp-hr	0.12	0.00006	0.005
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.43	0.005	g/hp-hr	0.005	0.00001	0.005

Table H.72 SO_2 Emissions from Fuel Burning Mobile Engines - Year 15

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 15		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 15	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.43	0.014	g/hp-hr	0.01	0.00001	0.005
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.43	0.045	g/hp-hr	0.05	0.00002	0.005
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.43	0.016	g/hp-hr	0.02	0.00002	0.006
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.43	0.053	g/hp-hr	0.05	0.00003	0.005
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.43	0.042	g/hp-hr	0.04	0.00002	0.005
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.43	0.021	g/hp-hr	0.02	0.00001	0.005
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.43	0.240	g/hp-hr	0.24	0.0001	0.005
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	0.54	0.017	g/hp-hr	0.003	0.00004	0.01
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	0.54	0.0025	g/hp-hr	0.0005	0.000006	0.002
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	0.54	0.017	g/hp-hr	0.002	0.00003	0.01
Total Emissions from Haul Truck Engines:										**0.29**	**0.004**	**0.96**
Total Emissions from Other Mobile Engines:										**0.71**	**0.002**	**0.57**
Total Emissions from All Mobile Engines:										**1.00**	**0.006**	**1.54**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.73 VOC Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.30	g/hp-hr	14.02	0.17	46.27
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.14	g/hp-hr	1.59	0.02	5.24
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.14	g/hp-hr	0.21	0.002	0.91
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.14	g/hp-hr	0.21	0.003	0.93
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.14	g/hp-hr	0.04	0.0005	0.18
Rubber Tired Dozers, 834H Class	3	498	0.58	14	5,075	hours	0.575	0.14	g/hp-hr	0.15	0.002	0.67
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.14	g/hp-hr	0.06	0.0008	0.28
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.14	g/hp-hr	0.07	0.0009	0.32
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	0.14	g/hp-hr	0.26	0.003	0.95
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.30	0.004	1.31
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.04	0.0005	0.19
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.30	g/hp-hr	1.40	0.02	6.15
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.09	0.001	0.39
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.09	0.001	0.39
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.07	0.0008	0.31
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.14	g/hp-hr	0.07	0.0008	0.31
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.14	g/hp-hr	0.10	0.001	0.44
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.14	g/hp-hr	0.01	0.0001	0.04

Table H.73 VOC Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.02	0.0003	0.10
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.18	0.002	0.81
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.14	g/hp-hr	0.11	0.001	0.50
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.403	g/mile	0.008	0.00009	0.03
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.403	g/mile	0.0001	0.000001	0.0004
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.01	0.0001	0.05
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.02	0.0002	0.08
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.20	g/hp-hr	0.04	0.0005	0.17
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.03	0.0004	0.14
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.02	0.0003	0.10
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.01	0.0002	0.06
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.01	0.0002	0.06
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.14	g/hp-hr	0.01	0.0001	0.04
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.14	g/hp-hr	0.01	0.0001	0.04
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.14	g/hp-hr	0.03	0.0003	0.12
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.14	g/hp-hr	0.009	0.0001	0.04
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.02	0.0003	0.10
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.20	g/hp-hr	0.01	0.0001	0.04

Table H.73 VOC Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.20	g/hp-hr	0.01	0.0001	0.05
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.20	g/hp-hr	0.02	0.0002	0.09
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.07	0.0008	0.31
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.403	g/mile	0.0003	0.000004	0.001
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.03	0.0003	0.12
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.007	0.00009	0.03
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.60	g/hp-hr	0.01	0.0001	0.05
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.14	g/hp-hr	0.03	0.0004	0.14
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.20	g/hp-hr	0.01	0.0002	0.06
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.34	0.004	1.51
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.403	g/mile	0.0008	0.000009	0.003
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.403	g/mile	0.005	0.00006	0.02
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.14	g/hp-hr	0.40	0.005	1.76
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.14	g/hp-hr	0.06	0.0007	0.02
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.14	g/hp-hr	0.12	0.001	0.03
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.403	g/mile	0.03	0.0005	0.08
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.403	g/mile	0.007	0.000007	0.001
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.403	g/mile	0.02	0.00006	0.02

Table H.73 VOC Emissions from Fuel Burning Mobile Engines - Year 15

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 15		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.403	g/mile	0.01	0.00002	0.008
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.403	g/mile	0.01	0.00001	0.003
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.403	g/mile	0.01	0.00002	0.008
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.403	g/mile	0.01	0.00002	0.002
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.403	g/mile	0.007	0.00001	0.003
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.403	g/mile	0.007	0.00002	0.006
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.403	g/mile	0.007	0.000003	0.0005
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	1.329	g/mile	0.08	0.001	0.35
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	1.329	g/mile	0.008	0.0001	0.04
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	1.329	g/mile	0.02	0.0002	0.09
Total Emissions from Haul Truck Engines:										**15.61**	**0.19**	**51.52**
Total Emissions from Other Mobile Engines:										**5.11**	**0.06**	**21.02**
Total Emissions from All Mobile Engines:										**20.72**	**0.25**	**72.54**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.74 CO_2 Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 15		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	497	g/hp-hr	23,241.93	278.90	76,698.38
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	497	g/hp-hr	5,578.06	66.94	18,407.61
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	497	g/hp-hr	734.01	8.81	3,214.95
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	497	g/hp-hr	751.28	9.02	3,290.60
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	497	g/hp-hr	146.56	1.76	641.95
Rubber Tired Dozers, 834H Class	3	498	0.58	14	5,075	hours	0.575	497	g/hp-hr	545.62	6.55	2,389.80
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	497	g/hp-hr	230.13	2.76	1,007.98
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	497	g/hp-hr	256.47	3.08	1,123.34
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	497	g/hp-hr	921.12	11.05	3,362.08
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	497	g/hp-hr	1,060.69	12.73	4,645.81
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	497	g/hp-hr	150.26	1.80	658.16
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	497	g/hp-hr	2,328.58	27.94	10,199.17
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	497	g/hp-hr	318.21	3.82	1,393.74
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	497	g/hp-hr	318.21	3.82	1,393.74
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	497	g/hp-hr	247.49	2.97	1,084.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	497	g/hp-hr	247.74	2.97	1,085.10
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	497	g/hp-hr	354.32	4.25	1,551.92
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	497	g/hp-hr	35.69	0.43	156.30

Table H.74 CO_2 Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 15		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	497	g/hp-hr	81.32	0.98	356.18
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	497	g/hp-hr	654.91	7.86	2,868.52
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	497	g/hp-hr	404.62	4.86	1,772.25
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.43	497	g/hp-hr	654.09	7.85	2,864.92
Tire Handler	1	90	0.75	18	6,570	hours	0.43	497	g/hp-hr	31.82	0.38	139.37
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	497	g/hp-hr	43.66	0.52	191.23
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	497	g/hp-hr	66.95	0.80	293.23
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	497	g/hp-hr	99.00	1.19	433.61
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	497	g/hp-hr	113.14	1.36	495.55
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	497	g/hp-hr	77.62	0.93	339.97
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	497	g/hp-hr	44.87	0.54	196.55
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	497	g/hp-hr	44.87	0.54	196.55
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	497	g/hp-hr	34.53	0.41	151.26
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	497	g/hp-hr	36.26	0.44	158.82
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	497	g/hp-hr	100.44	1.21	439.91
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	497	g/hp-hr	30.63	0.37	134.15
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	497	g/hp-hr	79.56	0.95	348.47
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	497	g/hp-hr	24.26	0.29	106.24

Table H.74 CO_2 Emissions from Fuel Burning Mobile Engines - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 15		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	497	g/hp-hr	30.56	0.37	133.86
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	497	g/hp-hr	48.51	0.58	212.48
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	497	g/hp-hr	247.49	2.97	1,084.02
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.43	497	g/hp-hr	88.39	1.06	387.15
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	497	g/hp-hr	94.40	1.13	413.48
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	497	g/hp-hr	26.52	0.32	116.15
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	497	g/hp-hr	8.52	0.10	37.32
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	497	g/hp-hr	113.80	1.37	498.43
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	497	g/hp-hr	36.01	0.43	157.74
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	497	g/hp-hr	1,222.50	14.67	5,354.57
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.43	497	g/hp-hr	159.10	1.91	696.87
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.43	497	g/hp-hr	361.34	4.34	1,582.67
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	497	g/hp-hr	1,424.15	17.09	6,237.78
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	497	g/hp-hr	219.26	2.63	54.82
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	497	g/hp-hr	438.53	5.26	109.63
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.43	497	g/hp-hr	212.14	1.97	720.72
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.43	497	g/hp-hr	212.14	0.11	9.10
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.43	497	g/hp-hr	212.14	0.60	220.71

Table H.74 CO_2 Emissions from Fuel Burning Mobile Engines - Year 15

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 15		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.43	497	g/hp-hr	212.14	0.22	80.92
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.43	497	g/hp-hr	212.14	0.11	24.86
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.43	497	g/hp-hr	235.71	0.22	80.78
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.43	497	g/hp-hr	212.14	0.11	21.20
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.43	497	g/hp-hr	212.14	0.11	27.09
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.43	497	g/hp-hr	212.14	0.15	52.98
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.43	497	g/hp-hr	212.14	0.11	4.71
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	0.54	1.08	lb/hp-hr	51.03	0.61	223.51
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	0.54	1.08	lb/hp-hr	51.03	0.61	223.51
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	0.54	1.08	lb/hp-hr	36.45	0.44	159.65
Total Emissions from Haul Truck Engines:										**28,820.00**	**345.84**	**95,105.99**
Total Emissions from Other Mobile Engines:										**18,071.47**	**194.82**	**67,612.16**
Total Emissions from All Mobile Engines:										**46,891.47**	**540.66**	**162,718.15**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.75 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 15		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 15	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.00003	g/hp-hr	0.005	0.00006	0.02
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.00003	g/hp-hr	0.001	0.00001	0.004
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.575	0.00005	g/hp-hr	0.0001	0.000002	0.0006
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.575	0.00004	g/hp-hr	0.00009	0.000001	0.0004
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.00003	g/hp-hr	0.00002	0.0000002	0.00007
Rubber Tired Dozers, 834H Class	3	498	0.58	14	5,075	hours	0.575	0.00004	g/hp-hr	0.00008	0.000001	0.0004
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.00004	g/hp-hr	0.00003	0.0000003	0.0001
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.575	0.00005	g/hp-hr	0.00005	0.0000006	0.0002
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.35	0.00007	g/hp-hr	0.0003	0.000004	0.001
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.0002	0.000002	0.0007
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00002	0.0000003	0.0001
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.00003	g/hp-hr	0.0002	0.000003	0.0009
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00005	0.0000006	0.0002
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00005	0.0000006	0.0002
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00004	0.0000005	0.0002
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.00003	g/hp-hr	0.00003	0.0000003	0.0001
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.00003	g/hp-hr	0.00005	0.0000007	0.0002
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.00003	g/hp-hr	0.000007	0.00000008	0.00003

Table H.75 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 15		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 15	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00001	0.0000001	0.00005
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.00007	0.0000009	0.0003
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.00003	g/hp-hr	0.00008	0.0000009	0.0003
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.0001	0.000001	0.0004
Tire Handler	1	90	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000007	0.00000009	0.00003
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.00006	g/hp-hr	0.00003	0.0000003	0.0001
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00002	0.0000002	0.00008
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000009	0.0000001	0.00004
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.00003	g/hp-hr	0.00001	0.0000001	0.00005
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.00003	g/hp-hr	0.00001	0.0000001	0.00005
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.00003	g/hp-hr	0.00002	0.0000002	0.00008
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.00003	g/hp-hr	0.000008	0.0000001	0.00003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000009	0.0000001	0.00004
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000003	0.00000003	0.00001

Table H.75 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 15		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 15	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000003	0.00000004	0.00001
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00004	0.0000005	0.0002
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00001	0.0000002	0.00006
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00001	0.0000002	0.00006
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.000004	0.00000005	0.00002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.000001	0.00000002	0.000006
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.40	0.00003	g/hp-hr	0.00002	0.0000002	0.00008
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.00003	g/hp-hr	0.000008	0.00000009	0.00003
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.0001	0.000002	0.0006
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00002	0.0000003	0.0001
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00005	0.0000007	0.0002
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.00003	g/hp-hr	0.0002	0.000002	0.0008
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.0004	g/hp-hr	0.0002	0.000002	0.00005
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.0004	g/hp-hr	0.0004	0.000005	0.00009
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.43	0.00003	g/hp-hr	0.00003	0.0000003	0.0001
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.43	0.002	g/hp-hr	0.002	0.000001	0.0001
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.43	0.0001	g/hp-hr	0.0001	0.0000003	0.0001

Table H.75 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 15												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 15		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 15	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.43	0.0003	g/hp-hr	0.0003	0.0000003	0.0001
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.43	0.0009	g/hp-hr	0.0009	0.0000005	0.0001
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.43	0.0003	g/hp-hr	0.0003	0.0000003	0.0001
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.43	0.001	g/hp-hr	0.001	0.0000005	0.0001
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.43	0.0008	g/hp-hr	0.0008	0.0000004	0.0001
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.43	0.0004	g/hp-hr	0.0004	0.0000003	0.0001
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.43	0.005	g/hp-hr	0.005	0.000002	0.0001
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	0.54	--	--	--	--	--
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	0.54	--	--	--	--	--
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	0.54	--	--	--	--	--
Total Emissions from Haul Truck Engines:										**0.006**	**0.00007**	**0.02**
Total Emissions from Other Mobile Engines:										**0.01**	**0.00004**	**0.01**
Total Emissions from All Mobile Engines:										**0.02**	**0.0001**	**0.03**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.76 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 15													
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 15			Soot Emissions - Year 15		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.24	1.68	0.02	5.55	5.32	0.06	17.57
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.24	0.08	0.001	0.26	0.25	0.003	0.84
Crawler Dozers, D11T Class	3	850	0.46	11	4,000	hours	0.24	0.01	0.0001	0.05	0.03	0.0004	0.15
Crawler Dozers, D10T Class	3	580	0.68	16	6,000	hours	0.24	0.004	0.00004	0.02	0.01	0.0001	0.05
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.24	0.0007	0.000008	0.003	0.002	0.00003	0.01
Rubber Tired Dozers, 834H Class	3	498	0.58	14	5,075	hours	0.24	0.003	0.00003	0.01	0.008	0.0001	0.04
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.24	0.001	0.00001	0.005	0.003	0.00004	0.02
Motor Graders, 16M Class	3	297	0.46	11	4,000	hours	0.24	0.001	0.00001	0.005	0.004	0.00005	0.02
Water Trucks, 30,000 gallons	4	1,348	0.45	11	3,250	hours	0.24	0.01	0.0002	0.05	0.04	0.0005	0.15
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.24	0.02	0.0002	0.07	0.05	0.0006	0.21
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.24	0.0007	0.000009	0.003	0.002	0.00003	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.24	0.17	0.002	0.74	0.53	0.006	2.34
Stemming Truck	2	450	0.75	18	6,570	hours	0.24	0.002	0.00002	0.007	0.005	0.00006	0.02
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.24	0.002	0.00002	0.007	0.005	0.00006	0.02
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.44	0.002	0.00003	0.01	0.003	0.00003	0.01
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.24	0.001	0.00001	0.005	0.004	0.00005	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.24	0.002	0.00002	0.007	0.005	0.00006	0.02
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.44	0.0003	0.000004	0.001	0.0004	0.000005	0.002

Table H.76 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 15													
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 15			Soot Emissions - Year 15		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.24	0.0004	0.000005	0.002	0.001	0.00001	0.005
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.24	0.009	0.0001	0.04	0.03	0.0004	0.13
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.24	0.002	0.00002	0.008	0.006	0.00007	0.03
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.44	0.002	0.00002	0.008	0.002	0.00003	0.01
Tire Handler	1	90	0.75	18	6,570	hours	0.51	0.00002	0.0000003	0.0001	0.00002	0.0000003	0.0001
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.51	0.0004	0.000005	0.002	0.0004	0.000005	0.002
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.44	0.0006	0.000007	0.003	0.0007	0.000009	0.003
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.5	0.002	0.00002	0.009	0.002	0.00002	0.009
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.24	0.0005	0.000007	0.002	0.002	0.00002	0.008
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.44	0.0007	0.000008	0.003	0.0009	0.00001	0.004
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.51	0.0005	0.000005	0.002	0.0004	0.000005	0.002
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.44	0.0004	0.000005	0.002	0.0005	0.000006	0.002
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.44	0.0003	0.000004	0.001	0.0004	0.000005	0.002
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.44	0.0003	0.000004	0.001	0.0004	0.000005	0.002
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.24	0.0005	0.000006	0.002	0.002	0.00002	0.007
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.44	0.0003	0.000003	0.001	0.0003	0.000004	0.001
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.5	0.0008	0.00001	0.003	0.0008	0.00001	0.003
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.5	0.0005	0.000006	0.002	0.0005	0.000006	0.002

Table H.76 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 15													
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 15			Soot Emissions - Year 15		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.48	0.0006	0.000007	0.003	0.0006	0.000008	0.003
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.5	0.001	0.00001	0.004	0.001	0.00001	0.004
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.44	0.002	0.00003	0.01	0.003	0.00003	0.01
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.24	0.00004	0.0000004	0.0002	0.0001	0.000001	0.0005
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.24	0.0005	0.000005	0.002	0.001	0.00002	0.006
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.24	0.0001	0.000002	0.0006	0.0004	0.000005	0.002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.24	0.001	0.00001	0.005	0.004	0.00005	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.24	0.0005	0.000007	0.002	0.002	0.00002	0.008
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.48	0.0007	0.000008	0.003	0.0007	0.000009	0.003
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.24	0.02	0.0002	0.08	0.06	0.0007	0.25
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.24	0.00009	0.000001	0.0004	0.0003	0.000003	0.001
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.24	0.0006	0.000007	0.003	0.002	0.00002	0.008
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.24	0.01	0.0002	0.06	0.04	0.0005	0.19
Storm Water Pond Pump	1	200	1.00	24	500	hours	0.5	0.002	0.00003	0.0005	0.002	0.00003	0.0005
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	0.5	0.004	0.00005	0.001	0.004	0.00005	0.001
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.24	0.003	0.00006	0.009	0.01	0.0002	0.03
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.24	0.0002	0.0000006	0.00009	0.0008	0.000002	0.0003
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.24	0.002	0.000008	0.003	0.008	0.00003	0.009

Table H.76 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 15

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 15			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 15			Soot Emissions - Year 15		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.24	0.002	0.000003	0.001	0.005	0.000009	0.003
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.24	0.001	0.000001	0.0003	0.005	0.000004	0.001
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.24	0.002	0.000003	0.0009	0.005	0.000008	0.003
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.24	0.001	0.000002	0.0003	0.004	0.000007	0.0008
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.44	0.001	0.000002	0.0006	0.001	0.000003	0.0008
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.44	0.001	0.000005	0.001	0.002	0.000006	0.002
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.44	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	--	--	--	--	--	--	--
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	--	--	--	--	--	--	--
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	--	--	--	--	--	--	--
Total Emissions from Haul Truck Engines:											**5.58**	**0.07**	**18.41**
Total Emissions from Other Mobile Engines:											**0.92**	**0.01**	**3.86**
Total Emissions from All Mobile Engines:											**6.50**	**0.08**	**22.26**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

YEAR 20

Table H.77 Particulate Matter Emission Factors - Year 20

Process Code	Process Description	SCC Code	Emission Factors				Prod. Rate Units	Particulate Matter Emission Factor Inputs [a]																							Reference
			PM/TSP	PM_{10}	$PM_{2.5}$	Units		k (PM/TSP)	k (PM_{10})	k ($PM_{2.5}$)	A (ft^2)	U (mph)	M (%)	W (tons)	s (%)	sL (g/m^2)	S (mph)	P (days/yr)	a (PM/TSP)	a (PM_{10})	a ($PM_{2.5}$)	b (PM/TSP)	b (PM_{10})	b ($PM_{2.5}$)	u^*	u_t^*	e	f (%)	PE	
Drilling	Drilling	3-05-020-10	1.30	0.43	0.08	lb/hole	holes	1	0.33	0.06																					AP-42, Section 11.9, Table 11.9-4 (10/98)
Blast	Blasting	3-05-020-09	328.26	170.69	9.85	lb/blast	blasts	1	0.52	0.03	81,920																				AP-42, Section 11.9, Table 11.9-1 (10/98)
Loading	Loading	3-03-024-08	0.0007	0.0003	0.00005	lb/ton	tons	0.74	0.35	0.053		4.14	4																		AP-42, Section 13.2.4, Expression 1 (11/06)
HaulingHD	Haul Trucks - Hourly/Daily	3-05-020-11	21.25	5.46	0.55	lb/VMT	VMT	4.9	1.5	0.15				305	5.0				0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expression 1a (11/06)
HaulingA	Haul Trucks - Annual	3-05-020-11	17.70	4.55	0.45	lb/VMT	VMT	4.9	1.5	0.15				305	5.0			61	0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expressions 1a and 2 (11/06)
Bldzrs	Bulldozers	3-05-020-99	2.82	0.43	0.30	lb/hr	hrs	5.7	0.75	0.60			4		2.5				1.2	1.5	1.2	1.3	1.4	1.3							AP-42, Section 11.9, Table 11.9-1 (10/98)
SupVehUY20H	Support Vehicular Traffic on Unpaved Roads - Year 20 Hourly	3-03-999-99	8.89	2.29	0.23	lb/VMT	VMT	4.9	1.5	0.15				44.0	5.0				0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expression 1a (11/06)
SupVehUY20D	Support Vehicular Traffic on Unpaved Roads - Year 20 Daily	3-03-999-99	8.78	2.26	0.23	lb/VMT	VMT	4.9	1.5	0.15				42.8	5.0				0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expression 1a (11/06)
SupVehUY20A	Support Vehicular Traffic on Unpaved Roads - Year 20 Annual	3-03-999-99	7.31	1.88	0.19	lb/VMT	VMT	4.9	1.5	0.15				42.7	5.0			61	0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expressions 1a and 2 (11/06)
SupVehPEY20H	Support Vehicular Traffic on Paved Entrance Road - Year 20 Hourly	3-03-999-99	0.05	0.01	0.003	lb/VMT	VMT	0.011	0.0022	0.00054				19.8		0.2															AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPEY20D	Support Vehicular Traffic on Paved Entrance Road - Year 20 Daily	3-03-999-99	0.05	0.01	0.002	lb/VMT	VMT	0.011	0.0022	0.00054				18.7		0.2															AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPEY20A	Support Vehicular Traffic on Paved Entrance Road - Year 20 Annual	3-03-999-99	0.04	0.008	0.002	lb/VMT	VMT	0.011	0.0022	0.00054				16.5		0.2		61													AP-42, Section 13.2.1, Expression 2 (01/11)
SupVehPIY20H	Support Vehicular Traffic on Paved Industrial Roads - Year 20 Hourly	3-03-999-99	1.23	0.25	0.06	lb/VMT	VMT	0.011	0.0022	0.00054				15.5		8.2															AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPIY20D	Support Vehicular Traffic on Paved Industrial Roads - Year 20 Daily	3-03-999-99	1.01	0.20	0.05	lb/VMT	VMT	0.011	0.0022	0.00054				12.8		8.2															AP-42, Section 13.2.1, Expression 1 (01/11)
SupVehPIY20A	Support Vehicular Traffic on Paved Industrial Roads - Year 20 Annual	3-03-999-99	0.80	0.16	0.04	lb/VMT	VMT	0.011	0.0022	0.00054				10.7		8.2		61													AP-42, Section 13.2.1, Expression 2 (01/11)
WtrTrksHD	Water Trucks - Hourly/Daily	3-05-020-99	17.06	4.38	0.44	lb/VMT	VMT	4.9	1.5	0.15				187.4	5.0				0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expression 1a (11/06)
WtrTrksA	Water Trucks - Annual	3-05-020-99	14.21	3.65	0.37	lb/VMT	VMT	4.9	1.5	0.15				187.4	5.0			61	0.7	0.9	0.9	0.45	0.45	0.45							AP-42, Section 13.2.2, Expressions 1a and 2 (11/06)
GradersY20	Graders - Year 20	3-05-020-99	2.18	0.75	0.07	lb/VMT	VMT	1	0.60	0.031							4.95		0.040	0.051	0.040	2.5	2.0	2.5							AP-42, Section 11.9, Table 11.9-1 (10/98)
TrMlyCncPrt	Molybdnum Concentrate Transfer (Protected)	3-03-024-08	0.00002	0.00001	0.000002	lb/ton	tons	0.74	0.35	0.053		1.3	15																		AP-42, Section 13.2.4, Expression 1 (11/06)
DTrMlyCncPrt	Dried Molybdenum Concentrate Transfer (Protected)	3-03-024-08	0.00004	0.00002	0.000003	lb/ton	tons	0.74	0.35	0.053		1.3	10																		AP-42, Section 13.2.4, Expression 1 (11/06)
DTrMlyCnc	Dried Molybdenum Concentrate Transfer (Unprotected)	3-03-024-08	0.0003	0.0002	0.00002	lb/ton	tons	0.74	0.35	0.053		6.21	10																		AP-42, Section 13.2.4, Expression 1 (11/06)
TrCuCncPrt	Copper Concentrate Transfer (Protected)	3-03-024-08	0.00004	0.00002	0.000003	lb/ton	tons	0.74	0.35	0.053		1.3	10																		AP-42, Section 13.2.4, Expression 1 (11/06)
TrCuCnc	Copper Concentrate Loadout	3-03-024-08	0.0003	0.0002	0.00002	lb/ton	tons	0.74	0.35	0.053		6.21	10																		AP-42, Section 13.2.4, Expression 1 (11/06)
FiltTailPrt	Filtered Tailings Transfer (Protected)	3-03-024-08	0.00002	0.00001	0.000002	lb/ton	tons	0.74	0.35	0.053		1.3	15																		AP-42, Section 13.2.4, Expression 1 (11/06)
FiltTail	Filtered Tailings Transfer (Unprotected)	3-03-024-08	0.0002	0.00009	0.00001	lb/ton	tons	0.74	0.35	0.053		6.21	15																		AP-42, Section 13.2.4, Expression 1 (11/06)
CrushP	Primary Crushing - High Moisture Ore	3-03-024-05	0.02	0.009	0.002	lb/ton	tons			0.185																					AP-42, Section 11.24, Table 11.24-2 (08/82) and 11.19.2-2 (08/04)
CrushS	Secondary Crushing - High Moisture Ore	3-03-024-06	0.05	0.02	0.004	lb/ton	tons			0.185																					AP-42, Section 11.24, Table 11.24-2 (08/82) and 11.19.2-2 (08/04)
CrushT	Tertiary Crushing - High Moisture Ore	3-03-024-07	0.06	0.02	0.004	lb/ton	tons			0.185																					AP-42, Section 11.24, Table 11.24-2 (08/82) and 11.19.2-2 (08/04)
Screen	Screening	3-05-020-02	0.025	0.0087	0.0006	lb/ton	tons			0.068																					AP-42, Section 11.19, Table 11.19.2-2 (08/04)
MolyDry	Drying of High Moisture Ore	3-03-024-11	19.70	12.00	5.91	lb/ton	tons			0.30																					AP-42, Section 11.24, Table 11.24-2 (08/82) and Appendix B.2 (09/96)

Table H.77 Particulate Matter Emission Factors - Year 20

Process Code	Process Description	SCC Code	Emission Factors				Prod. Rate Units	Particulate Matter Emission Factor Inputs [a]																						Reference
			PM/TSP	PM_{10}	$PM_{2.5}$	Units		k (PM/TSP)	k (PM_{10})	k ($PM_{2.5}$)	A (ft^2)	U (mph)	M (%)	W (tons)	s (%)	sL (g/m^2)	S (mph)	P (days/yr)	a (PM/TSP)	a (PM_{10})	a ($PM_{2.5}$)	b (PM/TSP)	b (PM_{10})	b ($PM_{2.5}$)	u^*	u_t^*	e	f (%)	PE	
TrStnPrt	Material Transfer (Protected)	3-03-024-08	0.0002	0.00007	0.00001	lb/ton	tons	0.74	0.35	0.053		1.3	4																	AP-42, Section 13.2.4, Expression 1 (11/06)
TrStnUnp	Material Transfer (Unprotected)	3-03-024-08	0.001	0.0006	0.00009	lb/ton	tons	0.74	0.35	0.053		6.21	4																	AP-42, Section 13.2.4, Expression 1 (11/06)
LimeLd	Lime Product Loading, Enclosed Truck	3-05-016-26	0.61	0.29	0.04	lb/ton	tons	1	0.47	0.07																				AP-42, Section 11.17, Table 11.17-4 (02/98) and AP-42, Section 13.2.4 (11/06)
LimeSlk	Lime Slaking	3-05-016-09	8.00	8.00	8.00	lb/ton	tons																							AP-42, Section 11.17, Table 11.17-2 (02/98), Scrubber CE = 99%
ReagTr	Miscellaneous Reagent Material Transfer	3-03-024-04	0.008	0.004	0.0006	lb/ton	tons	0.74	0.35	0.053		6.21	1																	AP-42, Section 13.2.4, Expression 1 (11/06)
ICDE1	Internal Combustion Diesel Engine 37 ≤ kW > 75	2-02-001-02	0.40	0.40	0.40	g/kW-hr	hours	1	1	1																				NSPS Emission Standard
ICDE2	Internal Combustion Diesel Engine 225 ≤ kW > 450	2-02-001-02	0.20	0.20	0.20	g/kW-hr	hours	1	1	1																				NSPS Emission Standard
ICDE3	Internal Combustion Diesel Engine > 560 kW	2-02-001-02	0.20	0.20	0.20	g/kW-hr	hours	1	1	1																				NSPS Emission Standard
DFB	Diesel (Distillate Oil) Fired Boiler <100 MMBtu/hr	1-02-005-03	3.30	2.30	1.54	lb/1000 gal	hours	1	0.5	0.12																				AP-42, Section 1.3, Tables 1.3-1, 1.3-2 and 1.3-6 (09/98)
CADC	Crushing Area Dust Collector	none	1.42	0.64	0.12	lb/hr	hours	2.22	1.00	0.18																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
SARTDC	Stockpile Area and Reclaim Tunnel Dust Collector	none	3.11	1.47	0.22	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
SFCDC	Stockpile Feed Conveyor Transfer Point Dust Collector	none	0.76	0.36	0.05	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
PCADC	Pebble Crusher Area Dust Collector	none	0.96	0.32	0.06	lb/hr	hours	2.99	1.00	0.18																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
CCDC	Copper Concentrate Dust Collectors	none	3.76	1.78	0.27	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
MS/EP	Molybdenum Scrubber / Electrostatic Precipitator	none	0.015	0.014	0.013	lb/hr	hours	1.10	1.00	0.94																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
MDC	Molybdenum Dust Collector	none	0.112	0.053	0.008	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
LDC	Laboratory Dust Collectors	none	0.008	0.005	0.002	gr/dscf	dscf	1.65	1.00	0.49																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
SFDC	SAG Feed Conveyor Dust Collector	none	0.97	0.46	0.07	lb/hr	hours	2.11	1.00	0.15																				Voluntarily Accepted PM_{10} Emission Limit, PM and $PM_{2.5}$ fractions of PM_{10} emissions
WindROM	Wind Erosion - Run of Mine Stockpile	3-03-888-01	0.21	0.11	0.02	ton/acre-yr	acres	1	0.5	0.075					2.5												38	4.77	22	FDEMI[b] (07/83), p. 51-57, MRI Equation, AP-42, Section 13.2.5 (11/06) and Table 13.2.4-1 (11/06)
WindCvd	Wind Erosion - Covered Stockpile	3-03-888-01	0	0	0	ton/acre-yr	acres																							Assumed
TailStrg	Wind Erosion - Tailings Storage	3-03-888-01	0.02	0.01	0.002	ton/acre-yr	acres	1	0.5	0.075															0.57	0.43				AP-42, Section 13.2.5 (11/06)

[a] k = particle size multiplier, A = horizonal area of blasting surface, U = mean wind speed, M = material moisture content, W = mean vehicle weight, s = surface material silt content, sL = road surface silt loading, S = mean vehicle speed, P = number of days per year with at least 0.01 inches of precipitation, a = constant based on particle size, b = constant based on particle size, u^* = friction velocity, u_t^* = threshold friction velocity, e = surface erodibility, f = percentage of time the wind speed exceeds 12 mph, PE = Thornthwaite's Precipitation-Evaporation Index

[b] FDEMI = *Fugitive Dust Emission Factors for the Mining Industry*

Table H.78 Gaseous Emission Factors - Year 20

Process Code	Process Description	SCC Code	Emission Factor									Prod. Rate Units	Reference
			CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	Units		
Blast	Blasting	3-05-020-09	67.00	17.00	2.00	0	0	566	0.02	0.005	lb/tons ANFO	tons ANFO	AP-42 Section 13.3, Table 13.3-1 (02/80) and 40 CFR 98, Tables C-1 and C-2[a]
SX	Solvent Extraction Mixers and Settlers	4-90-001-99	0	0	0	9.43E-05	0	0	0	0	lb/hr-ft^2	hours	Hydrometallurgy of Copper (Control Efficiency of 66%)
EW	Electrowining Tankhouse	none	0	0	0	0	1.57E-04	0	0	0	lb/hr-ft^2	hours	Applied Environmental Consultants - Report[b]
ICDE1	Internal Combustion Diesel Engine 37 ≤ kW > 75	2-02-001-02	5.0	4.4	0.0066	0.3	0	694	0.03	0.006	g/kW-hr	hours	NSPS Emission Standard, Complete Sulfur Conversion[c], and 40 CFR 98, Tables C-1 and C-2
ICDE2	Internal Combustion Diesel Engine 225 ≤ kW > 450	2-02-001-02	3.5	3.7	0.0066	0.3	0	694	0.03	0.006	g/kW-hr	hours	NSPS Emission Standard, Complete Sulfur Conversion[c], and 40 CFR 98, Tables C-1 and C-2
ICDE3	Internal Combustion Diesel Engine > 560 kW	2-02-001-02	3.5	6.0	0.0066	0.40	0	694	0.03	0.006	g/kW-hr	hours	NSPS Emission Standard, Complete Sulfur Conversion[c], and 40 CFR 98, Tables C-1 and C-2
DFB	Diesel (Distillate Oil) Fired Boiler <100 MMBtu/hr	1-02-005-03	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	lb/1000 gal	hours	AP-42 Section 1.3, Tables 1.3-1 and 1.3-3 (05/10)[c] and 40 CFR 98, Tables C-1 and C-2
C7DT	C7 Distribution Tank	4-03-010-19	0	0	0	1.08E-01	0	0	0	0	lb/hr	hours	EPA Tanks Program 4.0[d]
MST	MIBC Storage Tank	4-90-999-98	0	0	0	3.53E-03	0	0	0	0	lb/hr	hours	EPA Tanks Program 4.0[d]
DFSTHV	Diesel Fuel Storage Tank - Heavy Vehicles	4-03-010-19	0	0	0	1.39E-02	0	0	0	0	lb/hr	hours	EPA Tanks Program 4.0[d]

[a] Assumes a fuel oil to ammonium nitrate ratio of 9.0%.

[b] "Measurement of Sulfuric Acid Mist Emissions from the Cyprus Twin Buttes Copper Company Electrowinning Tankhouse" (02/93).

[c] SO_2 emissions are calculated using a sulfur content of 0.0015% for diesel fuel.

[d] Assumes continuous operation.

Table H.79 Particulate Matter Control Efficiencies - Year 20

Control Code	Control Description	Pick-up Efficiency (%)	Control Efficiency (%)	Reference
CADC	Crushing Area Dust Collector (PC-CADC)	100%	--	Assumed
SARTDC	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	100%	--	Assumed
SFCDC	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	100%	--	Assumed
PCADC	Pebble Crusher Area Dust Collector (PC-PCADC)	100%	--	Assumed
CCDC	Copper Concentrate Dust Collectors (PC-CCDC1/CCDC2)	100%	--	Assumed
MS/EP	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	100%	--	Assumed
LSV	Lime Storage Bin Vent (PC-LSBV)	100%	90%	Vendor Specification
LSS	Lime Slaker Scrubber (PC-LSS)	100%	99%	AP-42, Table B.2-3 (09/96)
SMSV	Sodium Metasilicate Storage Bin Vent (PC-SMSBV)	100%	90%	Vendor Specification
CVS	EW Cell Ventilation Scrubbers (PC-CVS)	100%	99%	Engineering Design
MDC	Molybdenum Dust Collector (PC-MDC)	100%	--	Assumed
SFDC	SAG Feed Conveyor Dust Collector (PC-SFDC)	100%	--	Assumed
HaulRdUI	Road Watering (Inside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
HaulRdUO	Road Watering (Outside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
HaulRdWTI	Road Watering - Water Trucks (Inside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
HaulRdWTO	Road Watering - Water Trucks (Outside the Pit)	N/A	90%	*Control of Open Fugitive Dust Sources* (09/88) [a]
Water	Addition of Process Water	N/A	100%	Assumed
WSpry	Water Spray at Unprotected Points	N/A	82.5%	Average Value of AP-42, p. 11.19.1-5 (11/95)
Wet	Wet Process	N/A	100%	Assumed
Clean	Wet, Cleaned Ore (no fines)	N/A	100%	Assumed
Enclosed	Totally Enclosed Transfer Point	N/A	100%	Assumed
UndrGrd	Underground Transfer Point	N/A	100%	Assumed
None	No Pollution Controls	0%	0%	Assumed

[a] EPA Document gives methods for calculating efficiencies - pages 5-9 to 5-14

Table H.80 Annual Particulate Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 20	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 20		PM_{10} Emissions (tpy) - Year 20		$PM_{2.5}$ Emissions (tpy) - Year 20	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Mining																		
MN01	Drilling	Drilling	3-05-020-10	F	8,080	holes	1.30	0.43	0.08	lb/hole	None	0%	5.25	5.25	1.75	1.75	0.32	0.32
MN02	Blasting	Blast	3-05-020-09	F	101	blasts	328.26	170.69	9.85	lb/blast	None	0%	16.58	16.58	8.62	8.62	0.50	0.50
MN03	Loading Concentrate Ore	Loading	3-03-024-08	F	27,375,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	9.60	9.60	4.54	4.54	0.69	0.69
MN04	Loading Leach Ore	Loading	3-03-024-08	F	0	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0	0	0	0	0	0
MN05	Loading Waste Rock	Loading	3-03-024-08	F	4,380,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	1.54	1.54	0.73	0.73	0.11	0.11
MN06a	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Inside the Pit)	HaulingA	3-05-020-11	F	695,574	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUI	90%	6,154.21	615.42	1,581.34	158.13	158.13	15.81
MN06b	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Outside the Pit)	HaulingA	3-05-020-11	F	190,588	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUO	90%	1,686.26	168.63	433.29	43.33	43.33	4.33
MN07a	Hauling Leach Ore to Leach Pad (Inside the Pit)	HaulingA	3-05-020-11	F	0	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUI	90%	0	0	0	0	0	0
MN07b	Hauling Leach Ore to Leach Pad (Outside the Pit)	HaulingA	3-05-020-11	F	0	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUO	90%	0	0	0	0	0	0
MN08a	Hauling Waste Rock to Waste Rock Storage Area (Inside the Pit)	HaulingA	3-05-020-11	F	120,118	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUI	90%	1,062.77	106.28	273.08	27.31	27.31	2.73
MN08b	Hauling Waste Rock to Waste Rock Storage Area (Outside the Pit)	HaulingA	3-05-020-11	F	107,682	VMT	17.70	4.55	0.45	lb/VMT	HaulRdUO	90%	952.73	95.27	244.81	24.48	24.48	2.45
MN09	Unloading Concentrate Ore to Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	2,737,500	tons	0.001	0.0006	0.00009	lb/ton	None	0%	1.63	1.63	0.77	0.77	0.12	0.12
MN10	Unloading Leach Ore to Leach Pad	TrStnUnp	3-03-024-08	F	0	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0	0	0	0	0	0
MN11	Unloading Waste Rock to Waste Rock Storage Area	TrStnUnp	3-03-024-08	F	4,380,000	tons	0.001	0.0006	0.00009	lb/ton	None	0%	2.60	2.60	1.23	1.23	0.19	0.19
MN12	Bulldozer Use	Bldzrs	3-05-020-99	F	30,660	hrs	2.82	0.43	0.30	lb/hr	None	0%	43.28	43.28	6.53	6.53	4.54	4.54
MN13a	Water Truck Use (Inside the Pit)	WtrTrksA	3-05-020-99	F	64,437	VMT	14.21	3.65	0.37	lb/VMT	HaulRdWTI	90%	457.91	45.79	117.66	11.77	11.77	1.18
MN13b	Water Truck Use (Outside the Pit)	WtrTrksA	3-05-020-99	F	23,563	VMT	14.21	3.65	0.37	lb/VMT	HaulRdWTO	90%	167.44	16.74	43.02	4.30	4.30	0.43
MN14	Grader Use	GradersY20	3-05-020-99	F	59,400	VMT	2.18	0.75	0.07	lb/VMT	None	0%	64.76	64.76	22.27	22.27	2.01	2.01
MN15a	Support Vehicle Use on Unpaved Roads (Inside the Pit)	SupVehUY20A	3-03-999-99	F	272,306	VMT	7.31	1.88	0.19	lb/VMT	HaulRdUI	90%	994.80	99.48	255.62	25.56	25.56	2.56
MN15b	Support Vehicle Use on Unpaved Roads (Outside the Pit)	SupVehUY20A	3-03-999-99	F	272,306	VMT	7.31	1.88	0.19	lb/VMT	HaulRdUO	90%	994.80	99.48	255.62	25.56	25.56	2.56
M16a	Support Vehicle Use on the Paved Entrance Road (within the process area boundary)	SupVehPEY20A	3-03-999-99	F	74,399	VMT	0.04	0.008	0.002	lb/VMT	None	0%	1.58	1.58	0.32	0.32	0.08	0.08
M16b	Support Vehicle Use on the Paved Entrance Road (outside of the process area boundary)	SupVehPEY20A	3-03-999-99	F	322,577	VMT	0.04	0.008	0.002	lb/VMT	None	0%	6.84	6.84	1.37	1.37	0.34	0.34
M16c	Support Vehicle Use on Paved Industrial Roads	SupVehPIY20A	3-03-999-99	F	185,705	VMT	0.80	0.16	0.04	lb/VMT	None	0%	74.37	74.37	14.87	14.87	3.65	3.65
Primary Crushing, Conveying, Coarse Ore Storage, and Reclaim Conveying																		
PC01	Wind Erosion of the Run of Mine Stockpile	WindROM	3-03-888-01	F	26	acres	0.21	0.11	0.02	ton/acre-yr	None	0%	5.43	5.43	2.72	2.72	0.41	0.41
PC02	Unloading to Primary Crusher Dump Hopper (H-CDp) from Haul Trucks or Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	27,375,000	tons	0.001	0.0006	0.00009	lb/ton	WSpry	82.5%	16.27	2.85	7.69	1.35	1.16	0.20
PC03	Primary Crusher (PCr)	CrushP	3-03-024-05	NF	43,362,000	tons	0.02	0.009	0.002	lb/ton	CADC	100%	433.62	0	195.13	0	36.14	0
PC04	Primary Crusher (PCr) to Crusher Discharge Hopper (H-CDs)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
PC05	Crusher Discharge Hopper (H-CDs) to Crusher Discharge Feeder (F-CD)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	3.38	0	1.60	0	0.24	0
PC06	Crusher Discharge Feeder (F-CD) to Stockpile Feed Conveyor No. 1 (CV-SF1)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	3.38	0	1.60	0	0.24	0

Table H.80 Annual Particulate Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 20	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 20		PM_{10} Emissions (tpy) - Year 20		$PM_{2.5}$ Emissions (tpy) - Year 20	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
PC07	Stockpile Feed Conveyor No. 1 (CV-SF1) to Stockpile Feed Conveyor No. 2 (CV-SF2)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SFCDC	100%	3.38	0	1.60	0	0.24	0
PC08	Stockpile Feed Conveyor No. 2 (CV-SF2) to Covered Coarse Ore Stockpile	TrStnPrt	3-03-024-08	F	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	3.38	0	1.60	0	0.24	0
PC09	Wind Erosion of the Coarse Ore Stockpile	WindCvd	3-03-888-01	F	5	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
PC10	Coarse Ore Stockpile to Reclaim Feeders (F-R1/R4)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	UndrGrd [a]	100%	0	0	0	0	0	0
PC11	Reclaim Feeders (F-R1/R4) to Reclaim Conveyor (CV-R)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	3.38	0	1.60	0	0.24	0
PC12	Reclaim Conveyor (CV-R) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	43,362,000	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	3.38	0	1.60	0	0.24	0
PC13	Pebble Conveyor No. 3 (CV-Pb3) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.49	0	0.23	0	0.03	0
PC14	SAG Mill Feed Conveyor (CV-SMF) to SAG Mill (M-SAG)	TrStnPrt	3-03-024-08	NF	49,631,400	tons	0.0002	0.00007	0.00001	lb/ton	Water [a]	100%	0	0	0	0	0	0
Milling																		
M01	SAG Mill (M-SAG)	CrushS	3-03-024-06	NF	49,669,200	tons	0.05	0.02	0.004	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M02	SAG Mill (M-SAG) to Trommel Screen (Sn-T)	TrStnPrt	3-03-024-08	NF	49,669,200	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M03	Trommel Screen (Sn-T)	Screen	3-05-020-02	NF	49,669,200	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M04	Trommel Screen (Sn-T) to Pebble Conveyor No. 1 (CV-Pb1)	TrStnPrt	3-03-024-08	NF	10,505,042	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M05	Pebble Conveyor No. 1 (CV-Pb1) to Pebble Wash Screen (Sn-PbW)	TrStnPrt	3-03-024-08	NF	10,505,042	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M06	Pebble Wash Screen (Sn-PbW)	Screen	3-05-020-02	NF	10,505,042	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M07	Pebble Wash Screen (Sn-PbW) to Pebble Conveyor No. 2	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M08	Pebble Conveyor No. 2 (CV-Pb2) to SAG Oversize Surge Bin (B-SAGOS)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.49	0	0.23	0	0.03	0
M09	SAG Oversize Surge Bin (B-SAGOS) to Pebble Crusher Feeder (F-PbC)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.49	0	0.23	0	0.03	0
M10	Pebble Crusher Feeder (F-PbC) to Pebble Crusher (PbC)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M11	Pebble Crusher (PbC)	CrushT	3-03-024-07	NF	6,269,400	tons	0.06	0.02	0.004	lb/ton	PCADC	100%	188.08	0	62.69	0	11.61	0
M12	Pebble Crusher (PbC) to Pebble Conveyor No. 3 (CV-Pb3)	TrStnPrt	3-03-024-08	NF	6,269,400	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.49	0	0.23	0	0.03	0
Copper Concentrate Dewatering and Stacking																		
CCD01	Copper Concentrate Filters (Ft-CC1/CC4) to Copper Concentrate Conveyor (CV-CC)	TrCuCncPrt	3-03-024-08	NF	550,936	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
CCD02	Copper Concentrate Conveyor (CV-CC) to Copper Concentrate Loadout Stockpile	TrCuCncPrt	3-03-024-08	F	550,936	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.01	0	0.006	0	0.0009	0
CCD03	Wind Erosion of Copper Concentrate Loadout Stockpile	WindCvd	3-03-888-01	F	1.17	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
CCD04	Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loaders	TrCuCncPrt	3-03-024-08	F	550,936	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.01	0	0.006	0	0.0009	0
Molybdenum Dewatering and Packaging																		
MD01	Molybdenum Concentrate Filter (Ft-MC) to Molybdenum Concentrate Dryer (D-MC)	TrMlyCncPrt	3-03-024-08	NF	6,377	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD02	Molybdenum Concentrate Dryer	MolyDry	3-03-024-11	NF	6,377	tons	19.70	12.00	5.91	lb/ton	MS/EP	100%	62.81	0	38.26	0	18.84	0
MD03	Molybdenum Concentrate Dryer (D-MC) to Molybdenum Concentrate Bin (B-MC)	DTrMlyCncPrt	3-03-024-08	NF	6,377	tons	0.00004	0.00002	0.000003	lb/ton	MDC	100%	0.0001	0	0.00007	0	0.00001	0
MD04	Molybdenum Concentrate Bin (B-MC) to Molybdenum Concentrate Hopper (H-MC)	DTrMlyCnc	3-03-024-08	NF	6,377	tons	0.0003	0.0002	0.00002	lb/ton	None	0%	0.001	0.001	0.0005	0.0005	0.00008	0.00008

Table H.80 Annual Particulate Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 20	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 20		PM_{10} Emissions (tpy) - Year 20		$PM_{2.5}$ Emissions (tpy) - Year 20	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
MD05	Molybdenum Concentrate Hopper (H-MC) to Molybdenum Concentrate Conveyor (CV-MC)	DTrMlyCncPrt	3-03-024-08	NF	6,377	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD06	Molybdenum Concentrate Conveyor (CV-MC) to Molybdenum Packaging and Weigh System (MPS)	DTrMlyCnc	3-03-024-08	NF	6,377	tons	0.0003	0.0002	0.00002	lb/ton	MDC	100%	0.001	0	0.0005	0	0.00008	0
Tailings Dewatering and Placement																		
TDS01	Tailings Filters (Ft-T1/T14) to Tailings Belt Feeders (F-T1/T14)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS02	Tailings Belt Feeders (F-T1/T14) to Fixed Tailings Conveyor No. 1 (CV-F1)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS03	Fixed Tailings Conveyor No. 1 (CV-F1) to Fixed Tailings Conveyor No. 2 (CV-F2)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS04	Fixed Tailings Conveyor No. 2 (CV-F2) to Fixed Tailings Conveyor No. 3 (CV-F3)	FiltTailPrt	3-03-024-08	NF	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.52	0.52	0.25	0.25	0.04	0.04
TDS05	Fixed Tailings Conveyor No. 3 (CV-F3) to Relocatable Conveyor (CV-R1)	FiltTailPrt	3-03-024-08	F	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.52	0.52	0.25	0.25	0.04	0.04
TDS06	Relocatable Conveyor (CV-R1) to Shiftable Conveyor (CV-S1)	FiltTailPrt	3-03-024-08	F	42,804,687	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.52	0.52	0.25	0.25	0.04	0.04
TDS07	Shiftable Conveyor (CV-S1) to Belt Wagon Conveyor (CV-BW1)	FiltTail	3-03-024-08	F	42,804,687	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	4.00	4.00	1.89	1.89	0.29	0.29
TDS08	Belt Wagon Conveyor (CV-BW1) to Spreader Crawler Mounted Conveyor (CV-SP1)	FiltTail	3-03-024-08	F	42,804,687	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	4.00	4.00	1.89	1.89	0.29	0.29
TDS09	Spreader Crawler Mounted Conveyor (CV-SP1) to Tailings Storage	FiltTail	3-03-024-08	F	42,804,687	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	4.00	4.00	1.89	1.89	0.29	0.29
TDS10	Wind Erosion of Tailings Storage	TailStrg	3-03-888-01	F	1,500	acres	0.02	0.01	0.002	ton/acre-yr	None	0%	30.23	30.23	15.11	15.11	2.27	2.27
Fuel Burning Equipment																		
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	8,760	hours	3.30	2.30	1.54	lb/1000 gal	None	0%	0.63	0.63	0.44	0.44	0.30	0.30
					6.0	MMBtu/hr												
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.11	0.11	0.11	0.11	0.11	0.11
					1,000	kW												
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.11	0.11	0.11	0.11	0.11	0.11
					1,000	kW												
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.08	0.08	0.08	0.08	0.08	0.08
					750	kW												
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.08	0.08	0.08	0.08	0.08	0.08
					750	kW												
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	500	hours	0.40	0.40	0.40	g/kW-hr	None	0%	0.01	0.01	0.01	0.01	0.01	0.01
					50	kW												
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.03	0.03	0.03	0.03	0.03	0.03
					400	hp												
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	500	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.03	0.03	0.03	0.03	0.03	0.03
					400	hp												

Table H.80 Annual Particulate Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 20	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpy) - Year 20		PM_{10} Emissions (tpy) - Year 20		$PM_{2.5}$ Emissions (tpy) - Year 20	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Miscellaneous Sources																		
MS01	Transfer of Lime to the Lime Storage Bin (B-L)	LimeLd	3-05-016-26	NF	56,700	tons	0.61	0.29	0.04	lb/ton	LSV [a]	90%	1.73	1.73	0.82	0.82	0.12	0.12
MS02	Lime Storage Bin (B-L) to Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2)	ReagTr	3-03-024-04	NF	56,700	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS03	Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2) to Lime Slakers 1 and 2 (T-LS1/2)	ReagTr	3-03-024-04	NF	56,700	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS04	Lime Slaking in Lime Slakers 1 and 2 (T-LS1/2)	LimeSlk	3-05-016-09	NF	56,700	tons	8.00	8.00	8.00	lb/ton	LSS	99%	226.80	2.27	226.80	2.27	226.80	2.27
MS05	Transfer of Sodium Metasilicate to the Sodium Metasilicate Storage Bin (B-SM)	ReagTr	3-03-024-04	NF	3,000	tons	0.008	0.004	0.0006	lb/ton	SMSV [a]	90%	0.001	0.001	0.0006	0.0006	0.00009	0.00009
MS06	Transfer of Flocculant from Supersacks to Flocculant Storage Bins (B-F1/F2)	ReagTr	3-03-024-04	NF	1,100	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.005	0.005	0.002	0.002	0.0003	0.0003
MS07	Transfer of Guar from Bags to Guar Feeder (F-Gu)	ReagTr	3-03-024-04	NF	150	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.0006	0.0006	0.0003	0.0003	0.00004	0.00004
MS08	Transfer of Granular Cobalt Sulfate from Bags to Cobalt Sulfate Feeder (F-CoS)	ReagTr	3-03-024-04	NF	6	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.00002	0.00002	0.00001	0.00001	0.000002	0.000002
Particulate Matter Pollution Control Equipment with Emission Limits																		
PCL01	Crushing Area Dust Collector (PC-CADC)	CADC	none	NF	8,760	hours	1.42	0.64	0.12	lb/hr	--	--	--	6.22	--	2.80	--	0.52
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	SARTDC	none	NF	8,760	hours	3.11	1.47	0.22	lb/hr	--	--	--	13.61	--	6.44	--	0.97
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	SFCDC	none	NF	8,760	hours	0.76	0.36	0.05	lb/hr	--	--	--	3.33	--	1.58	--	0.24
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	PCADC	none	NF	8,760	hours	0.96	0.32	0.06	lb/hr	--	--	--	4.19	--	1.40	--	0.26
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	CCDC	none	NF	8,760	hours	3.76	1.78	0.27	lb/hr	--	--	--	16.48	--	7.80	--	1.18
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	CCDC	none	NF	8,760	hours	3.76	1.78	0.27	lb/hr	--	--	--	16.48	--	7.80	--	1.18
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	MS/EP	none	NF	8,760	hours	0.015	0.014	0.013	lb/hr	--	--	--	0.07	--	0.06	--	0.06
PCL08	Molybdenum Dust Collector (PC-MDC)	MDC	none	NF	8,760	hours	0.112	0.053	0.008	lb/hr	--	--	--	0.49	--	0.23	--	0.04
PCL09	Laboratory Dust Collector 1 (PC-L1)	LDC	none	NF	4,357,315,176	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	2.56	--	1.56	--	0.76
PCL10	Laboratory Dust Collector 2 (PC-L2)	LDC	none	NF	4,357,315,176	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	2.56	--	1.56	--	0.76
PCL11	Laboratory Dust Collector 3 (PC-L3)	LDC	none	NF	4,357,315,176	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	2.56	--	1.56	--	0.76
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	SFDC	none	NF	8,760	hours	0.97	0.46	0.07	lb/hr	--	--	--	4.26	--	2.01	--	0.31
Total Non-Fugitive Emissions (excluding tailpipe emissions):													**933.50**	**78.46**	**533.76**	**39.03**	**295.66**	**10.23**
Total Fugitive Emissions (excluding tailpipe emissions):													**12,767.32**	**1,526.67**	**3,300.73**	**408.78**	**338.00**	**48.40**
Total Emissions (excluding tailpipe emissions):													**13,700.83**	**1,605.13**	**3,834.49**	**447.81**	**633.66**	**58.63**
Tailpipe Emissions (see Tables H.86-H.88):													**29.14**	**29.14**	**29.14**	**29.14**	**29.14**	**29.14**

[a] The control efficiency for this emission unit is inherent to the process. Therefore, the control efficiency is applied to both uncontrolled and controlled emissions.

Table H.81 Maximum Daily Particulate Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 20	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 20		PM_{10} Emissions (tpd) - Year 20		$PM_{2.5}$ Emissions (tpd) - Year 20	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Mining																		
MN01	Drilling	Drilling	3-05-020-10	F	80	holes	1.30	0.43	0.08	lb/hole	None	0%	0.05	0.05	0.02	0.02	0.003	0.003
MN02	Blasting	Blast	3-05-020-09	F	1.0	blasts	328.26	170.69	9.85	lb/blast	None	0%	0.16	0.16	0.09	0.09	0.005	0.005
MN03	Loading Concentrate Ore	Loading	3-03-024-08	F	90,000	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0.03	0.03	0.01	0.01	0.002	0.002
MN04	Loading Leach Ore	Loading	3-03-024-08	F	0	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0	0	0	0	0	0
MN05	Loading Waste Rock	Loading	3-03-024-08	F	14,400	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0.005	0.005	0.002	0.002	0.0004	0.0004
MN06a	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Inside the Pit)	HaulingHD	3-05-020-11	F	2,287	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	24.29	2.43	6.24	0.62	0.62	0.06
MN06b	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Outside the Pit)	HaulingHD	3-05-020-11	F	627	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	6.66	0.67	1.71	0.17	0.17	0.02
MN07a	Hauling Leach Ore to Leach Pad (Inside the Pit)	HaulingHD	3-05-020-11	F	0	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	0	0	0	0	0	0
MN07b	Hauling Leach Ore to Leach Pad (Outside the Pit)	HaulingHD	3-05-020-11	F	0	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	0	0	0	0	0	0
MN08a	Hauling Waste Rock to Waste Rock Storage Area (Inside the Pit)	HaulingHD	3-05-020-11	F	395	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	4.20	0.42	1.08	0.11	0.11	0.01
MN08b	Hauling Waste Rock to Waste Rock Storage Area (Outside the Pit)	HaulingHD	3-05-020-11	F	354	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	3.76	0.38	0.97	0.10	0.10	0.01
MN09	Unloading Concentrate Ore to Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	90,000	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0.05	0.05	0.03	0.03	0.004	0.004
MN10	Unloading Leach Ore to Leach Pad	TrStnUnp	3-03-024-08	F	0	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0	0	0	0	0	0
MN11	Unloading Waste Rock to Waste Rock Storage Area	TrStnUnp	3-03-024-08	F	14,400	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0.009	0.009	0.004	0.004	0.0006	0.0006
MN12	Bulldozer Use	Bldzrs	3-05-020-99	F	84	hrs	2.82	0.43	0.30	lb/hr	None	0%	0.12	0.12	0.02	0.02	0.01	0.01
MN13a	Water Truck Use (Inside the Pit)	WtrTrksHD	3-05-020-99	F	212	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTI	90%	1.81	0.18	0.46	0.05	0.05	0.005
MN13b	Water Truck Use (Outside the Pit)	WtrTrksHD	3-05-020-99	F	77	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTO	90%	0.66	0.07	0.17	0.02	0.02	0.002
MN14	Grader Use	GradersY20	3-05-020-99	F	163	VMT	2.18	0.75	0.07	lb/VMT	None	0%	0.18	0.18	0.06	0.06	0.006	0.006
MN15a	Support Vehicle Use on Unpaved Roads (Inside the Pit)	SupVehUY20D	3-03-999-99	F	746	VMT	8.78	2.26	0.23	lb/VMT	HaulRdUI	90%	3.27	0.33	0.84	0.08	0.08	0.008
MN15b	Support Vehicle Use on Unpaved Roads (Outside the Pit)	SupVehUY20D	3-03-999-99	F	746	VMT	8.78	2.26	0.23	lb/VMT	HaulRdUO	90%	3.27	0.33	0.84	0.08	0.08	0.008
M16a	Support Vehicle Use on the Paved Entrance Road (within the process area boundary)	SupVehPEY20D	3-03-999-99	F	302	VMT	0.05	0.01	0.002	lb/VMT	None	0%	0.008	0.008	0.002	0.002	0.0004	0.0004
M16b	Support Vehicle Use on the Paved Entrance Road (outside of the process area boundary)	SupVehPEY20D	3-03-999-99	F	1,310	VMT	0.05	0.01	0.002	lb/VMT	None	0%	0.03	0.03	0.007	0.007	0.002	0.002
M16c	Support Vehicle Use on Paved Industrial Roads	SupVehPIY20D	3-03-999-99	F	610	VMT	1.01	0.20	0.05	lb/VMT	None	0%	0.31	0.31	0.06	0.06	0.02	0.02
Primary Crushing, Conveying, Coarse Ore Storage, and Reclaim Conveying																		
PC01	Wind Erosion of the Run of Mine Stockpile	WindROM	3-03-888-01	F	26	acres	0.21	0.11	0.02	ton/acre-yr	None	0%	0.01	0.01	0.007	0.007	0.001	0.001
PC02	Unloading to Primary Crusher Dump Hopper (H-CDp) from Haul Trucks or Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	166,800	tons	0.001	0.0006	0.00009	lb/ton	WSpry	82.5%	0.10	0.02	0.05	0.008	0.01	0.001
PC03	Primary Crusher (PCr)	CrushP	3-03-024-05	NF	166,800	tons	0.02	0.009	0.002	lb/ton	CADC	100%	1.67	0	0.75	0	0.14	0
PC04	Primary Crusher (PCr) to Crusher Discharge Hopper (H-CDs)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
PC05	Crusher Discharge Hopper (H-CDs) to Crusher Discharge Feeder (F-CD)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	0.01	0	0.006	0	0.0009	0
PC06	Crusher Discharge Feeder (F-CD) to Stockpile Feed Conveyor No. 1 (CV-SF1)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	0.01	0	0.006	0	0.0009	0

Table H.81 Maximum Daily Particulate Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 20	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 20		PM_{10} Emissions (tpd) - Year 20		$PM_{2.5}$ Emissions (tpd) - Year 20	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
PC07	Stockpile Feed Conveyor No. 1 (CV-SF1) to Stockpile Feed Conveyor No. 2 (CV-SF2)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SFCDC	100%	0.01	0	0.006	0	0.0009	0
PC08	Stockpile Feed Conveyor No. 2 (CV-SF2) to Covered Coarse Ore Stockpile	TrStnPrt	3-03-024-08	F	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	0.01	0	0.006	0	0.0009	0
PC09	Wind Erosion of the Coarse Ore Stockpile	WindCvd	3-03-888-01	F	5	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
PC10	Coarse Ore Stockpile to Reclaim Feeders (F-R1/R4)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	UndrGrd [a]	100%	0	0	0	0	0	0
PC11	Reclaim Feeders (F-R1/R4) to Reclaim Conveyor (CV-R)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	0.01	0	0.006	0	0.0009	0
PC12	Reclaim Conveyor (CV-R) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	166,800	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.01	0	0.006	0	0.0009	0
PC13	Pebble Conveyor No. 3 (CV-Pb3) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.003	0	0.002	0	0.0002	0
PC14	SAG Mill Feed Conveyor (CV-SMF) to SAG Mill (M-SAG)	TrStnPrt	3-03-024-08	NF	209,308	tons	0.0002	0.00007	0.00001	lb/ton	Water [a]	100%	0	0	0	0	0	0
Milling																		
M01	SAG Mill (M-SAG)	CrushS	3-03-024-06	NF	209,432	tons	0.05	0.02	0.004	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M02	SAG Mill (M-SAG) to Trommel Screen (Sn-T)	TrStnPrt	3-03-024-08	NF	209,432	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M03	Trommel Screen (Sn-T)	Screen	3-05-020-02	NF	209,432	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M04	Trommel Screen (Sn-T) to Pebble Conveyor No. 1 (CV-Pb1)	TrStnPrt	3-03-024-08	NF	44,426	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M05	Pebble Conveyor No. 1 (CV-Pb1) to Pebble Wash Screen (Sn-PbW)	TrStnPrt	3-03-024-08	NF	44,426	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M06	Pebble Wash Screen (Sn-PbW)	Screen	3-05-020-02	NF	44,426	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M07	Pebble Wash Screen (Sn-PbW) to Pebble Conveyor No. 2	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M08	Pebble Conveyor No. 2 (CV-Pb2) to SAG Oversize Surge Bin (B-SAGOS)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.003	0	0.002	0	0.0002	0
M09	SAG Oversize Surge Bin (B-SAGOS) to Pebble Crusher Feeder (F-PbC)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.003	0	0.002	0	0.0002	0
M10	Pebble Crusher Feeder (F-PbC) to Pebble Crusher (PbC)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M11	Pebble Crusher (PbC)	CrushT	3-03-024-07	NF	42,508	tons	0.06	0.02	0.004	lb/ton	PCADC	100%	1.28	0	0.43	0	0.08	0
M12	Pebble Crusher (PbC) to Pebble Conveyor No. 3 (CV-Pb3)	TrStnPrt	3-03-024-08	NF	42,508	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.003	0	0.002	0	0.0002	0
Copper Concentrate Dewatering and Stacking																		
CCD01	Copper Concentrate Filters (Ft-CC1/CC4) to Copper Concentrate Conveyor (CV-CC)	TrCuCncPrt	3-03-024-08	NF	3,312	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
CCD02	Copper Concentrate Conveyor (CV-CC) to Copper Concentrate Loadout Stockpile	TrCuCncPrt	3-03-024-08	F	3,312	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.00007	0	0.00003	0	0.000005	0
CCD03	Wind Erosion of Copper Concentrate Loadout Stockpile	WindCvd	3-03-888-01	F	1.17	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
CCD04	Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loaders	TrCuCncPrt	3-03-024-08	F	3,312	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.00007	0	0.00003	0	0.000005	0
Molybdenum Dewatering and Packaging																		
MD01	Molybdenum Concentrate Filter (Ft-MC) to Molybdenum Concentrate Dryer (D-MC)	TrMlyCncPrt	3-03-024-08	NF	45.6	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD02	Molybdenum Concentrate Dryer	MolyDry	3-03-024-11	NF	45.6	tons	19.70	12.00	5.91	lb/ton	MS/EP	100%	0.45	0	0.27	0	0.13	0
MD03	Molybdenum Concentrate Dryer (D-MC) to Molybdenum Concentrate Bin (B-MC)	DTrMlyCncPrt	3-03-024-08	NF	45.6	tons	0.00004	0.00002	0.000003	lb/ton	MDC	100%	0.000001	0	0.0000005	0	0.00000007	0
MD04	Molybdenum Concentrate Bin (B-MC) to Molybdenum Concentrate Hopper (H-MC)	DTrMlyCnc	3-03-024-08	NF	45.6	tons	0.0003	0.0002	0.00002	lb/ton	None	0%	0.000008	0.000008	0.000004	0.000004	0.0000005	0.0000005

Table H.81 Maximum Daily Particulate Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 20	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 20		PM_{10} Emissions (tpd) - Year 20		$PM_{2.5}$ Emissions (tpd) - Year 20	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
MD05	Molybdenum Concentrate Hopper (H-MC) to Molybdenum Concentrate Conveyor (CV-MC)	DTrMlyCncPrt	3-03-024-08	NF	45.6	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD06	Molybdenum Concentrate Conveyor (CV-MC) to Molybdenum Packaging and Weigh System (MPS)	DTrMlyCnc	3-03-024-08	NF	45.6	tons	0.0003	0.0002	0.00002	lb/ton	MDC	100%	0.000008	0	0.000004	0	0.0000005	0
Tailings Dewatering and Placement																		
TDS01	Tailings Filters (Ft-T1/T14) to Tailings Belt Feeders (F-T1/T14)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS02	Tailings Belt Feeders (F-T1/T14) to Fixed Tailings Conveyor No. 1 (CV-F1)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS03	Fixed Tailings Conveyor No. 1 (CV-F1) to Fixed Tailings Conveyor No. 2 (CV-F2)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS04	Fixed Tailings Conveyor No. 2 (CV-F2) to Fixed Tailings Conveyor No. 3 (CV-F3)	FiltTailPrt	3-03-024-08	NF	257,328	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.003	0.003	0.001	0.001	0.0002	0.0002
TDS05	Fixed Tailings Conveyor No. 3 (CV-F3) to Relocatable Conveyor (CV-R1)	FiltTailPrt	3-03-024-08	F	257,328	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.003	0.003	0.001	0.001	0.0002	0.0002
TDS06	Relocatable Conveyor (CV-R1) to Shiftable Conveyor (CV-S1)	FiltTailPrt	3-03-024-08	F	257,328	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.003	0.003	0.001	0.001	0.0002	0.0002
TDS07	Shiftable Conveyor (CV-S1) to Belt Wagon Conveyor (CV-BW1)	FiltTail	3-03-024-08	F	257,328	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	0.02	0.02	0.01	0.01	0.002	0.002
TDS08	Belt Wagon Conveyor (CV-BW1) to Spreader Crawler Mounted Conveyor (CV-SP1)	FiltTail	3-03-024-08	F	257,328	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	0.02	0.02	0.01	0.01	0.002	0.002
TDS09	Spreader Crawler Mounted Conveyor (CV-SP1) to Tailings Storage	FiltTail	3-03-024-08	F	257,328	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	0.02	0.02	0.01	0.01	0.002	0.002
TDS10	Wind Erosion of Tailings Storage	TailStrg	3-03-888-01	F	1,500	acres	0.02	0.01	0.002	ton/acre-yr	None	0%	0.08	0.08	0.04	0.04	0.006	0.006
Fuel Burning Equipment																		
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	24	hours	3.30	2.30	1.54	lb/1000 gal	None	0%	0.002	0.002	0.001	0.001	0.0008	0.0008
					6.0	MMBtu/hr												
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.005	0.005	0.005	0.005	0.005	0.005
					1,000	kW												
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.005	0.005	0.005	0.005	0.005	0.005
					1,000	kW												
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.004	0.004	0.004	0.004	0.004	0.004
					750	kW												
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.004	0.004	0.004	0.004	0.004	0.004
					750	kW												
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	24	hours	0.40	0.40	0.40	g/kW-hr	None	0%	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
					50	kW												
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.002	0.002	0.002	0.002	0.002	0.002
					400	hp												
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	24	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.002	0.002	0.002	0.002	0.002	0.002
					400	hp												

Table H.81 Maximum Daily Particulate Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 20	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (tpd) - Year 20		PM_{10} Emissions (tpd) - Year 20		$PM_{2.5}$ Emissions (tpd) - Year 20	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Miscellaneous Sources																		
MS01	Transfer of Lime to the Lime Storage Bin (B-L)	LimeLd	3-05-016-26	NF	186.41	tons	0.61	0.29	0.04	lb/ton	BPLSV [a]	90%	0.006	0.006	0.003	0.003	0.0004	0.0004
MS02	Lime Storage Bin (B-L) to Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2)	ReagTr	3-03-024-04	NF	186.41	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS03	Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2) to Lime Slakers 1 and 2 (T-LS1/2)	ReagTr	3-03-024-04	NF	186.41	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS04	Lime Slaking in Lime Slakers 1 and 2 (T-LS1/2)	LimeSlk	3-05-016-09	NF	186.41	tons	8.00	8.00	8.00	lb/ton	LSS	99%	0.75	0.007	0.75	0.007	0.75	0.007
MS05	Transfer of Sodium Metasilicate to the Sodium Metasilicate Storage Bin (B-SM)	ReagTr	3-03-024-04	NF	9.86	tons	0.008	0.004	0.0006	lb/ton	SMSV [a]	90%	0.000004	0.000004	0.000002	0.000002	0.0000003	0.0000003
MS06	Transfer of Flocculant from Supersacks to Flocculant Storage Bins (B-F1/F2)	ReagTr	3-03-024-04	NF	3.62	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.00001	0.00001	0.000007	0.000007	0.000001	0.000001
MS07	Transfer of Guar from Bags to Guar Feeder (F-Gu)	ReagTr	3-03-024-04	NF	0.49	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.000002	0.000002	0.000001	0.000001	0.0000001	0.0000001
MS08	Transfer of Granular Cobalt Sulfate from Bags to Cobalt Sulfate Feeder (F-CoS)	ReagTr	3-03-024-04	NF	0.02	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.00000008	0.00000008	0.00000004	0.00000004	0.000000006	0.000000006
Particulate Matter Pollution Control Equipment with Emission Limits																		
PCL01	Crushing Area Dust Collector (PC-CADC)	CADC	none	NF	24	hours	1.42	0.64	0.12	lb/hr	--	--	--	0.02	--	0.008	--	0.001
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	SARTDC	none	NF	24	hours	3.11	1.47	0.22	lb/hr	--	--	--	0.04	--	0.02	--	0.003
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	SFCDC	none	NF	24	hours	0.76	0.36	0.05	lb/hr	--	--	--	0.01	--	0.004	--	0.001
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	PCADC	none	NF	24	hours	0.96	0.32	0.06	lb/hr	--	--	--	0.01	--	0.004	--	0.0007
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	CCDC	none	NF	24	hours	3.76	1.78	0.27	lb/hr	--	--	--	0.05	--	0.02	--	0.003
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	CCDC	none	NF	24	hours	3.76	1.78	0.27	lb/hr	--	--	--	0.05	--	0.02	--	0.003
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	MS/EP	none	NF	24	hours	0.015	0.014	0.013	lb/hr	--	--	--	0.0002	--	0.0002	--	0.0002
PCL08	Molybdenum Dust Collector (PC-MDC)	MDC	none	NF	24	hours	0.112	0.053	0.008	lb/hr	--	--	--	0.001	--	0.0006	--	0.0001
PCL09	Laboratory Dust Collector 1 (PC-L1)	LDC	none	NF	11,937,850	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.007	--	0.004	--	0.002
PCL10	Laboratory Dust Collector 2 (PC-L2)	LDC	none	NF	11,937,850	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.007	--	0.004	--	0.002
PCL11	Laboratory Dust Collector 3 (PC-L3)	LDC	none	NF	11,937,850	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.007	--	0.004	--	0.002
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	SFDC	none	NF	24	hours	0.97	0.46	0.07	lb/hr	--	--	--	0.01	--	0.006	--	0.0008
Total Non-Fugitive Emissions (excluding tailpipe emissions):													**4.25**	**0.24**	**2.26**	**0.13**	**1.13**	**0.05**
Total Fugitive Emissions (excluding tailpipe emissions):													**49.17**	**5.94**	**12.75**	**1.62**	**1.30**	**0.19**
Total Emissions (excluding tailpipe emissions):													**53.42**	**6.18**	**15.01**	**1.75**	**2.43**	**0.24**
Tailpipe Emissions (see Tables H.86-H.88):													**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**

[a] The control efficiency for this emission unit is inherent to the process. Therefore, the control efficiency is applied to both uncontrolled and controlled emissions.

Table H.82 Maximum Hourly Particulate Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 20	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (lb/hr) - Year 20		PM_{10} Emissions (lb/hr) - Year 20		$PM_{2.5}$ Emissions (lb/hr) - Year 20	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Mining																		
MN01	Drilling	Drilling	3-05-020-10	F	80	holes	1.30	0.43	0.08	lb/hole	None	0%	104.00	104.00	34.67	34.67	6.42	6.42
MN02	Blasting	Blast	3-05-020-09	F	1.00	blasts	328.26	170.69	9.85	lb/blast	None	0%	328.26	328.26	170.69	170.69	9.85	9.85
MN03	Loading Concentrate Ore	Loading	3-03-024-08	F	3,750	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	2.63	2.63	1.24	1.24	0.19	0.19
MN04	Loading Leach Ore	Loading	3-03-024-08	F	0	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0	0	0	0	0	0
MN05	Loading Waste Rock	Loading	3-03-024-08	F	600	tons	0.0007	0.0003	0.00005	lb/ton	None	0%	0.42	0.42	0.20	0.20	0.03	0.03
MN06a	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Inside the Pit)	HaulingHD	3-05-020-11	F	95	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	2024.41	202.44	520.18	52.02	52.02	5.20
MN06b	Hauling Concentrate Ore to Primary Crusher Dump Hopper / Run of Mine Stockpile (Outside the Pit)	HaulingHD	3-05-020-11	F	26	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	554.69	55.47	142.53	14.25	14.25	1.43
MN07a	Hauling Leach Ore to Leach Pad (Inside the Pit)	HaulingHD	3-05-020-11	F	0	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	0	0	0	0	0	0
MN07b	Hauling Leach Ore to Leach Pad (Outside the Pit)	HaulingHD	3-05-020-11	F	0	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	0	0	0	0	0	0
MN08a	Hauling Waste Rock to Waste Rock Storage Area (Inside the Pit)	HaulingHD	3-05-020-11	F	16	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUI	90%	349.59	34.96	89.83	8.98	8.98	0.90
MN08b	Hauling Waste Rock to Waste Rock Storage Area (Outside the Pit)	HaulingHD	3-05-020-11	F	15	VMT	21.25	5.46	0.55	lb/VMT	HaulRdUO	90%	313.40	31.34	80.53	8.05	8.05	0.81
MN09	Unloading Concentrate Ore to Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	3,750	tons	0.001	0.0006	0.00009	lb/ton	None	0%	4.46	4.46	2.11	2.11	0.32	0.32
MN10	Unloading Leach Ore to Leach Pad	TrStnUnp	3-03-024-08	F	0	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0	0	0	0	0	0
MN11	Unloading Waste Rock to Waste Rock Storage Area	TrStnUnp	3-03-024-08	F	600	tons	0.001	0.0006	0.00009	lb/ton	None	0%	0.71	0.71	0.34	0.34	0.05	0.05
MN12	Bulldozer Use	Bldzrs	3-05-020-99	F	4	hrs	2.82	0.43	0.30	lb/hr	None	0%	9.88	9.88	1.49	1.49	1.04	1.04
MN13a	Water Truck Use (Inside the Pit)	WtrTrksHD	3-05-020-99	F	9	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTI	90%	150.63	15.06	38.70	3.87	3.87	0.39
MN13b	Water Truck Use (Outside the Pit)	WtrTrksHD	3-05-020-99	F	3	VMT	17.06	4.38	0.44	lb/VMT	HaulRdWTO	90%	55.08	5.51	14.15	1.42	1.42	0.14
MN14	Grader Use	GradersY20	3-05-020-99	F	7	VMT	2.18	0.75	0.07	lb/VMT	None	0%	14.79	14.79	5.08	5.08	0.46	0.46
MN15a	Support Vehicle Use on Unpaved Roads (Inside the Pit)	SupVehUY20H	3-03-999-99	F	31	VMT	8.89	2.29	0.23	lb/VMT	HaulRdUI	90%	279.67	27.97	71.86	7.19	7.19	0.72
MN15b	Support Vehicle Use on Unpaved Roads (Outside the Pit)	SupVehUY20H	3-03-999-99	F	31	VMT	8.89	2.29	0.23	lb/VMT	HaulRdUO	90%	279.67	27.97	71.86	7.19	7.19	0.72
M16a	Support Vehicle Use on the Paved Entrance Road (within the process area boundary)	SupVehPEY20H	3-03-999-99	F	25	VMT	0.05	0.01	0.003	lb/VMT	None	0%	1.35	1.35	0.27	0.27	0.07	0.07
M16b	Support Vehicle Use on the Paved Entrance Road (outside of the process area boundary)	SupVehPEY20H	3-03-999-99	F	110	VMT	0.05	0.01	0.003	lb/VMT	None	0%	5.87	5.87	1.17	1.17	0.29	0.29
M16c	Support Vehicle Use on Paved Industrial Roads	SupVehPIY20H	3-03-999-99	F	39	VMT	1.23	0.25	0.06	lb/VMT	None	0%	47.33	47.33	9.47	9.47	2.32	2.32
Primary Crushing, Conveying, Coarse Ore Storage, and Reclaim Conveying																		
PC01	Wind Erosion of the Run of Mine Stockpile	WindROM	3-03-888-01	F	26	acres	0.21	0.11	0.02	ton/acre-yr	None	0%	1.24	1.24	0.62	0.62	0.09	0.09
PC02	Unloading to Primary Crusher Dump Hopper (H-CDp) from Haul Trucks or Run of Mine Stockpile	TrStnUnp	3-03-024-08	F	6,950	tons	0.001	0.0006	0.00009	lb/ton	WSpry	82.5%	8.26	1.45	3.91	0.68	0.59	0.10
PC03	Primary Crusher (PCr)	CrushP	3-03-024-05	NF	6,950	tons	0.02	0.009	0.002	lb/ton	CADC	100%	139.00	0	62.55	0	11.58	0
PC04	Primary Crusher (PCr) to Crusher Discharge Hopper (H-CDs)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
PC05	Crusher Discharge Hopper (H-CDs) to Crusher Discharge Feeder (F-CD)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	1.08	0	0.51	0	0.08	0
PC06	Crusher Discharge Feeder (F-CD) to Stockpile Feed Conveyor No. 1 (CV-SF1)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	CADC	100%	1.08	0	0.51	0	0.08	0

Table H.82 Maximum Hourly Particulate Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 20	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (lb/hr) - Year 20		PM_{10} Emissions (lb/hr) - Year 20		$PM_{2.5}$ Emissions (lb/hr) - Year 20	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
PC07	Stockpile Feed Conveyor No. 1 (CV-SF1) to Stockpile Feed Conveyor No. 2 (CV-SF2)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SFCDC	100%	1.08	0	0.51	0	0.08	0
PC08	Stockpile Feed Conveyor No. 2 (CV-SF2) to Covered Coarse Ore Stockpile	TrStnPrt	3-03-024-08	F	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	1.08	0	0.51	0	0.08	0
PC09	Wind Erosion of the Coarse Ore Stockpile	WindCvd	3-03-888-01	F	5	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
PC10	Coarse Ore Stockpile to Reclaim Feeders (F-R1/R4)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	UndrGrd [a]	100%	0	0	0	0	0	0
PC11	Reclaim Feeders (F-R1/R4) to Reclaim Conveyor (CV-R)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SARTDC	100%	1.08	0	0.51	0	0.08	0
PC12	Reclaim Conveyor (CV-R) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	6,950	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	1.08	0	0.51	0	0.08	0
PC13	Pebble Conveyor No. 3 (CV-Pb3) to SAG Mill Feed Conveyor (CV-SMF)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	SFDC	100%	0.28	0	0.13	0	0.02	0
PC14	SAG Mill Feed Conveyor (CV-SMF) to SAG Mill (M-SAG)	TrStnPrt	3-03-024-08	NF	8,721	tons	0.0002	0.00007	0.00001	lb/ton	Water [a]	100%	0	0	0	0	0	0
Milling																		
M01	SAG Mill (M-SAG)	CrushS	3-03-024-06	NF	8,726	tons	0.05	0.02	0.004	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M02	SAG Mill (M-SAG) to Trommel Screen (Sn-T)	TrStnPrt	3-03-024-08	NF	8,726	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M03	Trommel Screen (Sn-T)	Screen	3-05-020-02	NF	8,726	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M04	Trommel Screen (Sn-T) to Pebble Conveyor No. 1 (CV-Pb1)	TrStnPrt	3-03-024-08	NF	1,851	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M05	Pebble Conveyor No. 1 (CV-Pb1) to Pebble Wash Screen (Sn-PbW)	TrStnPrt	3-03-024-08	NF	1,851	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M06	Pebble Wash Screen (Sn-PbW)	Screen	3-05-020-02	NF	1,851	tons	0.025	0.0087	0.0006	lb/ton	Wet [a]	100%	0	0	0	0	0	0
M07	Pebble Wash Screen (Sn-PbW) to Pebble Conveyor No. 2	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	Clean [a]	100%	0	0	0	0	0	0
M08	Pebble Conveyor No. 2 (CV-Pb2) to SAG Oversize Surge Bin (B-SAGOS)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.28	0	0.13	0	0.02	0
M09	SAG Oversize Surge Bin (B-SAGOS) to Pebble Crusher Feeder (F-PbC)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.28	0	0.13	0	0.02	0
M10	Pebble Crusher Feeder (F-PbC) to Pebble Crusher (PbC)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
M11	Pebble Crusher (PbC)	CrushT	3-03-024-07	NF	1,771	tons	0.06	0.02	0.00	lb/ton	PCADC	100%	106.27	0	35.42	0	6.56	0
M12	Pebble Crusher (PbC) to Pebble Conveyor No. 3 (CV-Pb3)	TrStnPrt	3-03-024-08	NF	1,771	tons	0.0002	0.00007	0.00001	lb/ton	PCADC	100%	0.28	0	0.13	0	0.02	0
Copper Concentrate Dewatering and Stacking																		
CCD01	Copper Concentrate Filters (Ft-CC1/CC4) to Copper Concentrate Conveyor (CV-CC)	TrCuCncPrt	3-03-024-08	NF	138	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
CCD02	Copper Concentrate Conveyor (CV-CC) to Copper Concentrate Loadout Stockpile	TrCuCncPrt	3-03-024-08	F	138	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.006	0	0.003	0	0.0004	0
CCD03	Wind Erosion of Copper Concentrate Loadout Stockpile	WindCvd	3-03-888-01	F	1.17	acres	0	0	0	ton/acre-yr	Enclosed [a]	100%	0	0	0	0	0	0
CCD04	Copper Concentrate Loadout Stockpile to Shipment Truck via Front End Loaders	TrCuCncPrt	3-03-024-08	F	138	tons	0.00004	0.00002	0.000003	lb/ton	CCDC	100%	0.006	0	0.003	0	0.0004	0
Molybdenum Dewatering and Packaging																		
MD01	Molybdenum Concentrate Filter (Ft-MC) to Molybdenum Concentrate Dryer (D-MC)	TrMlyCncPrt	3-03-024-08	NF	1.9	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD02	Molybdenum Concentrate Dryer	MolyDry	3-03-024-11	NF	1.9	tons	19.70	12.00	5.91	lb/ton	MS/EP	100%	37.43	0	22.80	0	11.23	0
MD03	Molybdenum Concentrate Dryer (D-MC) to Molybdenum Concentrate Bin (B-MC)	DTrMlyCncPrt	3-03-024-08	NF	1.9	tons	0.00004	0.00002	0.000003	lb/ton	MDC	100%	0.00008	0	0.00004	0	0.000006	0
MD04	Molybdenum Concentrate Bin (B-MC) to Molybdenum Concentrate Hopper (H-MC)	DTrMlyCnc	3-03-024-08	NF	1.9	tons	0.0003	0.0002	0.00002	lb/ton	None	0%	0.0006	0.0006	0.0003	0.0003	0.00004	0.00004

Table H.82 Maximum Hourly Particulate Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 20	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (lb/hr) - Year 20		PM_{10} Emissions (lb/hr) - Year 20		$PM_{2.5}$ Emissions (lb/hr) - Year 20	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
MD05	Molybdenum Concentrate Hopper (H-MC) to Molybdenum Concentrate Conveyor (CV-MC)	DTrMlyCncPrt	3-03-024-08	NF	1.9	tons	0.00004	0.00002	0.000003	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MD06	Molybdenum Concentrate Conveyor (CV-MC) to Molybdenum Packaging and Weigh System (MPS)	DTrMlyCnc	3-03-024-08	NF	1.9	tons	0.0003	0.0002	0.00002	lb/ton	MDC	100%	0.0006	0	0.0003	0	0.00004	0
Tailings Dewatering and Placement																		
TDS01	Tailings Filters (Ft-T1/T14) to Tailings Belt Feeders (F-T1/T14)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS02	Tailings Belt Feeders (F-T1/T14) to Fixed Tailings Conveyor No. 1 (CV-F1)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS03	Fixed Tailings Conveyor No. 1 (CV-F1) to Fixed Tailings Conveyor No. 2 (CV-F2)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
TDS04	Fixed Tailings Conveyor No. 2 (CV-F2) to Fixed Tailings Conveyor No. 3 (CV-F3)	FiltTailPrt	3-03-024-08	NF	10,722	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.26	0.26	0.12	0.12	0.02	0.02
TDS05	Fixed Tailings Conveyor No. 3 (CV-F3) to Relocatable Conveyor (CV-R1)	FiltTailPrt	3-03-024-08	F	10,722	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.26	0.26	0.12	0.12	0.02	0.02
TDS06	Relocatable Conveyor (CV-R1) to Shiftable Conveyor (CV-S1)	FiltTailPrt	3-03-024-08	F	10,722	tons	0.00002	0.00001	0.000002	lb/ton	None	0%	0.26	0.26	0.12	0.12	0.02	0.02
TDS07	Shiftable Conveyor (CV-S1) to Belt Wagon Conveyor (CV-BW1)	FiltTail	3-03-024-08	F	10,722	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	2.00	2.00	0.95	0.95	0.14	0.14
TDS08	Belt Wagon Conveyor (CV-BW1) to Spreader Crawler Mounted Conveyor (CV-SP1)	FiltTail	3-03-024-08	F	10,722	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	2.00	2.00	0.95	0.95	0.14	0.14
TDS09	Spreader Crawler Mounted Conveyor (CV-SP1) to Tailings Storage	FiltTail	3-03-024-08	F	10,722	tons	0.0002	0.00009	0.00001	lb/ton	None	0%	2.00	2.00	0.95	0.95	0.14	0.14
TDS10	Wind Erosion of Tailings Storage	TailStrg	3-03-888-01	F	1,500	acres	0.02	0.01	0.002	ton/acre-yr	None	0%	6.90	6.90	3.45	3.45	0.52	0.52
Fuel Burning Equipment																		
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	1	hours	3.30	2.30	1.54	lb/1000 gal	None	0%	0.14	0.14	0.10	0.10	0.07	0.07
					6.0	MMBtu/hr												
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.44	0.44	0.44	0.44	0.44	0.44
					1,000	kW												
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.44	0.44	0.44	0.44	0.44	0.44
					1,000	kW												
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.33	0.33	0.33	0.33	0.33	0.33
					750	kW												
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.33	0.33	0.33	0.33	0.33	0.33
					750	kW												
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	1	hours	0.40	0.40	0.40	g/kW-hr	None	0%	0.04	0.04	0.04	0.04	0.04	0.04
					50	kW												
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.13	0.13	0.13	0.13	0.13	0.13
					400	hp												
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	1	hours	0.20	0.20	0.20	g/kW-hr	None	0%	0.13	0.13	0.13	0.13	0.13	0.13
					400	hp												

Table H.82 Maximum Hourly Particulate Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 20	Rate Units	Emission Factors			EF Units	Control Code	Pick-up or Control Eff. (%)	PM/TSP Emissions (lb/hr) - Year 20		PM_{10} Emissions (lb/hr) - Year 20		$PM_{2.5}$ Emissions (lb/hr) - Year 20	
							PM/TSP	PM_{10}	$PM_{2.5}$				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Miscellaneous Sources																		
MS01	Transfer of Lime to the Lime Storage Bin (B-L)	LimeLd	3-05-016-26	NF	7.77	tons	0.61	0.29	0.04	lb/ton	BPLSV [a]	90%	0.47	0.47	0.22	0.22	0.03	0.03
MS02	Lime Storage Bin (B-L) to Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2)	ReagTr	3-03-024-04	NF	7.77	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS03	Lime Transfer Screw Conveyors 1 and 2 (CV-LTS1/2) to Lime Slakers 1 and 2 (T-LS1/2)	ReagTr	3-03-024-04	NF	7.77	tons	0.008	0.004	0.0006	lb/ton	Enclosed [a]	100%	0	0	0	0	0	0
MS04	Lime Slaking in Lime Slakers 1 and 2 (T-LS1/2)	LimeSlk	3-05-016-09	NF	7.77	tons	8.00	8.00	8.00	lb/ton	LSS	99%	62.14	0.62	62.14	0.62	62.14	0.62
MS05	Transfer of Sodium Metasilicate to the Sodium Metasilicate Storage Bin (B-SM)	ReagTr	3-03-024-04	NF	0.41	tons	0.008	0.004	0.0006	lb/ton	SMSV [a]	90%	0.0003	0.0003	0.0002	0.0002	0.00002	0.00002
MS06	Transfer of Flocculant from Supersacks to Flocculant Storage Bins (B-F1/F2)	ReagTr	3-03-024-04	NF	0.15	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.001	0.001	0.0006	0.0006	0.00009	0.00009
MS07	Transfer of Guar from Bags to Guar Feeder (F-Gu)	ReagTr	3-03-024-04	NF	0.02	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.0002	0.0002	0.00008	0.00008	0.00001	0.00001
MS08	Transfer of Granular Cobalt Sulfate from Bags to Cobalt Sulfate Feeder (F-CoS)	ReagTr	3-03-024-04	NF	0.0008	tons	0.008	0.004	0.0006	lb/ton	None	0%	0.000007	0.000007	0.000003	0.000003	0.0000005	0.0000005
Particulate Matter Pollution Control Equipment with Emission Limits																		
PCL01	Crushing Area Dust Collector (PC-CADC)	CADC	none	NF	1	hours	1.42	0.64	0.12	lb/hr	--	--	--	1.42	--	0.64	--	0.12
PCL02	Stockpile Area and Reclaim Tunnel Dust Collector (PC-SARTDC)	SARTDC	none	NF	1	hours	3.11	1.47	0.22	lb/hr	--	--	--	3.11	--	1.47	--	0.22
PCL03	Stockpile Feed Conveyor Transfer Point Dust Collector (PC-SFCDC)	SFCDC	none	NF	1	hours	0.76	0.36	0.05	lb/hr	--	--	--	0.76	--	0.36	--	0.05
PCL04	Pebble Crusher Area Dust Collector (PC-PCADC)	PCADC	none	NF	1	hours	0.96	0.32	0.06	lb/hr	--	--	--	0.96	--	0.32	--	0.06
PCL05	Copper Concentrate Dust Collector 1 (PC-CCDC1)	CCDC	none	NF	1	hours	3.76	1.78	0.27	lb/hr	--	--	--	3.76	--	1.78	--	0.27
PCL06	Copper Concentrate Dust Collector 2 (PC-CCDC2)	CCDC	none	NF	1	hours	3.76	1.78	0.27	lb/hr	--	--	--	3.76	--	1.78	--	0.27
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	MS/EP	none	NF	1	hours	0.015	0.014	0.013	lb/hr	--	--	--	0.02	--	0.01	--	0.01
PCL08	Molybdenum Dust Collector (PC-MDC)	MDC	none	NF	1	hours	0.112	0.053	0.008	lb/hr	--	--	--	0.11	--	0.05	--	0.008
PCL09	Laboratory Dust Collector 1 (PC-L1)	LDC	none	NF	497,410	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.58	--	0.36	--	0.17
PCL10	Laboratory Dust Collector 2 (PC-L2)	LDC	none	NF	497,410	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.58	--	0.36	--	0.17
PCL11	Laboratory Dust Collector 3 (PC-L3)	LDC	none	NF	497,410	dscf	0.008	0.005	0.002	gr/dscf	--	--	--	0.58	--	0.36	--	0.17
PCL12	SAG Feed Conveyor Dust Collector (PC-SFDC)	SFDC	none	NF	1	hours	0.97	0.46	0.07	lb/hr	--	--	--	0.97	--	0.46	--	0.07
Total Non-Fugitive Emissions (excluding tailpipe emissions):													**354.09**	**19.98**	**188.29**	**10.86**	**93.95**	**4.20**
Total Fugitive Emissions (excluding tailpipe emissions):													**4,550.88**	**936.54**	**1,267.96**	**337.54**	**125.74**	**32.51**
Total Emissions (excluding tailpipe emissions):													**4,904.96**	**956.52**	**1,456.26**	**348.41**	**219.69**	**36.71**
Tailpipe Emissions (see Tables H.86-H.88):													**8.53**	**8.53**	**8.53**	**8.53**	**8.53**	**8.53**

[a] The control efficiency for this emission unit is inherent to the process. Therefore, the control efficiency is applied to both uncontrolled and controlled emissions.

Table H.83 Annual Gaseous Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 20	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 20								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
Mining																										
MN02	Blasting	Blast	3-05-020-09	F	5,252	tons ANFO	67.00	17.00	2.00	0	0	566	0.02	0.005	--	--	lb/tons ANFO	175.94	44.64	5.25	0	0	1,487.50	0.06	0.01	--
Solvent Extraction and Electrowinning																										
SXE01	Solvent Extraction	SX	4-90-001-99	F	8,760	hours	0	0	0	9.43E-05	0	0	0	0	Benzene	3.37E-07	lb/hr-ft^2	0	0	0	3.77	0	0	0	0	1.35E-02
	4 Primary Mix Tanks (7.75' D x 9.75' H each)	4 @ 47.2 = 188.7	ft^2		9,132.9	ft^2	Total Surface Area of Solvent Extraction								Toluene	4.82E-06	lb/hr-ft^2									1.93E-01
	4 Secondary Mix Tanks (9.5' D x 9.75' H each)	4 @ 70.9 = 283.5	ft^2												Ethylbenzene	2.05E-05	lb/hr-ft^2									8.21E-01
	3 Tertiary Mix Tanks (9.5' D x 9.75' H each)	3 @ 70.9 = 212.6	ft^2												Xylenes	2.80E-05	lb/hr-ft^2									1.12E+00
	4 Extraction Settlers (64' L x 33' W x 3.33' H each)	4 @ 2,112 = 8,448	ft^2												Others (including Hexane)	2.94E-05	lb/hr-ft^2									1.18E+00
SXE02	Electrowinning Commercial Cells (EWCC)	EW	none	NF	8,760	hours	0	0	0	0	1.57E-04	0	0	0	Cobalt Compounds	2.36E-08	lb/hr-ft^2	0	0	0	0	0.02	0	0	0	2.72E-06
	Controlled by Cell Ventilation Scrubbers (PC-EWCVS1/EWCVS3)				2,640	ft^2																				
					99	Control Efficiency (%)																				
Fuel Burning Equipment																										
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	8,760	hours	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	POM	3.30E-03	lb/1000 gal	0.96	3.84	0.04	0.04	0	4,453.51	0.18	0.04	6.33E-04
					6.0	MMBtu/hr									Formaldehyde	6.10E-02	lb/1000 gal									1.17E-02
															Arsenic	4.00	lb/10^{12} Btu									1.05E-04
															Beryllium	3.00	lb/10^{12} Btu									7.88E-05
															Cadmium	3.00	lb/10^{12} Btu									7.88E-05
															Chromium	3.00	lb/10^{12} Btu									7.88E-05
															Lead	9.00	lb/10^{12} Btu									2.37E-04
															Mercury	3.00	lb/10^{12} Btu									7.88E-05
															Manganese	6.00	lb/10^{12} Btu									1.58E-04
															Nickel	3.00	lb/10^{12} Btu									7.88E-05
															Selenium	15.00	lb/10^{12} Btu									3.94E-04
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.93	3.31	0.004	0.22	0	382.65	0.02	0.003	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									1.82E-03
															Toluene	2.81E-04	lb/MMBtu									6.59E-04
															Xylenes	1.93E-04	lb/MMBtu									4.53E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.85E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									5.91E-05
															Acrolein	7.88E-06	lb/MMBtu									1.85E-05
															Naphthalene	1.30E-04	lb/MMBtu									3.05E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									2.17E-05
															Acenaphthene	4.68E-06	lb/MMBtu									1.10E-05
															Fluorene	1.28E-05	lb/MMBtu									3.00E-05
															Phenanthrene	4.08E-05	lb/MMBtu									9.57E-05
															Anthracene	1.23E-06	lb/MMBtu									2.89E-06
															Fluoranthene	4.03E-06	lb/MMBtu									9.46E-06
															Pyrene	3.71E-06	lb/MMBtu									8.71E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.46E-06
															Chrysene	1.53E-06	lb/MMBtu									3.59E-06

Table H.83 Annual Gaseous Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 20	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 20								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									2.60E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									5.12E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									6.03E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									9.72E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									8.12E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									1.30E-06
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.93	3.31	0.004	0.22	0	382.65	0.02	0.003	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									1.82E-03
															Toluene	2.81E-04	lb/MMBtu									6.59E-04
															Xylenes	1.93E-04	lb/MMBtu									4.53E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.85E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									5.91E-05
															Acrolein	7.88E-06	lb/MMBtu									1.85E-05
															Naphthalene	1.30E-04	lb/MMBtu									3.05E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									2.17E-05
															Acenaphthene	4.68E-06	lb/MMBtu									1.10E-05
															Fluorene	1.28E-05	lb/MMBtu									3.00E-05
															Phenanthrene	4.08E-05	lb/MMBtu									9.57E-05
															Anthracene	1.23E-06	lb/MMBtu									2.89E-06
															Fluoranthene	4.03E-06	lb/MMBtu									9.46E-06
															Pyrene	3.71E-06	lb/MMBtu									8.71E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.46E-06
															Chrysene	1.53E-06	lb/MMBtu									3.59E-06
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									2.60E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									5.12E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									6.03E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									9.72E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									8.12E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									1.30E-06
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.45	2.48	0.003	0.17	0	286.99	0.01	0.002	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									1.37E-03
															Toluene	2.81E-04	lb/MMBtu									4.95E-04
															Xylenes	1.93E-04	lb/MMBtu									3.40E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.39E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									4.44E-05
															Acrolein	7.88E-06	lb/MMBtu									1.39E-05
															Naphthalene	1.30E-04	lb/MMBtu									2.29E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									1.62E-05
															Acenaphthene	4.68E-06	lb/MMBtu									8.24E-06
															Fluorene	1.28E-05	lb/MMBtu									2.25E-05

Table H.83 Annual Gaseous Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 20	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 20								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Phenanthrene	4.08E-05	lb/MMBtu									7.18E-05
															Anthracene	1.23E-06	lb/MMBtu									2.16E-06
															Fluoranthene	4.03E-06	lb/MMBtu									7.09E-06
															Pyrene	3.71E-06	lb/MMBtu									6.53E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.09E-06
															Chrysene	1.53E-06	lb/MMBtu									2.69E-06
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.95E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									3.84E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									4.52E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									7.29E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									6.09E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									9.79E-07
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	500	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	1.45	2.48	0.003	0.17	0	286.99	0.01	0.002	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									1.37E-03
															Toluene	2.81E-04	lb/MMBtu									4.95E-04
															Xylenes	1.93E-04	lb/MMBtu									3.40E-04
															Formaldehyde	7.89E-05	lb/MMBtu									1.39E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									4.44E-05
															Acrolein	7.88E-06	lb/MMBtu									1.39E-05
															Naphthalene	1.30E-04	lb/MMBtu									2.29E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									1.62E-05
															Acenaphthene	4.68E-06	lb/MMBtu									8.24E-06
															Fluorene	1.28E-05	lb/MMBtu									2.25E-05
															Phenanthrene	4.08E-05	lb/MMBtu									7.18E-05
															Anthracene	1.23E-06	lb/MMBtu									2.16E-06
															Fluoranthene	4.03E-06	lb/MMBtu									7.09E-06
															Pyrene	3.71E-06	lb/MMBtu									6.53E-06
															Benz(a)anthracene	6.22E-07	lb/MMBtu									1.09E-06
															Chrysene	1.53E-06	lb/MMBtu									2.69E-06
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.95E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									3.84E-07
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									4.52E-07
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									7.29E-07
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									6.09E-07
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									9.79E-07
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	500	hours	5.00	4.43	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.14	0.12	0.0002	0.007	0	19.13	0.0008	0.0002	--
					50	kW									Benzene	9.33E-04	lb/MMBtu									1.09E-04
															Toluene	4.09E-04	lb/MMBtu									4.80E-05
															Xylenes	2.85E-04	lb/MMBtu									3.34E-05
															1,3-Butadiene	3.91E-05	lb/MMBtu									4.59E-06

Table H.83 Annual Gaseous Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 20	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 20								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Formaldehyde	1.18E-03	lb/MMBtu									1.38E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									9.00E-05
															Acrolein	9.25E-05	lb/MMBtu									1.09E-05
															Naphthalene	8.48E-05	lb/MMBtu									9.95E-06
															Acenaphthylene	5.06E-06	lb/MMBtu									5.94E-07
															Acenaphthene	1.42E-06	lb/MMBtu									1.67E-07
															Fluorene	2.92E-05	lb/MMBtu									3.43E-06
															Phenanthrene	2.94E-05	lb/MMBtu									3.45E-06
															Anthracene	1.87E-06	lb/MMBtu									2.19E-07
															Fluoranthene	7.61E-06	lb/MMBtu									8.93E-07
															Pyrene	4.78E-06	lb/MMBtu									5.61E-07
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									1.97E-07
															Chrysene	3.53E-07	lb/MMBtu									4.14E-08
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									1.16E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									1.82E-08
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									2.21E-08
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									4.40E-08
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									6.84E-08
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									5.74E-08
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	500	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.58	0.61	0.001	0.04	0	114.14	0.005	0.0009	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									6.53E-04
															Toluene	4.09E-04	lb/MMBtu									2.86E-04
															Xylenes	2.85E-04	lb/MMBtu									2.00E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									2.74E-05
															Formaldehyde	1.18E-03	lb/MMBtu									8.26E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									5.37E-04
															Acrolein	9.25E-05	lb/MMBtu									6.48E-05
															Naphthalene	8.48E-05	lb/MMBtu									5.94E-05
															Acenaphthylene	5.06E-06	lb/MMBtu									3.54E-06
															Acenaphthene	1.42E-06	lb/MMBtu									9.94E-07
															Fluorene	2.92E-05	lb/MMBtu									2.04E-05
															Phenanthrene	2.94E-05	lb/MMBtu									2.06E-05
															Anthracene	1.87E-06	lb/MMBtu									1.31E-06
															Fluoranthene	7.61E-06	lb/MMBtu									5.33E-06
															Pyrene	4.78E-06	lb/MMBtu									3.35E-06
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									1.18E-06
															Chrysene	3.53E-07	lb/MMBtu									2.47E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									6.94E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									1.09E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									1.32E-07

Table H.83 Annual Gaseous Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 20	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 20								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									2.63E-07
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									4.08E-07
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									3.42E-07
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	500	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.58	0.61	0.001	0.04	0	114.14	0.005	0.0009	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									6.53E-04
															Toluene	4.09E-04	lb/MMBtu									2.86E-04
															Xylenes	2.85E-04	lb/MMBtu									2.00E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									2.74E-05
															Formaldehyde	1.18E-03	lb/MMBtu									8.26E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									5.37E-04
															Acrolein	9.25E-05	lb/MMBtu									6.48E-05
															Naphthalene	8.48E-05	lb/MMBtu									5.94E-05
															Acenaphthylene	5.06E-06	lb/MMBtu									3.54E-06
															Acenaphthene	1.42E-06	lb/MMBtu									9.94E-07
															Fluorene	2.92E-05	lb/MMBtu									2.04E-05
															Phenanthrene	2.94E-05	lb/MMBtu									2.06E-05
															Anthracene	1.87E-06	lb/MMBtu									1.31E-06
															Fluoranthene	7.61E-06	lb/MMBtu									5.33E-06
															Pyrene	4.78E-06	lb/MMBtu									3.35E-06
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									1.18E-06
															Chrysene	3.53E-07	lb/MMBtu									2.47E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									6.94E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									1.09E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									1.32E-07
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									2.63E-07
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									4.08E-07
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									3.42E-07
Tanks																										
T01	C7 Distribution Tank (T-C7D)	C7DT	4-03-010-19	NF	8,760	hours	0	0	0	1.08E-01	0	0	0	0	--	--	lb/hr	0	0	0	0.47	0	0	0	0	--
T02	MIBC Storage Tank (T-MIBCS)	MST	4-90-999-98	NF	8,760	hours	0	0	0	3.53E-03	0	0	0	0	--	--	lb/hr	0	0	0	0.02	0	0	0	0	--
T03	Diesel Fuel Storage Tank - Heavy Vehicles 1 (T-DFS-HV1)	DFSTHV	4-03-010-19	NF	8,760	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.06	0	0	0	0	2.50E-05
															Benzene	2.74E-05	lb/hr									1.20E-04
															Toluene	3.18E-04	lb/hr									1.40E-03
															Ethylbenzene	4.45E-05	lb/hr									1.95E-04
															m-Xylene	8.23E-04	lb/hr									3.61E-03
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									2.96E-03
T04	Diesel Fuel Storage Tank - Heavy Vehicles 2 (T-DFS-HV2)	DFSTHV	4-03-010-19	NF	8,760	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.06	0	0	0	0	2.50E-05
															Benzene	2.74E-05	lb/hr									1.20E-04
															Toluene	3.18E-04	lb/hr									1.40E-03
															Ethylbenzene	4.45E-05	lb/hr									1.95E-04

Table H.83 Annual Gaseous Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Annual Production Rate - Year 20	Rate Units	Emission Factors										EF Units	Emissions (tpy) - Year 20								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															m-Xylene	8.23E-04	lb/hr									3.61E-03
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									2.96E-03
Total Non-Fugitive Emissions (excluding tailpipe emissions):																		**9.00**	**16.76**	**0.06**	**1.51**	**0.02**	**6,040.20**	**0.25**	**0.05**	**0.05**
Total Fugitive Emissions (excluding tailpipe emissions):																		**175.94**	**44.64**	**5.25**	**3.77**	**0**	**1,487.50**	**0.06**	**0.01**	**3.32**
Total Emissions (excluding tailpipe emissions):																		**184.94**	**61.40**	**5.31**	**5.28**	**0.02**	**7,527.70**	**0.31**	**0.06**	**3.37**
Tailpipe Emissions (see Tables H.89-H.93):																		**795.06**	**999.01**	**1.54**	**70.85**	**--**	**156,725.16**	**--**	**--**	**--**

[a] CO_2e emissions are calculcated by summing the individual greenhouse gas emissions multiplied by their global warming potential (GWP). GWP of CO_2 = 1, GWP of CH_4 = 21, GWP of N_2O = 310.

[b] All HAP emissions are included in the facility-wide potential to emit, regardless of if they are fugitive or non-fugitive emissions.

Table H.84 Maximum Daily Gaseous Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 20	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 20								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
Mining																										
MN02	Blasting	Blast	3-05-020-09	F	52	tons ANFO	67.00	17.00	2.00	0	0	566	0.02	0.005	--	--	lb/tons ANFO	1.74	0.44	0.05	0	0	14.73	0.0006	0.0001	--
Solvent Extraction and Electrowinning																										
SXE01	Solvent Extraction	SX	4-90-001-99	F	24	hours	0	0	0	9.43E-05	0	0	0	0	Benzene	3.37E-07	lb/hr-ft^2	0	0	0	0.01	0	0	0	0	3.69E-05
	4 Primary Mix Tanks (7.75' D x 9.75' H each)	4 @ 47.2 = 188.7	ft^2		9,132.9	ft^2	Total Surface Area of Solvent Extraction								Toluene	4.82E-06	lb/hr-ft^2									5.28E-04
	4 Secondary Mix Tanks (9.5' D x 9.75' H each)	4 @ 70.9 = 283.5	ft^2												Ethylbenzene	2.05E-05	lb/hr-ft^2									2.25E-03
	3 Tertiary Mix Tanks (9.5' D x 9.75' H each)	3 @ 70.9 = 212.6	ft^2												Xylenes	2.80E-05	lb/hr-ft^2									3.07E-03
	4 Extraction Settlers (64' L x 33' W x 3.33' H each)	4 @ 2,112 = 8,448	ft^2												Others (including Hexane)	2.94E-05	lb/hr-ft^2									3.22E-03
SXE02	Electrowinning Commercial Cells (EWCC)	EW	none	NF	24	hours	0	0	0	0	1.57E-04	0	0	0	Cobalt Compounds	2.36E-08	lb/hr-ft^2	0	0	0	0	0.00005	0	0	0	7.46E-09
	Controlled by Cell Ventilation Scrubbers (PC-EWCVS1/EWCVS3)				2,640	ft^2																				
					99	Control Efficiency (%)																				
Fuel Burning Equipment																										
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	24	hours	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	POM	3.30E-03	lb/1000 gal	0.003	0.01	0.0001	0.0001	0	12.20	0.0005	0.0001	1.73E-06
					6.0	MMBtu/hr									Formaldehyde	6.10E-02	lb/1000 gal									3.21E-05
															Arsenic	4.00	lb/10^{12} Btu									2.88E-07
															Beryllium	3.00	lb/10^{12} Btu									2.16E-07
															Cadmium	3.00	lb/10^{12} Btu									2.16E-07
															Chromium	3.00	lb/10^{12} Btu									2.16E-07
															Lead	9.00	lb/10^{12} Btu									6.48E-07
															Mercury	3.00	lb/10^{12} Btu									2.16E-07
															Manganese	6.00	lb/10^{12} Btu									4.32E-07
															Nickel	3.00	lb/10^{12} Btu									2.16E-07
															Selenium	15.00	lb/10^{12} Btu									1.08E-06
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.09	0.16	0.0002	0.01	0	18.37	0.0007	0.0001	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									8.74E-05
															Toluene	2.81E-04	lb/MMBtu									3.17E-05
															Xylenes	1.93E-04	lb/MMBtu									2.17E-05
															Formaldehyde	7.89E-05	lb/MMBtu									8.89E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.84E-06
															Acrolein	7.88E-06	lb/MMBtu									8.88E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.46E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									1.04E-06
															Acenaphthene	4.68E-06	lb/MMBtu									5.27E-07
															Fluorene	1.28E-05	lb/MMBtu									1.44E-06
															Phenanthrene	4.08E-05	lb/MMBtu									4.60E-06
															Anthracene	1.23E-06	lb/MMBtu									1.39E-07
															Fluoranthene	4.03E-06	lb/MMBtu									4.54E-07
															Pyrene	3.71E-06	lb/MMBtu									4.18E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									7.01E-08
															Chrysene	1.53E-06	lb/MMBtu									1.72E-07

Table H.84 Maximum Daily Gaseous Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 20	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 20								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.25E-07
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.46E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.89E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									4.66E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.90E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									6.26E-08
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.09	0.16	0.0002	0.01	0	18.37	0.0007	0.0001	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									8.74E-05
															Toluene	2.81E-04	lb/MMBtu									3.17E-05
															Xylenes	1.93E-04	lb/MMBtu									2.17E-05
															Formaldehyde	7.89E-05	lb/MMBtu									8.89E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.84E-06
															Acrolein	7.88E-06	lb/MMBtu									8.88E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.46E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									1.04E-06
															Acenaphthene	4.68E-06	lb/MMBtu									5.27E-07
															Fluorene	1.28E-05	lb/MMBtu									1.44E-06
															Phenanthrene	4.08E-05	lb/MMBtu									4.60E-06
															Anthracene	1.23E-06	lb/MMBtu									1.39E-07
															Fluoranthene	4.03E-06	lb/MMBtu									4.54E-07
															Pyrene	3.71E-06	lb/MMBtu									4.18E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									7.01E-08
															Chrysene	1.53E-06	lb/MMBtu									1.72E-07
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.25E-07
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.46E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.89E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									4.66E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.90E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									6.26E-08
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.07	0.12	0.0001	0.008	0	13.78	0.0006	0.0001	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									6.56E-05
															Toluene	2.81E-04	lb/MMBtu									2.37E-05
															Xylenes	1.93E-04	lb/MMBtu									1.63E-05
															Formaldehyde	7.89E-05	lb/MMBtu									6.67E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.13E-06
															Acrolein	7.88E-06	lb/MMBtu									6.66E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.10E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									7.80E-07
															Acenaphthene	4.68E-06	lb/MMBtu									3.95E-07
															Fluorene	1.28E-05	lb/MMBtu									1.08E-06

Table H.84 Maximum Daily Gaseous Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 20	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 20								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Phenanthrene	4.08E-05	lb/MMBtu									3.45E-06
															Anthracene	1.23E-06	lb/MMBtu									1.04E-07
															Fluoranthene	4.03E-06	lb/MMBtu									3.40E-07
															Pyrene	3.71E-06	lb/MMBtu									3.13E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.25E-08
															Chrysene	1.53E-06	lb/MMBtu									1.29E-07
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									9.38E-08
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.84E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.17E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.50E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.92E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									4.70E-08
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	24	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	0.07	0.12	0.0001	0.008	0	13.78	0.0006	0.0001	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									6.56E-05
															Toluene	2.81E-04	lb/MMBtu									2.37E-05
															Xylenes	1.93E-04	lb/MMBtu									1.63E-05
															Formaldehyde	7.89E-05	lb/MMBtu									6.67E-06
															Acetaldehyde	2.52E-05	lb/MMBtu									2.13E-06
															Acrolein	7.88E-06	lb/MMBtu									6.66E-07
															Naphthalene	1.30E-04	lb/MMBtu									1.10E-05
															Acenaphthylene	9.23E-06	lb/MMBtu									7.80E-07
															Acenaphthene	4.68E-06	lb/MMBtu									3.95E-07
															Fluorene	1.28E-05	lb/MMBtu									1.08E-06
															Phenanthrene	4.08E-05	lb/MMBtu									3.45E-06
															Anthracene	1.23E-06	lb/MMBtu									1.04E-07
															Fluoranthene	4.03E-06	lb/MMBtu									3.40E-07
															Pyrene	3.71E-06	lb/MMBtu									3.13E-07
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.25E-08
															Chrysene	1.53E-06	lb/MMBtu									1.29E-07
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									9.38E-08
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.84E-08
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.17E-08
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.50E-08
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.92E-08
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									4.70E-08
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	24	hours	5.00	4.43	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.007	0.006	0.000009	0.0004	0	0.92	0.00004	0.000007	--
					50	kW									Benzene	9.33E-04	lb/MMBtu									5.25E-06
															Toluene	4.09E-04	lb/MMBtu									2.30E-06
															Xylenes	2.85E-04	lb/MMBtu									1.61E-06
															1,3-Butadiene	3.91E-05	lb/MMBtu									2.20E-07

Table H.84 Maximum Daily Gaseous Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 20	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 20								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Formaldehyde	1.18E-03	lb/MMBtu									6.65E-06
															Acetaldehyde	7.67E-04	lb/MMBtu									4.32E-06
															Acrolein	9.25E-05	lb/MMBtu									5.21E-07
															Naphthalene	8.48E-05	lb/MMBtu									4.78E-07
															Acenaphthylene	5.06E-06	lb/MMBtu									2.85E-08
															Acenaphthene	1.42E-06	lb/MMBtu									8.00E-09
															Fluorene	2.92E-05	lb/MMBtu									1.64E-07
															Phenanthrene	2.94E-05	lb/MMBtu									1.66E-07
															Anthracene	1.87E-06	lb/MMBtu									1.05E-08
															Fluoranthene	7.61E-06	lb/MMBtu									4.29E-08
															Pyrene	4.78E-06	lb/MMBtu									2.69E-08
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									9.46E-09
															Chrysene	3.53E-07	lb/MMBtu									1.99E-09
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									5.58E-10
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									8.73E-10
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									1.06E-09
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									2.11E-09
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									3.28E-09
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									2.75E-09
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	24	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.03	0.03	0.00005	0.002	0	5.48	0.0002	0.00004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									3.13E-05
															Toluene	4.09E-04	lb/MMBtu									1.37E-05
															Xylenes	2.85E-04	lb/MMBtu									9.58E-06
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.31E-06
															Formaldehyde	1.18E-03	lb/MMBtu									3.96E-05
															Acetaldehyde	7.67E-04	lb/MMBtu									2.58E-05
															Acrolein	9.25E-05	lb/MMBtu									3.11E-06
															Naphthalene	8.48E-05	lb/MMBtu									2.85E-06
															Acenaphthylene	5.06E-06	lb/MMBtu									1.70E-07
															Acenaphthene	1.42E-06	lb/MMBtu									4.77E-08
															Fluorene	2.92E-05	lb/MMBtu									9.81E-07
															Phenanthrene	2.94E-05	lb/MMBtu									9.88E-07
															Anthracene	1.87E-06	lb/MMBtu									6.28E-08
															Fluoranthene	7.61E-06	lb/MMBtu									2.56E-07
															Pyrene	4.78E-06	lb/MMBtu									1.61E-07
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									5.64E-08
															Chrysene	3.53E-07	lb/MMBtu									1.19E-08
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									3.33E-09
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									5.21E-09
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									6.32E-09

Table H.84 Maximum Daily Gaseous Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 20	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 20								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.26E-08
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.96E-08
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.64E-08
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	24	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.03	0.03	0.00005	0.002	0	5.48	0.0002	0.00004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									3.13E-05
															Toluene	4.09E-04	lb/MMBtu									1.37E-05
															Xylenes	2.85E-04	lb/MMBtu									9.58E-06
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.31E-06
															Formaldehyde	1.18E-03	lb/MMBtu									3.96E-05
															Acetaldehyde	7.67E-04	lb/MMBtu									2.58E-05
															Acrolein	9.25E-05	lb/MMBtu									3.11E-06
															Naphthalene	8.48E-05	lb/MMBtu									2.85E-06
															Acenaphthylene	5.06E-06	lb/MMBtu									1.70E-07
															Acenaphthene	1.42E-06	lb/MMBtu									4.77E-08
															Fluorene	2.92E-05	lb/MMBtu									9.81E-07
															Phenanthrene	2.94E-05	lb/MMBtu									9.88E-07
															Anthracene	1.87E-06	lb/MMBtu									6.28E-08
															Fluoranthene	7.61E-06	lb/MMBtu									2.56E-07
															Pyrene	4.78E-06	lb/MMBtu									1.61E-07
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									5.64E-08
															Chrysene	3.53E-07	lb/MMBtu									1.19E-08
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									3.33E-09
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									5.21E-09
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									6.32E-09
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.26E-08
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.96E-08
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.64E-08
Tanks																										
T01	C7 Distribution Tank (T-C7D)	C7DT	4-03-010-19	NF	24	hours	0	0	0	1.08E-01	0	0	0	0	--	--	lb/hr	0	0	0	0.001	0	0	0	0	--
T02	MIBC Storage Tank (T-MIBCS)	MST	4-90-999-98	NF	24	hours	0	0	0	3.53E-03	0	0	0	0	--	--	lb/hr	0	0	0	0.00004	0	0	0	0	--
T03	Diesel Fuel Storage Tank - Heavy Vehicles 1 (T-DFS-HV1)	DFSTHV	4-03-010-19	NF	24	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.0002	0	0	0	0	6.85E-08
															Benzene	2.74E-05	lb/hr									3.29E-07
															Toluene	3.18E-04	lb/hr									3.82E-06
															Ethylbenzene	4.45E-05	lb/hr									5.34E-07
															m-Xylene	8.23E-04	lb/hr									9.88E-06
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									8.11E-06
T04	Diesel Fuel Storage Tank - Heavy Vehicles 2 (T-DFS-HV2)	DFSTHV	4-03-010-19	NF	24	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.0002	0	0	0	0	6.85E-08
															Benzene	2.74E-05	lb/hr									3.29E-07
															Toluene	3.18E-04	lb/hr									3.82E-06
															Ethylbenzene	4.45E-05	lb/hr									5.34E-07

Table H.84 Maximum Daily Gaseous Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Daily Production Rate - Year 20	Rate Units	Emission Factors										EF Units	Emissions (tpd) - Year 20								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															m-Xylene	8.23E-04	lb/hr									9.88E-06
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									8.11E-06
Total Non-Fugitive Emissions (excluding tailpipe emissions):																		**0.39**	**0.63**	**0.0008**	**0.04**	**0.00005**	**88.36**	**0.004**	**0.0007**	**0.001**
Total Fugitive Emissions (excluding tailpipe emissions):																		**1.74**	**0.44**	**0.05**	**0.01**	**0**	**14.73**	**0.0006**	**0.0001**	**0.009**
Total Emissions (excluding tailpipe emissions):																		**2.13**	**1.07**	**0.05**	**0.05**	**0.00005**	**103.09**	**0.004**	**0.0008**	**0.01**
Tailpipe Emissions (see Tables H.89-H.93):																		**2.68**	**3.46**	**0.006**	**0.24**	**--**	**523.53**	**--**	**--**	**--**

[a] CO_2e emissions are calculcated by summing the individual greenhouse gas emissions multiplied by their global warming potential (GWP). GWP of CO_2 = 1, GWP of CH_4 = 21, GWP of N_2O = 310.

[b] All HAP emissions are included in the facility-wide potential to emit, regardless of if they are fugitive or non-fugitive emissions.

Table H.85 Hourly Gaseous Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 20	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 20								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
Mining																										
MN02	Blasting	Blast	3-05-020-09	F	52	tons ANFO	67.00	17.00	2.00	0	0	566	0.02	0.005	--	--	lb/tons ANFO	3,484.00	884.00	104.00	0	0	29,455.36	1.19	0.24	--
Solvent Extraction and Electrowinning																										
SXE01	Solvent Extraction	SX	4-90-001-99	F	1	hours	0	0	0	9.43E-05	0	0	0	0	Benzene	3.37E-07	lb/hr-ft^2	0	0	0	0.86	0	0	0	0	3.08E-03
	4 Primary Mix Tanks (7.75' D x 9.75' H each)	4 @ 47.2 = 188.7	ft^2		9,132.9	ft^2	Total Surface Area of Solvent Extraction								Toluene	4.82E-06	lb/hr-ft^2									4.40E-02
	4 Secondary Mix Tanks (9.5' D x 9.75' H each)	4 @ 70.9 = 283.5	ft^2												Ethylbenzene	2.05E-05	lb/hr-ft^2									1.87E-01
	3 Tertiary Mix Tanks (9.5' D x 9.75' H each)	3 @ 70.9 = 212.6	ft^2												Xylenes	2.80E-05	lb/hr-ft^2									2.56E-01
	4 Extraction Settlers (64' L x 33' W x 3.33' H each)	4 @ 2,112 = 8,448	ft^2												Others (including Hexane)	2.94E-05	lb/hr-ft^2									2.69E-01
SXE02	Electrowinning Commercial Cells (EWCC)	EW	none	NF	1	hours	0	0	0	0	1.57E-04	0	0	0	Cobalt Compounds	2.36E-08	lb/hr-ft^2	0	0	0	0	0.004	0	0	0	6.22E-07
	Controlled by Cell Ventilation Scrubbers (PC-EWCVS1/EWCVS3)				2,640	ft^2																				
					99	Control Efficiency (%)																				
Fuel Burning Equipment																										
FB01	Diesel Electrowinning Hot Water Generator (HWG)	DFB	1-02-005-03	NF	1	hours	5.00	20.00	0.21	0.20	0	23,217	0.94	0.19	POM	3.30E-03	lb/1000 gal	0.22	0.88	0.009	0.009	0	1,016.78	0.04	0.008	1.45E-04
					6.0	MMBtu/hr									Formaldehyde	6.10E-02	lb/1000 gal									2.67E-03
															Arsenic	4.00	lb/10^{12} Btu									2.40E-05
															Beryllium	3.00	lb/10^{12} Btu									1.80E-05
															Cadmium	3.00	lb/10^{12} Btu									1.80E-05
															Chromium	3.00	lb/10^{12} Btu									1.80E-05
															Lead	9.00	lb/10^{12} Btu									5.40E-05
															Mercury	3.00	lb/10^{12} Btu									1.80E-05
															Manganese	6.00	lb/10^{12} Btu									3.60E-05
															Nickel	3.00	lb/10^{12} Btu									1.80E-05
															Selenium	15.00	lb/10^{12} Btu									9.00E-05
FB02	Thickener Area Emergency Generator (TEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	7.72	13.23	0.01	0.88	0	1,530.61	0.06	0.01	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									7.28E-03
															Toluene	2.81E-04	lb/MMBtu									2.64E-03
															Xylenes	1.93E-04	lb/MMBtu									1.81E-03
															Formaldehyde	7.89E-05	lb/MMBtu									7.41E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									2.37E-04
															Acrolein	7.88E-06	lb/MMBtu									7.40E-05
															Naphthalene	1.30E-04	lb/MMBtu									1.22E-03
															Acenaphthylene	9.23E-06	lb/MMBtu									8.66E-05
															Acenaphthene	4.68E-06	lb/MMBtu									4.39E-05
															Fluorene	1.28E-05	lb/MMBtu									1.20E-04
															Phenanthrene	4.08E-05	lb/MMBtu									3.83E-04
															Anthracene	1.23E-06	lb/MMBtu									1.15E-05
															Fluoranthene	4.03E-06	lb/MMBtu									3.78E-05
															Pyrene	3.71E-06	lb/MMBtu									3.48E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.84E-06
															Chrysene	1.53E-06	lb/MMBtu									1.44E-05

Table H.85 Hourly Gaseous Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 20	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 20								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.04E-05
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.05E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.41E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.89E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.25E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									5.22E-06
FB03	PLS Pond Area Emergency Generator (PEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	7.72	13.23	0.01	0.88	0	1,530.61	0.06	0.01	--
					1,000	kW									Benzene	7.76E-04	lb/MMBtu									7.28E-03
															Toluene	2.81E-04	lb/MMBtu									2.64E-03
															Xylenes	1.93E-04	lb/MMBtu									1.81E-03
															Formaldehyde	7.89E-05	lb/MMBtu									7.41E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									2.37E-04
															Acrolein	7.88E-06	lb/MMBtu									7.40E-05
															Naphthalene	1.30E-04	lb/MMBtu									1.22E-03
															Acenaphthylene	9.23E-06	lb/MMBtu									8.66E-05
															Acenaphthene	4.68E-06	lb/MMBtu									4.39E-05
															Fluorene	1.28E-05	lb/MMBtu									1.20E-04
															Phenanthrene	4.08E-05	lb/MMBtu									3.83E-04
															Anthracene	1.23E-06	lb/MMBtu									1.15E-05
															Fluoranthene	4.03E-06	lb/MMBtu									3.78E-05
															Pyrene	3.71E-06	lb/MMBtu									3.48E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									5.84E-06
															Chrysene	1.53E-06	lb/MMBtu									1.44E-05
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									1.04E-05
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									2.05E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									2.41E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									3.89E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									3.25E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									5.22E-06
FB04	Main Substation Emergency Generator (MEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	5.79	9.92	0.01	0.66	0	1,147.96	0.05	0.009	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									5.46E-03
															Toluene	2.81E-04	lb/MMBtu									1.98E-03
															Xylenes	1.93E-04	lb/MMBtu									1.36E-03
															Formaldehyde	7.89E-05	lb/MMBtu									5.55E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									1.77E-04
															Acrolein	7.88E-06	lb/MMBtu									5.55E-05
															Naphthalene	1.30E-04	lb/MMBtu									9.15E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									6.50E-05
															Acenaphthene	4.68E-06	lb/MMBtu									3.29E-05
															Fluorene	1.28E-05	lb/MMBtu									9.01E-05

Table H.85 Hourly Gaseous Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 20	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 20								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Phenanthrene	4.08E-05	lb/MMBtu									2.87E-04
															Anthracene	1.23E-06	lb/MMBtu									8.66E-06
															Fluoranthene	4.03E-06	lb/MMBtu									2.84E-05
															Pyrene	3.71E-06	lb/MMBtu									2.61E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									4.38E-06
															Chrysene	1.53E-06	lb/MMBtu									1.08E-05
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									7.81E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.53E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									1.81E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									2.91E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.44E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									3.91E-06
FB05	Administration Building Emergency Generator (AEG)	ICDE3	2-02-001-02	NF	1	hours	3.50	6.00	0.0066	0.40	0	694	0.03	0.006	--	--	g/kW-hr	5.79	9.92	0.01	0.66	0	1,147.96	0.05	0.009	--
					750	kW									Benzene	7.76E-04	lb/MMBtu									5.46E-03
															Toluene	2.81E-04	lb/MMBtu									1.98E-03
															Xylenes	1.93E-04	lb/MMBtu									1.36E-03
															Formaldehyde	7.89E-05	lb/MMBtu									5.55E-04
															Acetaldehyde	2.52E-05	lb/MMBtu									1.77E-04
															Acrolein	7.88E-06	lb/MMBtu									5.55E-05
															Naphthalene	1.30E-04	lb/MMBtu									9.15E-04
															Acenaphthylene	9.23E-06	lb/MMBtu									6.50E-05
															Acenaphthene	4.68E-06	lb/MMBtu									3.29E-05
															Fluorene	1.28E-05	lb/MMBtu									9.01E-05
															Phenanthrene	4.08E-05	lb/MMBtu									2.87E-04
															Anthracene	1.23E-06	lb/MMBtu									8.66E-06
															Fluoranthene	4.03E-06	lb/MMBtu									2.84E-05
															Pyrene	3.71E-06	lb/MMBtu									2.61E-05
															Benz(a)anthracene	6.22E-07	lb/MMBtu									4.38E-06
															Chrysene	1.53E-06	lb/MMBtu									1.08E-05
															Benzo(b)fluoranthene	1.11E-06	lb/MMBtu									7.81E-06
															Benzo(k)fluoranthene	2.18E-07	lb/MMBtu									1.53E-06
															Benzo(a)pyrene	2.57E-07	lb/MMBtu									1.81E-06
															Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu									2.91E-06
															Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu									2.44E-06
															Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu									3.91E-06
FB06	Electrowinning Building Emergency Generator (EWEG)	ICDE1	2-02-001-02	NF	1	hours	5.00	4.43	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	0.55	0.49	0.0007	0.03	0	76.53	0.003	0.0006	--
					50	kW									Benzene	9.33E-04	lb/MMBtu									4.38E-04
															Toluene	4.09E-04	lb/MMBtu									1.92E-04
															Xylenes	2.85E-04	lb/MMBtu									1.34E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.84E-05

Table H.85 Hourly Gaseous Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 20	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 20								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Formaldehyde	1.18E-03	lb/MMBtu									5.54E-04
															Acetaldehyde	7.67E-04	lb/MMBtu									3.60E-04
															Acrolein	9.25E-05	lb/MMBtu									4.34E-05
															Naphthalene	8.48E-05	lb/MMBtu									3.98E-05
															Acenaphthylene	5.06E-06	lb/MMBtu									2.37E-06
															Acenaphthene	1.42E-06	lb/MMBtu									6.66E-07
															Fluorene	2.92E-05	lb/MMBtu									1.37E-05
															Phenanthrene	2.94E-05	lb/MMBtu									1.38E-05
															Anthracene	1.87E-06	lb/MMBtu									8.78E-07
															Fluoranthene	7.61E-06	lb/MMBtu									3.57E-06
															Pyrene	4.78E-06	lb/MMBtu									2.24E-06
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									7.89E-07
															Chrysene	3.53E-07	lb/MMBtu									1.66E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									4.65E-08
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									7.28E-08
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									8.82E-08
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.76E-07
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									2.74E-07
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									2.30E-07
FB07	Primary Crusher Fire Water Pump (PCFWP)	ICDE2	2-02-001-02	NF	1	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	2.30	2.46	0.004	0.18	0	456.55	0.02	0.004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									2.61E-03
															Toluene	4.09E-04	lb/MMBtu									1.15E-03
															Xylenes	2.85E-04	lb/MMBtu									7.98E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.09E-04
															Formaldehyde	1.18E-03	lb/MMBtu									3.30E-03
															Acetaldehyde	7.67E-04	lb/MMBtu									2.15E-03
															Acrolein	9.25E-05	lb/MMBtu									2.59E-04
															Naphthalene	8.48E-05	lb/MMBtu									2.37E-04
															Acenaphthylene	5.06E-06	lb/MMBtu									1.42E-05
															Acenaphthene	1.42E-06	lb/MMBtu									3.98E-06
															Fluorene	2.92E-05	lb/MMBtu									8.18E-05
															Phenanthrene	2.94E-05	lb/MMBtu									8.23E-05
															Anthracene	1.87E-06	lb/MMBtu									5.24E-06
															Fluoranthene	7.61E-06	lb/MMBtu									2.13E-05
															Pyrene	4.78E-06	lb/MMBtu									1.34E-05
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									4.70E-06
															Chrysene	3.53E-07	lb/MMBtu									9.88E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									2.77E-07
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									4.34E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									5.26E-07

Table H.85 Hourly Gaseous Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 20	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 20								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.05E-06
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.63E-06
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.37E-06
FB08	SX/EW Fire Water Pump (SXFWP)	ICDE2	2-02-001-02	NF	1	hours	3.50	3.73	0.0066	0.27	0	694	0.03	0.006	--	--	g/kW-hr	2.30	2.46	0.004	0.18	0	456.55	0.02	0.004	--
					400	hp									Benzene	9.33E-04	lb/MMBtu									2.61E-03
															Toluene	4.09E-04	lb/MMBtu									1.15E-03
															Xylenes	2.85E-04	lb/MMBtu									7.98E-04
															1,3-Butadiene	3.91E-05	lb/MMBtu									1.09E-04
															Formaldehyde	1.18E-03	lb/MMBtu									3.30E-03
															Acetaldehyde	7.67E-04	lb/MMBtu									2.15E-03
															Acrolein	9.25E-05	lb/MMBtu									2.59E-04
															Naphthalene	8.48E-05	lb/MMBtu									2.37E-04
															Acenaphthylene	5.06E-06	lb/MMBtu									1.42E-05
															Acenaphthene	1.42E-06	lb/MMBtu									3.98E-06
															Fluorene	2.92E-05	lb/MMBtu									8.18E-05
															Phenanthrene	2.94E-05	lb/MMBtu									8.23E-05
															Anthracene	1.87E-06	lb/MMBtu									5.24E-06
															Fluoranthene	7.61E-06	lb/MMBtu									2.13E-05
															Pyrene	4.78E-06	lb/MMBtu									1.34E-05
															Benzo(a)anthracene	1.68E-06	lb/MMBtu									4.70E-06
															Chrysene	3.53E-07	lb/MMBtu									9.88E-07
															Benzo(b)fluoranthene	9.91E-08	lb/MMBtu									2.77E-07
															Benzo(k)fluoranthene	1.55E-07	lb/MMBtu									4.34E-07
															Benzo(a)pyrene	1.88E-07	lb/MMBtu									5.26E-07
															Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu									1.05E-06
															Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu									1.63E-06
															Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu									1.37E-06
Tanks																										
T01	C7 Distribution Tank (T-C7D)	C7DT	4-03-010-19	NF	1	hours	0	0	0	1.08E-01	0	0	0	0	--	--	lb/hr	0	0	0	0.11	0	0	0	0	--
T02	MIBC Storage Tank (T-MIBCS)	MST	4-90-999-98	NF	1	hours	0	0	0	3.53E-03	0	0	0	0	--	--	lb/hr	0	0	0	0.004	0	0	0	0	--
T03	Diesel Fuel Storage Tank - Heavy Vehicles 1 (T-DFS-HV1)	DFSTHV	4-03-010-19	NF	1	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.01	0	0	0	0	5.71E-06
															Benzene	2.74E-05	lb/hr									2.74E-05
															Toluene	3.18E-04	lb/hr									3.18E-04
															Ethylbenzene	4.45E-05	lb/hr									4.45E-05
															m-Xylene	8.23E-04	lb/hr									8.23E-04
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									6.76E-04
T04	Diesel Fuel Storage Tank - Heavy Vehicles 2 (T-DFS-HV2)	DFSTHV	4-03-010-19	NF	1	hours	0	0	0	1.39E-02	0	0	0	0	n-Hexane	5.71E-06	lb/hr	0	0	0	0.01	0	0	0	0	5.71E-06
															Benzene	2.74E-05	lb/hr									2.74E-05
															Toluene	3.18E-04	lb/hr									3.18E-04
															Ethylbenzene	4.45E-05	lb/hr									4.45E-05

Table H.85 Hourly Gaseous Emissions - Year 20

Unit ID	Unit Description	Process Code	SCC	Non-Fug. (NF) / Fug. (F)	Hourly Production Rate - Year 20	Rate Units	Emission Factors										EF Units	Emissions (lb/hr) - Year 20								
							CO	NO_X	SO_2	VOC	H_2SO_4	CO_2	CH_4	N_2O	HAP Name	HAP EF		CO	NO_X	SO_2	VOC	H_2SO_4	CO_2 [a]	CH_4 [a]	N_2O [a]	HAP [b]
															m-Xylene	8.23E-04	lb/hr									8.23E-04
															1,2,4-Trimethylbenzene	6.76E-04	lb/hr									6.76E-04
Total Non-Fugitive Emissions (excluding tailpipe emissions):																		**32.38**	**52.57**	**0.07**	**3.61**	**0.004**	**7,363.56**	**0.30**	**0.06**	**0.08**
Total Fugitive Emissions (excluding tailpipe emissions):																		**3,484.00**	**884.00**	**104.00**	**0.86**	**0**	**29,455.36**	**1.19**	**0.24**	**0.76**
Total Emissions (excluding tailpipe emissions):																		**3,516.38**	**936.57**	**104.07**	**4.48**	**0.004**	**36,818.92**	**1.49**	**0.30**	**0.84**
Tailpipe Emissions (see Tables H.89-H.93):																		**223.77**	**289.78**	**1.00**	**20.32**	**--**	**45,464.16**	**--**	**--**	**--**

[a] CO_2e emissions are calculcated by summing the individual greenhouse gas emissions multiplied by their global warming potential (GWP). GWP of CO_2 = 1, GWP of CH_4 = 21, GWP of N_2O = 310.

[b] All HAP emissions are included in the facility-wide potential to emit, regardless of if they are fugitive or non-fugitive emissions.

Table H.86 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.15	g/hp-hr	7.01	0.08	23.14
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.03	g/hp-hr	0.33	0.004	1.10
Crawler Dozers, D11T Class	3	850	0.23	5	2,000	hours	0.575	0.03	g/hp-hr	0.02	0.0003	0.10
Crawler Dozers, D10T Class	3	580	0.46	11	4,000	hours	0.575	0.01	g/hp-hr	0.01	0.0001	0.04
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.003	0.00004	0.01
Rubber Tired Dozers, 834H Class	3	498	0.23	6	2,030	hours	0.575	0.01	g/hp-hr	0.004	0.00005	0.02
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Motor Graders, 16M Class	3	297	0.23	5	2,000	hours	0.575	0.01	g/hp-hr	0.003	0.00003	0.01
Water Trucks, 30,000 gallons	4	1,348	0.27	7	2,000	hours	0.35	0.03	g/hp-hr	0.03	0.0004	0.12
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.03	g/hp-hr	0.06	0.0008	0.28
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.003	0.00004	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.15	g/hp-hr	0.70	0.008	3.08
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.01	g/hp-hr	0.007	0.00009	0.03
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.0007	0.000009	0.003

Table H.86 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.007
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.04	0.0005	0.17
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.008	0.0001	0.04
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.2117	g/mile	0.004	0.00005	0.02
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.2117	g/mile	0.00005	0.0000006	0.0002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.001	0.00002	0.006
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.02	g/hp-hr	0.004	0.00005	0.02
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00003	0.01
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000008	0.003
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000009	0.003
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.002	0.00002	0.009
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.01	g/hp-hr	0.0006	0.000007	0.003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.004

Table H.86 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.005
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.002	0.00002	0.009
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.2117	g/mile	0.0002	0.000002	0.0007
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.008
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.0005	0.000006	0.002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.005	0.00006	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.01	g/hp-hr	0.002	0.00003	0.01
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.02	g/hp-hr	0.001	0.00002	0.006
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.07	0.0009	0.32
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.2117	g/mile	0.0004	0.000005	0.002
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.2117	g/mile	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.02	g/hp-hr	0.06	0.0007	0.25
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.01	g/hp-hr	0.004	0.00005	0.001
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.01	g/hp-hr	0.009	0.0001	0.002
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.2117	g/mile	0.01	0.0002	0.04
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.2117	g/mile	0.003	0.000004	0.0005
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.2117	g/mile	0.01	0.00003	0.01

Table H.86 PM/TSP Emissions from Fuel Burning Mobile Engines - Year 20

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	PM/TSP Emission Factors		PM/TSP Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.2117	g/mile	0.007	0.000005	0.001
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.001
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.2117	g/mile	0.003	0.000006	0.001
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.2117	g/mile	0.003	0.00001	0.003
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.2117	g/mile	0.003	0.000002	0.0003
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	0.0255	g/mile	0.002	0.00002	0.007
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	0.0255	g/mile	0.0002	0.000002	0.0007
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	0.0255	g/mile	0.0004	0.000005	0.002
Total Emissions from Haul Truck Engines:										**7.35**	**0.09**	**24.24**
Total Emissions from Other Mobile Engines:										**1.19**	**0.01**	**4.90**
Total Emissions from All Mobile Engines:										**8.53**	**0.10**	**29.14**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.87 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.15	g/hp-hr	7.01	0.08	23.14
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.03	g/hp-hr	0.33	0.004	1.10
Crawler Dozers, D11T Class	3	850	0.23	5	2,000	hours	0.575	0.03	g/hp-hr	0.02	0.0003	0.10
Crawler Dozers, D10T Class	3	580	0.46	11	4,000	hours	0.575	0.01	g/hp-hr	0.01	0.0001	0.04
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.003	0.00004	0.01
Rubber Tired Dozers, 834H Class	3	498	0.23	6	2,030	hours	0.575	0.01	g/hp-hr	0.004	0.00005	0.02
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Motor Graders, 16M Class	3	297	0.23	5	2,000	hours	0.575	0.01	g/hp-hr	0.003	0.00003	0.01
Water Trucks, 30,000 gallons	4	1,348	0.27	7	2,000	hours	0.35	0.03	g/hp-hr	0.03	0.0004	0.12
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.03	g/hp-hr	0.06	0.0008	0.28
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.003	0.00004	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.15	g/hp-hr	0.70	0.008	3.08
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.01	g/hp-hr	0.007	0.00009	0.03
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.0007	0.000009	0.003

Table H.87 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.007
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.04	0.0005	0.17
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.008	0.0001	0.04
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.2117	g/mile	0.004	0.00005	0.02
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.2117	g/mile	0.00005	0.0000006	0.0002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.001	0.00002	0.006
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.02	g/hp-hr	0.004	0.00005	0.02
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00003	0.01
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Copper Cathode Forklift	1	92.5	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000008	0.003
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000009	0.003
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.002	0.00002	0.009
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.01	g/hp-hr	0.0006	0.000007	0.003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.004

Table H.87 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.005
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.002	0.00002	0.009
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.2117	g/mile	0.0002	0.000002	0.0007
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.008
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.0005	0.000006	0.002
Truck Shop Bridge Crane, 25 tons	1	24.1	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.005	0.00006	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.40	0.01	g/hp-hr	0.002	0.00003	0.01
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.30	0.02	g/hp-hr	0.001	0.00002	0.006
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.07	0.0009	0.32
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.2117	g/mile	0.0004	0.000005	0.002
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.2117	g/mile	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.02	g/hp-hr	0.06	0.0007	0.25
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.01	g/hp-hr	0.004	0.00005	0.001
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.01	g/hp-hr	0.009	0.0001	0.002
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.2117	g/mile	0.01	0.0002	0.04
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.2117	g/mile	0.003	0.000004	0.0005
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.2117	g/mile	0.01	0.00003	0.01

Table H.87 PM_{10} Emissions from Fuel Burning Mobile Engines - Year 20

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	PM_{10} Emission Factor		PM_{10} Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.2117	g/mile	0.007	0.000005	0.001
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.001
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.2117	g/mile	0.003	0.000006	0.001
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.2117	g/mile	0.003	0.00001	0.003
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.2117	g/mile	0.003	0.000002	0.0003
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	0.0255	g/mile	0.002	0.00002	0.007
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	0.0255	g/mile	0.0002	0.000002	0.0007
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	0.0255	g/mile	0.0004	0.000005	0.002
Total Emissions from Haul Truck Engines:										**7.35**	**0.09**	**24.24**
Total Emissions from Other Mobile Engines:										**1.19**	**0.01**	**4.90**
Total Emissions from All Mobile Engies:										**8.53**	**0.10**	**29.14**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.88 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.15	g/hp-hr	7.01	0.08	23.14
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.03	g/hp-hr	0.33	0.004	1.10
Crawler Dozers, D11T Class	3	850	0.23	5	2,000	hours	0.575	0.03	g/hp-hr	0.02	0.0003	0.10
Crawler Dozers, D10T Class	3	580	0.46	11	4,000	hours	0.575	0.01	g/hp-hr	0.01	0.0001	0.04
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.003	0.00004	0.01
Rubber Tired Dozers, 834H Class	3	498	0.23	6	2,030	hours	0.575	0.01	g/hp-hr	0.004	0.00005	0.02
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Motor Graders, 16M Class	3	297	0.23	5	2,000	hours	0.575	0.01	g/hp-hr	0.003	0.00003	0.01
Water Trucks, 30,000 gallons	4	1,348	0.27	7	2,000	hours	0.35	0.03	g/hp-hr	0.03	0.0004	0.12
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.03	g/hp-hr	0.06	0.0008	0.28
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.003	0.00004	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.15	g/hp-hr	0.70	0.008	3.08
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.006	0.00008	0.03
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.01	g/hp-hr	0.005	0.00006	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.01	g/hp-hr	0.007	0.00009	0.03
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.0007	0.000009	0.003

Table H.88 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.007
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.04	0.0005	0.17
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.008	0.0001	0.04
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.2117	g/mile	0.004	0.00005	0.02
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.2117	g/mile	0.00005	0.0000006	0.0002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.001	0.00002	0.006
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.02	g/hp-hr	0.004	0.00005	0.02
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00003	0.01
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.0009	0.00001	0.004
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000008	0.003
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.01	g/hp-hr	0.0007	0.000009	0.003
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.01	g/hp-hr	0.002	0.00002	0.009
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.01	g/hp-hr	0.0006	0.000007	0.003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.01	g/hp-hr	0.002	0.00002	0.007
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.004

Table H.88 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.001	0.00001	0.005
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.02	g/hp-hr	0.002	0.00002	0.009
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.005	0.00006	0.02
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.2117	g/mile	0.0002	0.000002	0.0007
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.002	0.00002	0.008
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.01	g/hp-hr	0.0005	0.000006	0.002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.005	0.00006	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.01	g/hp-hr	0.002	0.00003	0.01
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.02	g/hp-hr	0.001	0.00002	0.006
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.03	g/hp-hr	0.07	0.0009	0.32
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.2117	g/mile	0.0004	0.000005	0.002
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.2117	g/mile	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.02	g/hp-hr	0.06	0.0007	0.25
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.01	g/hp-hr	0.004	0.00005	0.001
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.01	g/hp-hr	0.009	0.0001	0.002
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.2117	g/mile	0.01	0.0002	0.04
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.2117	g/mile	0.003	0.000004	0.0005
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.2117	g/mile	0.01	0.00003	0.01

Table H.88 $PM_{2.5}$ Emissions from Fuel Burning Mobile Engines - Year 20

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	$PM_{2.5}$ Emission Factor		$PM_{2.5}$ Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.2117	g/mile	0.007	0.000005	0.001
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.004
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.2117	g/mile	0.007	0.00001	0.001
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.2117	g/mile	0.003	0.000006	0.001
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.2117	g/mile	0.003	0.00001	0.003
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.2117	g/mile	0.003	0.000002	0.0003
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	0.0255	g/mile	0.002	0.00002	0.007
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	0.0255	g/mile	0.0002	0.000002	0.0007
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	0.0255	g/mile	0.0004	0.000005	0.002
Total Emissions from Haul Truck Engines:										**7.35**	**0.09**	**24.24**
Total Emissions from Other Mobile Engines:										**1.19**	**0.01**	**4.90**
Total Emissions from All Mobile Engines:										**8.53**	**0.10**	**29.14**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.89 CO Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	CO Emission Factor		CO Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	2.60	g/hp-hr	121.52	1.46	401.01
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	2.60	g/hp-hr	29.16	0.35	96.24
Crawler Dozers, D11T Class	3	850	0.23	5	2,000	hours	0.575	2.60	g/hp-hr	1.92	0.02	8.40
Crawler Dozers, D10T Class	3	580	0.46	11	4,000	hours	0.575	2.60	g/hp-hr	2.62	0.03	11.47
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	2.60	g/hp-hr	0.77	0.009	3.36
Rubber Tired Dozers, 834H Class	3	498	0.23	6	2,030	hours	0.575	2.60	g/hp-hr	1.14	0.01	5.00
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	2.60	g/hp-hr	1.20	0.01	5.27
Motor Graders, 16M Class	3	297	0.23	5	2,000	hours	0.575	2.60	g/hp-hr	0.67	0.008	2.94
Water Trucks, 30,000 gallons	4	1,348	0.27	7	2,000	hours	0.35	2.60	g/hp-hr	2.96	0.04	10.82
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	5.55	0.07	24.29
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.79	0.009	3.44
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	2.60	g/hp-hr	12.17	0.15	53.33
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.66	0.02	7.29
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.66	0.02	7.29
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.29	0.02	5.67
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	2.60	g/hp-hr	1.30	0.02	5.67
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	2.60	g/hp-hr	1.85	0.02	8.11
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	3.70	g/hp-hr	0.27	0.003	1.16

Table H.89 CO Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	CO Emission Factor		CO Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.43	0.005	1.86
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	3.42	0.04	15.00
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	2.60	g/hp-hr	2.12	0.03	9.27
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	1.870	g/mile	0.04	0.0004	0.15
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	1.870	g/mile	0.0005	0.000006	0.002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.32	0.004	1.42
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.50	0.006	2.18
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	4.10	g/hp-hr	0.82	0.01	3.58
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.59	0.007	2.59
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.58	0.007	2.53
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.33	0.004	1.46
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.33	0.004	1.46
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	2.60	g/hp-hr	0.18	0.002	0.79
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	2.60	g/hp-hr	0.19	0.002	0.83
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	2.60	g/hp-hr	0.53	0.006	2.30
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	3.70	g/hp-hr	0.23	0.003	1.00
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.59	0.007	2.59
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.18	0.002	0.79

Table H.89 CO Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	CO Emission Factor		CO Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.23	0.003	1.00
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	3.70	g/hp-hr	0.36	0.004	1.58
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	1.29	0.02	5.67
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	1.870	g/mile	0.001	0.00002	0.006
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	0.49	0.006	2.16
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	3.70	g/hp-hr	0.20	0.002	0.86
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	4.90	g/hp-hr	0.08	0.001	0.37
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	3.70	g/hp-hr	0.85	0.01	3.71
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	3.70	g/hp-hr	0.27	0.003	1.17
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	6.39	0.08	28.00
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	1.870	g/mile	0.004	0.00004	0.02
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	1.870	g/mile	0.02	0.0003	0.10
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	2.60	g/hp-hr	7.45	0.09	32.61
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	2.60	g/hp-hr	1.15	0.01	0.29
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	3.70	g/hp-hr	3.26	0.04	0.82
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	1.870	g/mile	0.12	0.002	0.35
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	1.870	g/mile	0.03	0.00003	0.004
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	1.870	g/mile	0.09	0.0003	0.11

Table H.89 CO Emissions from Fuel Burning Mobile Engines - Year 20

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	CO Emission Factor		CO Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 3 Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	1.870	g/mile	0.06	0.0001	0.04
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	1.870	g/mile	0.06	0.00005	0.01
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	1.870	g/mile	0.06	0.0001	0.04
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	1.870	g/mile	0.06	0.00009	0.01
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	1.870	g/mile	0.03	0.00005	0.01
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	1.870	g/mile	0.03	0.0001	0.03
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	1.870	g/mile	0.03	0.00002	0.002
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	15.51	g/mile	0.94	0.01	4.10
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	15.51	g/mile	0.09	0.001	0.41
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	15.51	g/mile	0.23	0.003	1.03
Total Emissions from Haul Truck Engines:										**150.68**	**1.81**	**497.25**
Total Emissions from Other Mobile Engines:										**73.09**	**0.87**	**297.81**
Total Emissions from All Mobile Engines:										**223.77**	**2.68**	**795.06**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.90 NO_x Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	4.50	g/hp-hr	210.32	2.52	694.06
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	2.61	g/hp-hr	29.28	0.35	96.61
Crawler Dozers, D11T Class	3	850	0.23	5	2,000	hours	0.575	2.60	g/hp-hr	1.92	0.02	8.40
Crawler Dozers, D10T Class	3	580	0.46	11	4,000	hours	0.575	0.30	g/hp-hr	0.30	0.004	1.32
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.30	g/hp-hr	0.09	0.001	0.39
Rubber Tired Dozers, 834H Class	3	498	0.23	6	2,030	hours	0.575	0.30	g/hp-hr	0.13	0.002	0.58
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.30	g/hp-hr	0.14	0.002	0.61
Motor Graders, 16M Class	3	297	0.23	5	2,000	hours	0.575	0.30	g/hp-hr	0.08	0.0009	0.34
Water Trucks, 30,000 gallons	4	1,348	0.27	7	2,000	hours	0.35	2.60	g/hp-hr	2.96	0.04	10.82
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	2.60	g/hp-hr	5.55	0.07	24.29
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.09	0.001	0.40
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	4.50	g/hp-hr	21.07	0.25	92.29
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.19	0.002	0.84
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.19	0.002	0.84
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.15	0.002	0.65
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.30	g/hp-hr	0.15	0.002	0.65
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.30	g/hp-hr	0.21	0.003	0.94
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.30	g/hp-hr	0.02	0.0003	0.09

Table H.90 NO_x Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.05	0.0006	0.21
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	3.42	0.04	15.00
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.30	g/hp-hr	0.24	0.003	1.07
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	7.394	g/mile	0.14	0.002	0.61
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	7.394	g/mile	0.002	0.00002	0.008
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.03	0.0003	0.12
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.04	0.0005	0.18
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	3.30	g/hp-hr	0.66	0.008	2.88
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.07	0.0008	0.30
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.05	0.0006	0.21
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.03	0.0003	0.12
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.03	0.0003	0.12
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.30	g/hp-hr	0.02	0.0003	0.09
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.30	g/hp-hr	0.02	0.0003	0.10
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.30	g/hp-hr	0.06	0.0007	0.27
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.30	g/hp-hr	0.02	0.0002	0.08
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.30	g/hp-hr	0.05	0.0006	0.21
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	3.30	g/hp-hr	0.16	0.002	0.71

Table H.90 NO_x Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	3.30	g/hp-hr	0.20	0.002	0.89
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	3.30	g/hp-hr	0.32	0.004	1.41
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.15	0.002	0.65
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	7.394	g/mile	0.006	0.00007	0.02
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.06	0.0007	0.25
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.30	g/hp-hr	0.02	0.0002	0.07
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	5.00	g/hp-hr	0.09	0.001	0.38
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.30	g/hp-hr	0.07	0.0008	0.30
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	3.30	g/hp-hr	0.24	0.003	1.05
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	2.60	g/hp-hr	6.39	0.08	28.00
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	7.394	g/mile	0.01	0.0002	0.06
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	7.394	g/mile	0.09	0.001	0.39
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.50	g/hp-hr	1.43	0.02	6.27
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.30	g/hp-hr	0.13	0.002	0.03
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.30	g/hp-hr	0.26	0.003	0.07
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	7.394	g/mile	0.48	0.008	1.38
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	7.394	g/mile	0.12	0.0001	0.02
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	7.394	g/mile	0.36	0.001	0.42

Table H.90 NO_x Emissions from Fuel Burning Mobile Engines - Year 20

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	NO_x Emission Factor		NO_x Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	7.394	g/mile	0.24	0.0004	0.16
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	7.394	g/mile	0.24	0.0002	0.05
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	7.394	g/mile	0.24	0.0004	0.14
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	7.394	g/mile	0.24	0.0003	0.04
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	7.394	g/mile	0.12	0.0002	0.05
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	7.394	g/mile	0.12	0.0004	0.10
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	7.394	g/mile	0.12	0.00006	0.009
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	1.145	g/mile	0.07	0.0008	0.30
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	1.145	g/mile	0.007	0.00008	0.03
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	1.145	g/mile	0.02	0.0002	0.08
Total Emissions from Haul Truck Engines:										**239.60**	**2.88**	**790.67**
Total Emissions from Other Mobile Engines:										**50.18**	**0.59**	**208.34**
Total Emissions from All Mobile Engines:										**289.78**	**3.46**	**999.01**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.91 SO_2 Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 20		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 20	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.002	g/hp-hr	0.24	0.003	0.78
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.002	g/hp-hr	0.06	0.0007	0.19
Crawler Dozers, D11T Class	3	850	0.23	5	2,000	hours	0.575	0.005	g/hp-hr	0.007	0.00008	0.03
Crawler Dozers, D10T Class	3	580	0.46	11	4,000	hours	0.575	0.003	g/hp-hr	0.005	0.00006	0.02
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.002	g/hp-hr	0.0008	0.00001	0.004
Rubber Tired Dozers, 834H Class	3	498	0.23	6	2,030	hours	0.575	0.005	g/hp-hr	0.004	0.00005	0.02
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.002	g/hp-hr	0.001	0.00002	0.006
Motor Graders, 16M Class	3	297	0.23	5	2,000	hours	0.575	0.005	g/hp-hr	0.002	0.00003	0.01
Water Trucks, 30,000 gallons	4	1,348	0.27	7	2,000	hours	0.35	0.005	g/hp-hr	0.02	0.0002	0.06
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.008	0.0001	0.04
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.001	0.00001	0.005
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.001	g/hp-hr	0.01	0.0001	0.05
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00003	0.01
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00003	0.01
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00002	0.008
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.002	g/hp-hr	0.001	0.00002	0.006
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.001	g/hp-hr	0.003	0.00003	0.01
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.002	g/hp-hr	0.0003	0.000004	0.001

Table H.91 SO_2 Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 20		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 20	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0006	0.000007	0.003
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.004	0.00004	0.02
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.002	g/hp-hr	0.004	0.00005	0.02
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.005	0.00006	0.02
Tire Handler	1	90	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0002	0.000003	0.001
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000003	0.001
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0004	0.000004	0.002
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.003	g/hp-hr	0.001	0.00002	0.006
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0009	0.00001	0.004
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0004	0.000005	0.002
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000003	0.001
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000003	0.001
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.002	g/hp-hr	0.0005	0.000006	0.002
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.002	g/hp-hr	0.0006	0.000007	0.002
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.002	g/hp-hr	0.0009	0.00001	0.004
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.002	g/hp-hr	0.0004	0.000005	0.002
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0004	0.000005	0.002
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0001	0.000002	0.0006

Table H.91 SO_2 Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 20		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 20	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0002	0.000002	0.0007
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.0003	0.000003	0.001
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.002	0.00002	0.008
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0007	0.000008	0.003
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0007	0.000009	0.003
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.0002	0.000002	0.0009
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.00006	0.0000008	0.0003
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.40	0.002	g/hp-hr	0.0009	0.00001	0.004
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.002	g/hp-hr	0.0004	0.000005	0.002
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.002	g/hp-hr	0.007	0.00008	0.03
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.001	0.00001	0.005
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.43	0.002	g/hp-hr	0.003	0.00003	0.01
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.001	g/hp-hr	0.009	0.0001	0.04
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.021	g/hp-hr	0.009	0.0001	0.002
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.021	g/hp-hr	0.02	0.0002	0.005
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.43	0.002	g/hp-hr	0.002	0.00001	0.005
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.43	0.124	g/hp-hr	0.12	0.00006	0.005
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.43	0.005	g/hp-hr	0.005	0.00001	0.005

Table H.91 SO_2 Emissions from Fuel Burning Mobile Engines - Year 20

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	SO_2 Emission Factor		SO_2 Emissions - Year 20		
			Hourly	Daily	Annual			100% Sulfur Conversion - Year 20	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.43	0.014	g/hp-hr	0.01	0.00001	0.005
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.43	0.045	g/hp-hr	0.05	0.00002	0.005
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.43	0.016	g/hp-hr	0.02	0.00002	0.006
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.43	0.053	g/hp-hr	0.05	0.00003	0.005
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.43	0.042	g/hp-hr	0.04	0.00002	0.005
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.43	0.021	g/hp-hr	0.02	0.00001	0.005
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.43	0.240	g/hp-hr	0.24	0.0001	0.005
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	0.54	0.017	g/hp-hr	0.003	0.00004	0.01
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	0.54	0.0025	g/hp-hr	0.0005	0.000006	0.002
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	0.54	0.017	g/hp-hr	0.002	0.00003	0.01
Total Emissions from Haul Truck Engines:										**0.29**	**0.004**	**0.96**
Total Emissions from Other Mobile Engines:										**0.71**	**0.002**	**0.57**
Total Emissions from All Mobile Engines:										**1.00**	**0.006**	**1.54**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.92 VOC Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.30	g/hp-hr	14.02	0.17	46.27
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.14	g/hp-hr	1.59	0.02	5.24
Crawler Dozers, D11T Class	3	850	0.23	5	2,000	hours	0.575	0.14	g/hp-hr	0.10	0.001	0.45
Crawler Dozers, D10T Class	3	580	0.46	11	4,000	hours	0.575	0.14	g/hp-hr	0.14	0.002	0.62
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.14	g/hp-hr	0.04	0.0005	0.18
Rubber Tired Dozers, 834H Class	3	498	0.23	6	2,030	hours	0.575	0.14	g/hp-hr	0.06	0.0007	0.27
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.14	g/hp-hr	0.06	0.0008	0.28
Motor Graders, 16M Class	3	297	0.23	5	2,000	hours	0.575	0.14	g/hp-hr	0.04	0.0004	0.16
Water Trucks, 30,000 gallons	4	1,348	0.27	7	2,000	hours	0.35	0.14	g/hp-hr	0.16	0.002	0.58
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.30	0.004	1.31
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.04	0.0005	0.19
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.30	g/hp-hr	1.40	0.02	6.15
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.09	0.001	0.39
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.09	0.001	0.39
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.07	0.0008	0.31
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.14	g/hp-hr	0.07	0.0008	0.31
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.14	g/hp-hr	0.10	0.001	0.44
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.14	g/hp-hr	0.01	0.0001	0.04

Table H.92 VOC Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.02	0.0003	0.10
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.18	0.002	0.81
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.14	g/hp-hr	0.11	0.001	0.50
Mechanic Field Service Trucks	5	370	1.71	41	15,000	VMT	0.43	0.403	g/mile	0.008	0.00009	0.03
Tire Handler	1	90	0.11	3	1,000	VMT	0.43	0.403	g/mile	0.0001	0.000001	0.0004
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.01	0.0001	0.05
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.02	0.0002	0.08
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.20	g/hp-hr	0.04	0.0005	0.17
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.03	0.0004	0.14
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.02	0.0003	0.10
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.01	0.0002	0.06
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.01	0.0002	0.06
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.14	g/hp-hr	0.01	0.0001	0.04
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.14	g/hp-hr	0.01	0.0001	0.04
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.14	g/hp-hr	0.03	0.0003	0.12
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.14	g/hp-hr	0.009	0.0001	0.04
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.02	0.0003	0.10
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.20	g/hp-hr	0.01	0.0001	0.04

Table H.92 VOC Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.20	g/hp-hr	0.01	0.0001	0.05
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.20	g/hp-hr	0.02	0.0002	0.09
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.07	0.0008	0.31
Dump Truck, 10 tons	1	250	0.34	8	3,000	VMT	0.43	0.403	g/mile	0.0003	0.000004	0.001
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.03	0.0003	0.12
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.14	g/hp-hr	0.007	0.00009	0.03
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.60	g/hp-hr	0.01	0.0001	0.05
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	0.14	g/hp-hr	0.03	0.0004	0.14
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.20	g/hp-hr	0.01	0.0002	0.06
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.14	g/hp-hr	0.34	0.004	1.51
Off-Road Tire Handling Truck	1	450	0.86	21	7,500	VMT	0.43	0.403	g/mile	0.0008	0.000009	0.003
Contractor Haul Trucks, 25 tons	2	511	2.74	66	24,000	VMT	0.43	0.403	g/mile	0.005	0.00006	0.02
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.14	g/hp-hr	0.40	0.005	1.76
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.14	g/hp-hr	0.06	0.0007	0.02
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.14	g/hp-hr	0.12	0.001	0.03
Copper Concentrate Shipment Vehicles	--	450	29.60	1,021	169,872	VMT	0.43	0.403	g/mile	0.03	0.0005	0.08
Molybdenum Concentrate Shipment Vehicles	--	450	7.40	15	2,145	VMT	0.43	0.403	g/mile	0.007	0.000007	0.001
Sulfuric Acid Delivery Vehicles	--	450	22.20	143	52,021	VMT	0.43	0.403	g/mile	0.02	0.00006	0.02

Table H.92 VOC Emissions from Fuel Burning Mobile Engines - Year 20

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	VOC Emission Factor		VOC Emissions - Year 20		
			Hourly	Daily	Annual			Tier 2/Tier 4 (Final) Emission Standards or Mobile 6 Output	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	14.80	52	19,072	VMT	0.43	0.403	g/mile	0.01	0.00002	0.008
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	14.80	23	5,858	VMT	0.43	0.403	g/mile	0.01	0.00001	0.003
Diesel Fuel Delivery Vehicles	--	500	14.80	47	17,136	VMT	0.43	0.403	g/mile	0.01	0.00002	0.008
Copper Cathode Shipment Vehicles	--	450	14.80	42	4,997	VMT	0.43	0.403	g/mile	0.01	0.00002	0.002
Ammonium Nitrate Delivery Vehicles	--	450	7.40	25	6,384	VMT	0.43	0.403	g/mile	0.007	0.00001	0.003
Miscellaneous Consumables Delivery Vehicles	--	450	7.40	48	12,486	VMT	0.43	0.403	g/mile	0.007	0.00002	0.006
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	7.40	7	1,110	VMT	0.43	0.403	g/mile	0.007	0.000003	0.0005
Pickup Trucks (gasoline)	20	350	1.37	33	12,000	VMT	0.54	1.329	g/mile	0.08	0.001	0.35
Crew Van (gasoline)	3	350	0.91	22	8,000	VMT	0.54	1.329	g/mile	0.008	0.0001	0.04
Lot Pick-Up Trucks (gasoline)	20	250	0.34	8	3,000	VMT	0.54	1.329	g/mile	0.02	0.0002	0.09
Total Emissions from Haul Truck Engines:										**15.61**	**0.19**	**51.52**
Total Emissions from Other Mobile Engines:										**4.71**	**0.06**	**19.34**
Total Emissions from All Mobile Engines:										**20.32**	**0.24**	**70.85**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.93 CO_2 Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 20		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	497	g/hp-hr	23,241.93	278.90	76,698.38
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	497	g/hp-hr	5,578.06	66.94	18,407.61
Crawler Dozers, D11T Class	3	850	0.23	5	2,000	hours	0.575	497	g/hp-hr	367.00	4.40	1,607.48
Crawler Dozers, D10T Class	3	580	0.46	11	4,000	hours	0.575	497	g/hp-hr	500.85	6.01	2,193.73
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	497	g/hp-hr	146.56	1.76	641.95
Rubber Tired Dozers, 834H Class	3	498	0.23	6	2,030	hours	0.575	497	g/hp-hr	218.25	2.62	955.92
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	497	g/hp-hr	230.13	2.76	1,007.98
Motor Graders, 16M Class	3	297	0.23	5	2,000	hours	0.575	497	g/hp-hr	128.24	1.54	561.67
Water Trucks, 30,000 gallons	4	1,348	0.27	7	2,000	hours	0.35	497	g/hp-hr	566.84	6.80	2,068.97
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	497	g/hp-hr	1,060.69	12.73	4,645.81
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	497	g/hp-hr	150.26	1.80	658.16
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	497	g/hp-hr	2,328.58	27.94	10,199.17
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	497	g/hp-hr	318.21	3.82	1,393.74
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	497	g/hp-hr	318.21	3.82	1,393.74
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	497	g/hp-hr	247.49	2.97	1,084.02
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	497	g/hp-hr	247.74	2.97	1,085.10
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	497	g/hp-hr	354.32	4.25	1,551.92
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	497	g/hp-hr	35.69	0.43	156.30

Table H.93 CO_2 Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 20		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	497	g/hp-hr	81.32	0.98	356.18
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	497	g/hp-hr	654.91	7.86	2,868.52
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	497	g/hp-hr	404.62	4.86	1,772.25
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.43	497	g/hp-hr	654.09	7.85	2,864.92
Tire Handler	1	90	0.75	18	6,570	hours	0.43	497	g/hp-hr	31.82	0.38	139.37
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	497	g/hp-hr	43.66	0.52	191.23
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	497	g/hp-hr	66.95	0.80	293.23
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	497	g/hp-hr	99.00	1.19	433.61
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	497	g/hp-hr	113.14	1.36	495.55
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	497	g/hp-hr	77.62	0.93	339.97
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	497	g/hp-hr	44.87	0.54	196.55
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	497	g/hp-hr	44.87	0.54	196.55
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	497	g/hp-hr	34.53	0.41	151.26
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	497	g/hp-hr	36.26	0.44	158.82
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	497	g/hp-hr	100.44	1.21	439.91
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	497	g/hp-hr	30.63	0.37	134.15
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	497	g/hp-hr	79.56	0.95	348.47
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	497	g/hp-hr	24.26	0.29	106.24

Table H.93 CO_2 Emissions from Fuel Burning Mobile Engines - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 20		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	497	g/hp-hr	30.56	0.37	133.86
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	497	g/hp-hr	48.51	0.58	212.48
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	497	g/hp-hr	247.49	2.97	1,084.02
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.43	497	g/hp-hr	88.39	1.06	387.15
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	497	g/hp-hr	94.40	1.13	413.48
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	497	g/hp-hr	26.52	0.32	116.15
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	497	g/hp-hr	8.52	0.10	37.32
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.4	497	g/hp-hr	113.80	1.37	498.43
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	497	g/hp-hr	36.01	0.43	157.74
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	497	g/hp-hr	1,222.50	14.67	5,354.57
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.43	497	g/hp-hr	159.10	1.91	696.87
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.43	497	g/hp-hr	361.34	4.34	1,582.67
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	497	g/hp-hr	1,424.15	17.09	6,237.78
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	497	g/hp-hr	219.26	2.63	54.82
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	497	g/hp-hr	438.53	5.26	109.63
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.43	497	g/hp-hr	212.14	1.97	720.72
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.43	497	g/hp-hr	212.14	0.11	9.10
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.43	497	g/hp-hr	212.14	0.60	220.71

Table H.93 CO_2 Emissions from Fuel Burning Mobile Engines - Year 20

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	CO_2 Emission Factor		CO_2 Emissions - Year 20		
			Hourly	Daily	Annual			99% Conversion (g/hp-hr)	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.43	497	g/hp-hr	212.14	0.22	80.92
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.43	497	g/hp-hr	212.14	0.11	24.86
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.43	497	g/hp-hr	235.71	0.22	80.78
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.43	497	g/hp-hr	212.14	0.11	21.20
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.43	497	g/hp-hr	212.14	0.11	27.09
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.43	497	g/hp-hr	212.14	0.15	52.98
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.43	497	g/hp-hr	212.14	0.11	4.71
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	0.54	1.08	lb/hp-hr	51.03	0.61	223.51
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	0.54	1.08	lb/hp-hr	51.03	0.61	223.51
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	0.54	1.08	lb/hp-hr	36.45	0.44	159.65
Total Emissions from Haul Truck Engines:										**28,820.00**	**345.84**	**95,105.99**
Total Emissions from Other Mobile Engines:										**16,644.16**	**177.69**	**61,619.17**
Total Emissions from All Mobile Engines:										**45,464.16**	**523.53**	**156,725.16**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.94 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 20		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 20	Units	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.32	0.00003	g/hp-hr	0.005	0.00006	0.02
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.32	0.00003	g/hp-hr	0.001	0.00001	0.004
Crawler Dozers, D11T Class	3	850	0.23	5	2,000	hours	0.575	0.0001	g/hp-hr	0.0001	0.000002	0.0006
Crawler Dozers, D10T Class	3	580	0.46	11	4,000	hours	0.575	0.00005	g/hp-hr	0.00009	0.000001	0.0004
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.575	0.00003	g/hp-hr	0.00002	0.0000002	0.00007
Rubber Tired Dozers, 834H Class	3	498	0.23	6	2,030	hours	0.575	0.0001	g/hp-hr	0.00008	0.000001	0.0004
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.575	0.00004	g/hp-hr	0.00003	0.0000003	0.0001
Motor Graders, 16M Class	3	297	0.23	5	2,000	hours	0.575	0.0001	g/hp-hr	0.00005	0.0000006	0.0002
Water Trucks, 30,000 gallons	4	1,348	0.27	7	2,000	hours	0.35	0.0001	g/hp-hr	0.0003	0.000004	0.001
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.0002	0.000002	0.0007
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00002	0.0000003	0.0001
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.59	0.00003	g/hp-hr	0.0002	0.000003	0.0009
Stemming Truck	2	450	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00005	0.0000006	0.0002
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00005	0.0000006	0.0002
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00004	0.0000005	0.0002
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.575	0.00003	g/hp-hr	0.00003	0.0000003	0.0001
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.35	0.00003	g/hp-hr	0.00005	0.0000007	0.0002
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.35	0.00003	g/hp-hr	0.000007	0.00000008	0.00003

Table H.94 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 20		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 20	Units	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00001	0.0000001	0.00005
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.00007	0.0000009	0.0003
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.35	0.00003	g/hp-hr	0.00008	0.0000009	0.0003
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.0001	0.000001	0.0004
Tire Handler	1	90	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000007	0.00000009	0.00003
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.43	0.00006	g/hp-hr	0.00003	0.0000003	0.0001
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00002	0.0000002	0.00008
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000009	0.0000001	0.00004
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.21	0.00003	g/hp-hr	0.00001	0.0000001	0.00005
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.21	0.00003	g/hp-hr	0.00001	0.0000001	0.00005
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.35	0.00003	g/hp-hr	0.00002	0.0000002	0.00008
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.25	0.00003	g/hp-hr	0.000008	0.0000001	0.00003
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000009	0.0000001	0.00004
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000003	0.00000003	0.00001

Table H.94 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 20												
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 20		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 20	Units	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000003	0.00000004	0.00001
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.000005	0.00000006	0.00002
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00004	0.0000005	0.0002
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00001	0.0000002	0.00006
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00001	0.0000002	0.00006
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.000004	0.00000005	0.00002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.000001	0.00000002	0.000006
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.40	0.00003	g/hp-hr	0.00002	0.0000002	0.00008
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.3	0.00003	g/hp-hr	0.000008	0.00000009	0.00003
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.59	0.00003	g/hp-hr	0.0001	0.000002	0.0006
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00002	0.0000003	0.0001
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.43	0.00003	g/hp-hr	0.00005	0.0000007	0.0002
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.43	0.00003	g/hp-hr	0.0002	0.000002	0.0008
Storm Water Pond Pump	1	200	1.00	24	500	hours	1	0.0004	g/hp-hr	0.0002	0.000002	0.00005
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	1	0.0004	g/hp-hr	0.0004	0.000005	0.00009
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.43	0.00003	g/hp-hr	0.00003	0.0000003	0.0001
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.43	0.002	g/hp-hr	0.002	0.000001	0.0001
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.43	0.0001	g/hp-hr	0.0001	0.0000003	0.0001

Table H.94 SO_4 Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 20

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Load Factor	SO_4 Emission Factor		SO_4 Emissions - Year 20		
			Hourly	Daily	Annual			2% Sulfur Conversion - Year 20	Units	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.43	0.0003	g/hp-hr	0.0003	0.0000003	0.0001
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.43	0.0009	g/hp-hr	0.0009	0.0000005	0.0001
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.43	0.0003	g/hp-hr	0.0003	0.0000003	0.0001
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.43	0.001	g/hp-hr	0.001	0.0000005	0.0001
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.43	0.0008	g/hp-hr	0.0008	0.0000004	0.0001
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.43	0.0004	g/hp-hr	0.0004	0.0000003	0.0001
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.43	0.005	g/hp-hr	0.005	0.000002	0.0001
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	0.54	--	--	--	--	--
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	0.54	--	--	--	--	--
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	0.54	--	--	--	--	--
Total Emissions from Haul Truck Engines:										**0.006**	**0.00007**	**0.02**
Total Emissions from Other Mobile Engines:										**0.01**	**0.00004**	**0.01**
Total Emissions from All Mobile Engines:										**0.02**	**0.0001**	**0.03**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.

Table H.95 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 20													
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 20			Soot Emissions - Year 20		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
Haulage Trucks, 250 tons (Tier 2)	25	2,650	1.00	24	6,600	hours	0.24	1.68	0.02	5.55	5.32	0.06	17.57
Haulage Trucks, 250 tons (Tier 4)	6	2,650	1.00	24	6,600	hours	0.24	0.08	0.001	0.26	0.25	0.003	0.84
Crawler Dozers, D11T Class	3	850	0.23	5	2,000	hours	0.24	0.005	0.00006	0.02	0.02	0.0002	0.07
Crawler Dozers, D10T Class	3	580	0.46	11	4,000	hours	0.24	0.002	0.00003	0.01	0.008	0.00009	0.03
Crawler Dozer, D8T Class	1	310	0.75	18	6,570	hours	0.24	0.0007	0.000008	0.003	0.002	0.00003	0.01
Rubber Tired Dozers, 834H Class	3	498	0.23	6	2,030	hours	0.24	0.001	0.00001	0.005	0.003	0.00004	0.01
Motor Graders, 24M Class	1	533	0.68	16	6,000	hours	0.24	0.001	0.00001	0.005	0.003	0.00004	0.02
Motor Graders, 16M Class	3	297	0.23	5	2,000	hours	0.24	0.0006	0.000007	0.003	0.002	0.00002	0.008
Water Trucks, 30,000 gallons	4	1,348	0.27	7	2,000	hours	0.24	0.008	0.0001	0.03	0.03	0.0003	0.09
Diesel Blasthole Drill, 12.25 inches	2	1,500	0.75	18	6,570	hours	0.24	0.02	0.0002	0.07	0.05	0.0006	0.21
Hydraulic DML 45 Drill	1	425	0.75	18	6,570	hours	0.24	0.0007	0.000009	0.003	0.002	0.00003	0.01
Front End Loaders	2	2,000	0.90	22	7,884	hours	0.24	0.17	0.002	0.74	0.53	0.006	2.34
Stemming Truck	2	450	0.75	18	6,570	hours	0.24	0.002	0.00002	0.007	0.005	0.00006	0.02
ANFO/Slurry Truck, 20 tons	2	450	0.75	18	6,570	hours	0.24	0.002	0.00002	0.007	0.005	0.00006	0.02
Powder Truck, 2 tons	2	350	0.75	18	6,570	hours	0.44	0.002	0.00003	0.01	0.003	0.00003	0.01
Front End Loaders, 8 yd3	2	262	0.75	18	6,570	hours	0.24	0.001	0.00001	0.005	0.004	0.00005	0.02
Hydraulic Excavator, 385 Cat CL	2	513	0.90	22	7,884	hours	0.24	0.002	0.00002	0.007	0.005	0.00006	0.02
Backhoe/Loader, 2 yd3	1	124	0.75	18	6,570	hours	0.44	0.0003	0.000004	0.001	0.0004	0.000005	0.002

Table H.95 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 20													
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 20			Soot Emissions - Year 20		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
All-Terrain Crane, 75 tons	1	230	0.75	18	6,570	hours	0.24	0.0004	0.000005	0.002	0.001	0.00001	0.005
Transporter with Tractor, 200 tons	1	1,350	0.75	18	6,570	hours	0.24	0.009	0.0001	0.04	0.03	0.0004	0.13
Fuel/Lube Trucks, 6,000 gallons	2	703	0.75	18	6,570	hours	0.24	0.002	0.00002	0.008	0.006	0.00007	0.03
Mechanic Field Service Trucks	5	370	0.75	18	6,570	hours	0.44	0.002	0.00002	0.008	0.002	0.00003	0.01
Tire Handler	1	90	0.75	18	6,570	hours	0.51	0.00002	0.0000003	0.0001	0.00002	0.0000003	0.0001
Shop Forklift, 12,000 lbs	1	90	0.75	18	6,570	hours	0.51	0.0004	0.000005	0.002	0.0004	0.000005	0.002
Integrated Tool Carrier, 140 hp	1	138	0.75	18	6,570	hours	0.44	0.0006	0.000007	0.003	0.0007	0.000009	0.003
Light Plant, 6 kW	15	35	0.40	10	3,504	hours	0.5	0.002	0.00002	0.009	0.002	0.00002	0.009
Primary Crushing Mobile Crane - 400 tons	1	320	0.75	18	6,570	hours	0.24	0.0005	0.000007	0.002	0.002	0.00002	0.008
Copper Concentrate Area Front End Loader - Cat 930	1	160	0.75	18	6,570	hours	0.44	0.0007	0.000008	0.003	0.0009	0.00001	0.004
Molybdenum Packaging Forklift, 7,000 lbs	1	93	0.75	18	6,570	hours	0.51	0.0005	0.000005	0.002	0.0004	0.000005	0.002
Copper Cathode Forklift	1	93	0.75	18	6,570	hours	0.44	0.0004	0.000005	0.002	0.0005	0.000006	0.002
Boom Trucks 10 tons, 45 foot boom	1	200	0.75	18	6,570	hours	0.44	0.0003	0.000004	0.001	0.0004	0.000005	0.002
Boom Trucks 15 tons, 60 foot boom	1	210	0.75	18	6,570	hours	0.44	0.0003	0.000004	0.001	0.0004	0.000005	0.002
Front End Loader, 6 yd3	1	349	0.75	18	6,570	hours	0.24	0.0005	0.000006	0.002	0.002	0.00002	0.007
Front End Loader, 5 yd3	1	149	0.75	18	6,570	hours	0.44	0.0003	0.000003	0.001	0.0003	0.000004	0.001
Bob Cats, 2,400 lbs	2	82	0.75	18	6,570	hours	0.5	0.0008	0.00001	0.003	0.0008	0.00001	0.003
Fork Lift, 2,000 lbs	1	50	0.75	18	6,570	hours	0.5	0.0005	0.000006	0.002	0.0005	0.000006	0.002

Table H.95 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 20													
Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 20			Soot Emissions - Year 20		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
Fork Lift, 5,000 lbs	1	63	0.75	18	6,570	hours	0.48	0.0006	0.000007	0.003	0.0006	0.000008	0.003
Fork Lift, 3,000 lbs	2	50	0.75	18	6,570	hours	0.5	0.001	0.00001	0.004	0.001	0.00001	0.004
Flat Bed Trucks, 10 tons	2	350	0.75	18	6,570	hours	0.44	0.002	0.00003	0.01	0.003	0.00003	0.01
Dump Truck, 10 tons	1	250	0.75	18	6,570	hours	0.24	0.00004	0.0000004	0.0002	0.0001	0.000001	0.0005
Mobile Hydraulic Crane, 60 tons	1	267	0.75	18	6,570	hours	0.24	0.0005	0.000005	0.002	0.001	0.00002	0.006
Truck Shop Bridge Crane, 60 tons	1	75	0.75	18	6,570	hours	0.24	0.0001	0.000002	0.0006	0.0004	0.000005	0.002
Truck Shop Bridge Crane, 25 tons	1	24	0.75	18	6,570	hours	0.24	0.001	0.00001	0.005	0.004	0.00005	0.02
CS683 Soil Compactor / Roller	2	173	0.75	18	6,570	hours	0.24	0.0005	0.000007	0.002	0.002	0.00002	0.008
246C Skid Steer Loader	2	73	0.75	18	6,570	hours	0.48	0.0007	0.000008	0.003	0.0007	0.000009	0.003
RH200/340 O & K Shovel / Hitachi EX5500	1	2,520	0.75	18	6,570	hours	0.24	0.02	0.0002	0.08	0.06	0.0007	0.25
Off-Road Tire Handling Truck	1	450	0.75	18	6,570	hours	0.24	0.00009	0.000001	0.0004	0.0003	0.000003	0.001
Contractor Haul Trucks, 25 tons	2	511	0.75	18	6,570	hours	0.24	0.0006	0.000007	0.003	0.002	0.00002	0.008
Motivator for Mine Shovels	1	3,308	0.91	22	8,000	hours	0.24	0.01	0.0002	0.06	0.04	0.0005	0.19
Storm Water Pond Pump	1	200	1.00	24	500	hours	0.5	0.002	0.00003	0.0005	0.002	0.00003	0.0005
Mine Pit Dewatering Pump	4	100	1.00	24	500	hours	0.5	0.004	0.00005	0.001	0.004	0.00005	0.001
Copper Concentrate Shipment Vehicles	--	450	1.00	19	6,795	hours	0.24	0.003	0.00006	0.009	0.01	0.0002	0.03
Molybdenum Concentrate Shipment Vehicles	--	450	1.00	1	86	hours	0.24	0.0002	0.0000006	0.00009	0.0008	0.000002	0.0003
Sulfuric Acid Delivery Vehicles	--	450	1.00	6	2,081	hours	0.24	0.002	0.000008	0.003	0.008	0.00003	0.009

Table H.95 Soot (Elemental Carbon) Emissions from Fuel Burning Mobile Engines (Diesel Engines Only) - Year 20

Fuel Burning Mobile Engine Description [a]	Fleet Size	HP Rating	Process Rates [b] - Year 20			Units	Organic Carbon Fraction	Organic Carbon Emissions - Year 20			Soot Emissions - Year 20		
			Hourly	Daily	Annual			lb/hr	tpd	tpy	lb/hr	tpd	tpy
Lime Delivery Vehicles	--	450	1.00	2	763	hours	0.24	0.002	0.000003	0.001	0.005	0.000009	0.003
SAG Mill and Ball Mill Grinding Balls Delivery Vehicles	--	450	1.00	1	234	hours	0.24	0.001	0.000001	0.0003	0.005	0.000004	0.001
Diesel Fuel Delivery Vehicles	--	500	1.00	2	685	hours	0.24	0.002	0.000003	0.0009	0.005	0.000008	0.003
Copper Cathode Shipment Vehicles	--	450	1.00	1	200	hours	0.24	0.001	0.000002	0.0003	0.004	0.000007	0.0008
Ammonium Nitrate Delivery Vehicles	--	450	1.00	1	255	hours	0.44	0.001	0.000002	0.0006	0.001	0.000003	0.0008
Miscellaneous Consumables Delivery Vehicles	--	450	1.00	1	499	hours	0.44	0.001	0.000005	0.001	0.002	0.000006	0.002
Miscellaneous Fuels and Lubricants Delivery Vehicles	--	450	1.00	1	44	hours	0.44	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Trucks (gasoline)	20	350	0.25	6	2,190	hours	--	--	--	--	--	--	--
Crew Van (gasoline)	3	350	0.25	6	2,190	hours	--	--	--	--	--	--	--
Lot Pick-Up Trucks (gasoline)	20	250	0.25	6	2,190	hours	--	--	--	--	--	--	--
Total Emissions from Haul Truck Engines:											**5.58**	**0.07**	**18.41**
Total Emissions from Other Mobile Engines:											**0.88**	**0.01**	**3.68**
Total Emissions from All Mobile Engines:											**6.46**	**0.08**	**22.08**

[a] Fuel burning mobile engines are diesel fuel fired unless otherwise noted.

[b] Except for the shipment and delivery vehicles, the process rates are for a single mobile engine. The process rates for the shipment and delivery vehicles are representative of the entire fleet.