

MISSION MINE 2011 EMISSION INVENTORY

MISSION MINE
POTENTIAL TO EMIT

PTE SUMMARY						
PM	PM10	PM2.5	CO	NOx	SO2	VOC
(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)
7,512.9	3,639.9	532.3	367.7	221.0	55.0	7.7
568.0	381.1	93.5	367.7	221.0	55.0	11.5

Facility-wide PTE for All Source (Process and Fugitive as provided in Title V TSD)

Facility-wide PTE Stack Emissions (as provided in Title V Permit Summary)

Number	Emissions Source/Activity	Uncontrolled Emissions															Control Eff. %	Controlled Emissions							Control Device
		(lbs/hr)							(tons/yr)							(lbs/hr)			(tons/yr)						
		PM	PM10	PM2.5	CO	NOx	SO2	VOC	PM	PM10	PM2.5	CO	NOx	SO2	VOC	PM	PM10	PM2.5	PM	PM10	PM2.5				
TOTAL		480	284	42	83.9	50.5	12.6	1.8	2,102	1,243	184	368	221	55.0	7.71	1,218	530	76	5,411	2,397	348				
Subtotal Fugitives		479.9	283.7	41.9	-	-	-	-	2,101.8	1,242.8	183.6	-	-	-	-	826.3	324.9	22.5	3,619.0	1,423.2	98.5				
Subtotal Process		0.0	0.0	0.0	83.9	50.5	12.6	1.8	0.2	0.2	0.2	367.7	221.0	55.0	11.5	391.9	205.1	53.7	1,791.7	973.6	250.0				
Mining Subtotal		344.1	260.6	33.2	83.5	49.9	12.6	0.9	1,463	1,142	146	365.6	218.5	55.0	7.7	826.3	324.9	22.5	3,619.0	1,423.2	98.5				
OFMA-1	Drilling															50%	1.69	0.88	0.04	7.39	3.84	0.22	Dust shield/water application		
OFMA-2	Blasting	9.64	5.01	0.39	76.48	19.41	2.28		42.20	21.95	1.27	325.0	85.0	10.0									None		
CFMA-1	Generator	0.01	0.01	0.01	0.08	0.34	0.12	0.01	0.04	0.04	0.04	0.34	1.50	0.51	0.04								None		
CFMA-2	Generator	0.35	0.35	0.35	2.76	12.05	4.06	0.35	1.54	1.54	1.54	12.10	52.80	17.80	1.54								None		
CFMA-3	Generator	0.53	0.53	0.53	4.14	18.08	6.10	0.53	2.31	2.31	2.31	18.15	79.20	26.70	2.31								None		
VFMA-1	Haulage															75%	615.32	175.75	17.54	2,695.09	759.77	76.82	Water Application on Roads		
VFMA-2	Dozing	57.45	12.63	6.03					261.63	55.31	26.42												None		
VFMA-3	Grading	12.76	4.37	0.40					55.90	19.13	1.73												None		
VFMA-4	Rubber Tire Rigs															75%	121.08	133.94	3.45	530.32	586.67	15.12	Water Application on Roads		
VFMA-5	Land Clearing	223.74	223.74	23.49					980.00	980.00	102.90												None		
VFMA-6	Misc. Vehicles															75%	88.18	14.36	1.44	386.24	62.90	6.29	Water Application on Roads		
HFMA-1	Overburden Unloading	29.61	14.01	2.12					129.71	61.35	9.29												None		
Mission Circuit									181.70	105.52	24.50					795.83	462.18	107.72							
SSOPM-1	SSOPM-1; Ducon 108 Scrubber; Primary Crusher																						Scrubber		
SSOPM-2a	SSOPM-2a; Wet Hydrostatic Precipitator; Transfer to Secondary																						Scrubber		
SSOPM-2b	SSOPM-2b; Wet Hydrostatic Precipitator; Transfer to Secondary																						Scrubber		
SSOPM-2c	SSOPM-2c; Beu-Math Size 60 Wet Scrubber																						Scrubber		
SSOPM-3	SSOPM-3; Wet Scrubber; Secondary and Tertiary Crushing																						Scrubber		
SSOPM-4	SSOPM-4; Wet Scrubber; Secondary and Tertiary Crushing																						Scrubber		
SSOPM-5	SSOPM-5; Wet Scrubber; Secondary and Tertiary Crushing																						Scrubber		
SSOPM-6	SSOPM-6; Wet Scrubber; Secondary and Tertiary Crushing																						Scrubber		
SSOPM-7	SSOPM-7; Wet Scrubber; Secondary and Tertiary Crushing																						Scrubber		
SSOPM-8	SSOPM-8; Wet Scrubber; Transfer Point Outside Crusher																						Scrubber		
SSOPM-9	SSOPM-9; Baghouse; Transfer to Fine Ore Bin																						Baghouse		
SSOPM-10	SSOPM-10; Baghouse; Transfer to Fine Ore Bin																						Baghouse		
SSOPM-11	SSOPM-11; Baghouse; Transfer to Fine Ore Bin																						Baghouse		
SSOPM-12	SSOPM-12; Baghouse; Transfer to Fine Ore Bin																						Baghouse		
SSOPM-13	SSOPM-13; Baghouse; Transfer to Fine Ore Bin																						Baghouse		
SSOPM-14	SSOPM-14; Wet Scrubber; Transfer to Rod Mill																						Scrubber		
SSOPM-15	SSOPM-15; Wet Scrubber; Transfer to Rod Mill																						Scrubber		
SSOPM-16	SSOPM-16; Wet Scrubber; Transfer to Rod Mill																						Scrubber		
SSOPM-17	SSOPM-17; Baghouse; Lime Conveyance															99%	0.29	0.29	0.08	1.25	1.25	0.35	Baghouse 328-E6		
SSOPM-18	Lime Transfer Feeder to Conveyor																						None		
SSOPM-19	American Air Filter Scrubber															95%	13.27	6.88	1.95	60.23	30.11	8.52	Scrubber		
HFOPM-1	Primary Crushing															75%	68.75	34.38	6.36	301.13	150.56	22.85	Enclosure/water spray		
HFOPM-2	Coarse Ore Storage															75%	68.75	34.38	6.36	301.13	150.56	43.61	Water spray/dust suppressant		
HFOPM-3	Transfer of Concentrate																						None		
HFOPM-4	Transfer of Concentrate																						None		
North Circuit																69.00	34.87	9.80	377.45	227.98	57.56				
SSOPN-1	SSOPN-1; Wet Ducon Scrubbers Primary and Secondary																						Scrubber		
SSOPN-2	SSOPN-2; Wet Ducon Scrubbers Primary and Secondary																						Scrubber		
SSOPN-3	SSOPN-3; Wet Ducon Scrubbers Primary and Secondary																						Scrubber		
SSOPN-4	Stack																						Scrubber		
SSOPN-5	SSOPN-5; Water Sprays; Transfer to Tertiary															99%	0.75	0.38	0.11	3.29	1.64	0.46	Dust collector		
SSOPN-6	SSOPN-6; Micropulver Baghouse; Transfer to Fine Ore Bin															70%	32.50	11.25	3.18	98.55	49.28	13.94	Water sprays		
SSOPN-7	SSOPN-7; Wet Ducon 84 Scrubber; Transfer to Ball Mills																						Baghouse		
HFOPN-1	Ore transfer near primary crusher															70%	22.50	11.25	3.18	98.55	49.28	13.94	Water spray		
HFOPN-2	Ore transfer to tertiary crushing															70%	22.50	11.25	3.18	98.55	49.28	13.94	Water spray		
n/a	Ammonium nitrate storage silo transfer operations	0.06	0.03	0.03																			None		
n/a	Rail-car Loading (VOC emissions only)							0.00							0.01								None		

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(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)
7,512.9	3,639.9	532.3	367.7	221.0	55.0	7.7
568.0	381.1	93.5	367.7	221.0	55.0	11.5

Facility-wide PTE for All Source (Process and Fugitive as provided in Title V TSD)
Facility-wide PTE Stack Emissions (as provided in Title V Permit Summary)

Number	Emissions Source/Activity	Uncontrolled Emissions												Control	Controlled Emissions					Control Device			
		(lbs/hr)							(tons/yr)					Eff.	(lbs/hr)			(tons/yr)					
		PM	PM10	PM2.5	CO	NOx	SO2	VOC	PM	PM10	PM2.5	CO	NOx	SO2	VOC	%	PM	PM10	PM2.5		PM	PM10	PM2.5
South Circuit Pre Expansion																							
SSOPS-1	SSOPS-1 Wet Ducon 96 Scrubber; Primary Crushing																						
SSOPS-2	SSOPS-2 Wet Ducon 42 Scrubber; Transfer to Stocker																						
SSOPS-3	SSOPS-3 Wet Ducon 72 Scrubber; Transfer to SAG Mill																						
SSOPS-4	SSOPS-4 Wet Ducon 66 Scrubber; Transfer to Secondary Crusher																						
SSOPS-2a	SAG Mill Belt Feeder Transfer Point																						
SSOPS-2b	Water Sprays; Transfer to Sag																						
SSOPS-5b	Transfer of Crushed Ore																						
SSOPS-5c	Transfer of Concentrate																						
SSOPS-6	SSOPS-6; Stack; Mikro-Pulsaire Baghouse; Transfer to Lime Bin																						
SSOPS-7	SSOPS-7; Baghouse; Lime Transfer																						
n/a	Batch drop - South Concentrate Storage Pile																						
n/a	Ammonium nitrate storage silo transfer operations																						
South Circuit Expansion																							
SSOPS-1	SSOPS-1 Wet Ducon 96 Scrubber; Primary Crushing																137.91	62.20	17.72	604.05	272.45	77.60	
SSOPS-2	SSOPS-2 Wet Ducon 42 Scrubber; Transfer to Stocker																0.54	0.54	0.10	2.37	2.37	0.44	
SSOPS-2A	SSOPS-2A; FARR Dust Collector; E. Side of Stockpile																0.41	0.41	0.12	1.80	1.80	0.51	
SSOPS-2B	SSOPS-2B; FARR Dust Collector; E. Side of Stockpile																0.33	0.33	0.09	1.46	1.46	0.41	
SSOPS-4	SSOPS-4; Scrubber; Transfer to Secondary Crusher																1.11	1.11	0.32	4.88	4.88	1.38	
SSOPS-4A	SSOPS-4A; Ducon 72 Scrubber; Transfer to SAG Mill																1.27	1.27	0.36	5.56	5.56	1.57	
SSOPS-6	SSOPS-6; FARR Dust Collector; Lime Loading																0.08	0.08	0.02	0.34	0.34	0.10	
PFOPS-0 (HFOPS-1)	Transfer Point of Crusher Ore																85.00%	25.68	12.84	3.63	112.50	56.25	15.92
PFOPS-1	Primary crusher																98.50%	10.70	1.07	0.20	46.88	4.69	0.87
PFOPS-2	Transfer to radial stacker																95.00%	8.56	4.28	1.21	37.50	18.75	5.31
HFOPS-2	Transfer Point of Crusher Ore																70.00%	51.37	25.68	7.27	225.00	112.50	31.84
PFOPS-3	Apron Feeders 30-130/131/132/133 to Conveyors 20-134/136																98.50%	2.57	1.28	0.36	11.25	5.63	1.59
PFOPS-4	Conveyor 20-134/136 to SAG Mills 20-201/202																98.50%	2.57	1.28	0.36	11.25	5.63	1.59
PFOPS-5	SAG Mills (2) Double Deck Screens (2) to Conveyors																98.50%						
PFOPS 6 and 7	SAG Reclam Belt																95.00%	0.80	0.32	0.09	3.50	1.40	0.40
PFOPS-8	Omicore Circuit																70.00%	3.00	1.20	0.34	13.14	5.26	1.49
PFOPS-11 (SSOPS-5)	Transfer from Omnicore Crushers																95.00%	10.00	1.00	0.19	43.80	4.38	0.81
PSOPS-12	Transfer from Omnicore Crushers (Bypass)																95.00%	2.40	1.20	0.34	10.51	5.26	1.49
PSOPS-13	Transfer from Omnicore crushers (Return)																95.00%	2.40	1.20	0.34	10.51	5.26	1.49
HFOPS-4	Conveyor to Concentrate Stacking																70.00%	0.26	0.10	0.03	1.13	0.45	0.13
HFOPS-5	Concentrate Loading																25.00%	0.64	0.26	0.07	2.81	1.13	0.32
HFOPS-3	Stacking																70.00%	3.00	1.20	0.34	13.14	5.26	1.49
PFOPS-9	Transfer from vibratory feeders 20-252/253/254 to Conveyor 20-251																37.00%	2.16	1.08	0.31	9.46	4.73	1.34
PFOPS-10	Transfer from 20-251 (L2) Conveyor to 20-255 (36") conveyor																90.00%	7.20	3.60	1.02	31.54	15.77	4.46
PFOPS-14	Concentrate Filter Press to Conveyor																100.00%						
PFOPS-16	Lime loading to Lime Bin (Pneumatic)																99.00%	0.01	0.01	0.01	0.06	0.06	0.06
PFOPS-17	Lime Bin to Feeder																97.50%	0.13	0.13	0.13	0.55	0.55	0.55
PFOPS-18	Belt Drop to Ball Mill																97.50%	0.13	0.13	0.13	0.55	0.55	0.55
PFOPS-19	Lime Ball Mill																95.00%	0.25	0.25	0.25	1.10	1.10	1.10
PFOPS-20	Concentrator: Ball mills, flotation, thickening, various conveyors																70.00%						

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Facility-wide PTE for All Source (Process and Fugitive as provided in Title V TSD)
Facility-wide PTE Stack Emissions (as provided in Title V Permit Summary)

Number	Emissions Source/Activity	Uncontrolled Emissions														Control Eff. %	Controlled Emissions						
		(lbs/hr)							(tons/yr)								(lbs/hr)			(tons/yr)			Control Device
		PM	PM10	PM2.5	CO	NOX	SO2	VOC	PM	PM10	PM2.5	CO	NOx	SO2	VOC		PM	PM10	PM2.5	PM	PM10	PM2.5	
Handling Fugitives																							
HFOPM-1	Mission Transfers																						
HFOPM-2	Mission Transfers																						
HFOPM-3	Mission Transfers																						
HFOPM-4	Mission Transfers																						
HFOPM-5	Mission Transfers																						
HFOPN-1	North Transfers																						
HFOPN-2	North Transfers																						
HFOPS-1	South Transfers																						
HFOPS-2	South Transfers																						
HFOPS-3	South Transfers																						
Deposition Activities																							
WFOPM-1	Mission Coarse Ore	145.76	23.10	8.69					638.42	101.18	38.05												
WFOPN-1	North Coarse Ore	0.01	0.01	0.01					0.04	0.04	0.04											None	
WFOPS-1	South Coarse Ore	0.02	0.02	0.02					0.10	0.10	0.10											None	
WFOPS-2	South Intermediate Storage	0.01	0.01	0.01					0.06	0.06	0.06											None	
WFOPM-2	Mission North Concentrate Storage	0.001	0.001	0.001					0.003	0.003	0.003											None	
WFOPS-3	South Concentrate Storage	0.001	0.001	0.001					0.006	0.006	0.006											None	
WFDA-1	Tailings Dams	110	6	6					481	26	26											Chemical application	
WFDA-2	Overburden Areas	36	17	3					157	74	11											None	
By-Products																							
SSMP-1	SSMP-1 Wet Ducon 21 Scrubber, Loading, Packaging	0.04	0.04	0.04	0.48	0.57	0.00	0.03	0.19	0.19	0.19	2.10	2.50	0.02	0.14	90%	3.28	2.50	1.63	14.37	10.94	7.13	Scrubber
CFMP-1	Dryer	0.02	0.02	0.02	0.24	0.29	0.00	0.02	0.10	0.10	0.10	1.05	1.25	0.01	0.07		1.97	1.20	0.34	8.63	5.26	1.49	Scrubber
CFMP-2	Dryer	0.02	0.02	0.02	0.24	0.29	0.00	0.02	0.10	0.10	0.10	1.05	1.25	0.01	0.07								None
n/a	Filter Press Drop to Dryer															90%	0.00	0.00	0.00	0.00	0.00	0.00	Scrubber
n/a	Dryer Drop to Product Packaging															90%	0.01	0.01	0.00	0.05	0.03	0.01	Scrubber
n/a	Product Packaging															90%	0.01	0.01	0.00	0.05	0.03	0.01	Scrubber
n/a	Moly Plant Wet Scrubber																1.39	1.39	1.39	5.63	5.63	5.63	Scrubber
Petroleum Storage Tanks																							
n/a	Gasoline storage tank (20,000 gallon)																						None
n/a	Diesel storage tank (250,000 gallon)																						None
n/a	Diesel storage tank (20,000 gallon)																						None
n/a	Diesel storage tank (20,000 gallon)																						None
n/a	Diesel storage tank (20,000 gallon)																						None