HAP Summary
2011 Emission Inventory
Mission Property

Number	Emissions Source/Activity	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
	TOTAL	5.80E-03	1.53E-02	5.83E-05	3.97E-03	3.02E-02	1.21E-02	3.02E-02	1.16E+00	6.45E-05	2.14E-03	1.16E-03
Mining	***Sub-total (Fugitive and Non-Fugitive)***	**1.24E-04**	**3.27E-04**	**1.24E-06**	**8.43E-05**	**6.45E-04**	**2.58E-04**	**6.45E-04**	**2.48E-02**	**1.24E-06**	**4.46E-05**	**2.48E-05**
OFMA-1	Drilling	1.85E-05	4.88E-05	1.85E-07	1.26E-05	9.61E-05	3.84E-05	9.61E-05	3.70E-03	1.85E-07	6.65E-06	3.70E-06
OFMA-2	Blasting	1.06E-04	2.79E-04	1.06E-06	7.17E-05	5.49E-04	2.19E-04	5.49E-04	2.11E-02	1.06E-06	3.80E-05	2.11E-05
CFMA-1	Generator	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CFMA-2	Generator	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CFMA-3	Generator	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VFMA-1	Haulage	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VFMA-2	Dozing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VFMA-3	Grading	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VFMA-4	Rubber Tire Rigs	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VFMA-5	Land Clearing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VFMA-6	Misc. Vehicles	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HFMA-1	Overburden Unloading	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mission Circuit	***Sub-total(Fugitive and Non-Fugitive)***	**1.99E-03**	**5.25E-03**	**1.99E-05**	**1.35E-03**	**1.03E-02**	**4.14E-03**	**1.03E-02**	**3.98E-01**	**1.99E-05**	**7.16E-04**	**3.98E-04**
SSOPM-1	SSOPM-1; Ducon 108 Scrubber; Primary Crusher	1.30E-05	3.44E-05	1.30E-07	8.87E-06	6.79E-05	2.71E-05	6.79E-05	2.61E-03	1.30E-07	4.70E-06	2.61E-06
SSOPM-2a	SSOPM-2a; Wet Rotoclone Scrubber; Transfer to Secondary	5.91E-06	1.56E-05	5.91E-08	4.02E-06	3.07E-05	1.23E-05	3.07E-05	1.18E-03	5.91E-08	2.13E-06	1.18E-06
SSOPM-2b	SSOPM-2b; Wet Rotoclone Scrubber; Transfer to Secondary	1.42E-06	3.76E-06	1.42E-08	9.68E-07	7.40E-06	2.96E-06	7.40E-06	2.85E-04	1.42E-08	5.12E-07	2.85E-07
SSOPM-3	SSPOM-3; Water Sprays; Transfer to Tertiary	1.53E-06	4.05E-06	1.53E-08	1.04E-06	7.97E-06	3.19E-06	7.97E-06	3.07E-04	1.53E-08	5.52E-07	3.07E-07
SSOPM-4	SSOPM-4; Wet Scrubber - Secondary and Tertiary Crushing	4.94E-05	1.31E-04	4.94E-07	3.36E-05	2.57E-04	1.03E-04	2.57E-04	9.89E-03	4.94E-07	1.78E-05	9.89E-06
SSOPM-5	SSOPM-5; Wet Scrubber - Secondary and Tertiary Crushing	4.94E-05	1.31E-04	4.94E-07	3.36E-05	2.57E-04	1.03E-04	2.57E-04	9.89E-03	4.94E-07	1.78E-05	9.89E-06
SSOPM-6	SSOPM-6; Wet Scrubber - Secondary and Tertiary Crushing	4.94E-05	1.31E-04	4.94E-07	3.36E-05	2.57E-04	1.03E-04	2.57E-04	9.89E-03	4.94E-07	1.78E-05	9.89E-06
SSOPM-7	SSOPM-7; Wet Scrubber - Secondary and Tertiary Crushing	4.94E-05	1.31E-04	4.94E-07	3.36E-05	2.57E-04	1.03E-04	2.57E-04	9.89E-03	4.94E-07	1.78E-05	9.89E-06
SSOPM-8	SSOPM-8; Wet Scrubber - Transfer Point Outside Crusher	3.60E-06	9.51E-06	3.60E-08	2.45E-06	1.87E-05	7.49E-06	1.87E-05	7.20E-04	3.60E-08	1.30E-06	7.20E-07
SSOPM-9	SSOPM-9; Baghouse; Transfer to Fine Ore Bin	4.99E-07	1.32E-06	4.99E-09	3.39E-07	2.60E-06	1.04E-06	2.60E-06	9.98E-05	4.99E-09	1.80E-07	9.98E-08
SSOPM-10	SSOPM-10; Baghouse; Transfer to Fine Ore Bin	3.48E-07	9.19E-07	3.48E-09	2.37E-07	1.81E-06	7.24E-07	1.81E-06	6.96E-05	3.48E-09	1.25E-07	6.96E-08
SSOPM-11	SSOPM-11; Baghouse; Transfer to Fine Ore Bin	5.07E-07	1.34E-06	5.07E-09	3.45E-07	2.64E-06	1.05E-06	2.64E-06	1.01E-04	5.07E-09	1.82E-07	1.01E-07
SSOPM-12	SSOPM-12; Baghouse; Transfer to Fine Ore Bin	5.86E-07	1.55E-06	5.86E-09	3.98E-07	3.04E-06	1.22E-06	3.04E-06	1.17E-04	5.86E-09	2.11E-07	1.17E-07
SSOPM-13	SSOPM-13; Baghouse; Transfer to Fine Ore Bin	1.68E-06	4.44E-06	1.68E-08	1.14E-06	8.74E-06	3.49E-06	8.74E-06	3.36E-04	1.68E-08	6.05E-07	3.36E-07
SSOPM-14	SSOPM-14; Wet Scrubber; Transfer to Rod Mill	5.02E-06	1.32E-05	5.02E-08	3.41E-06	2.61E-05	1.04E-05	2.61E-05	1.00E-03	5.02E-08	1.81E-06	1.00E-06
SSOPM-15	SSOPM-15; Wet Scrubber; Transfer to Rod Mill	5.02E-06	1.32E-05	5.02E-08	3.41E-06	2.61E-05	1.04E-05	2.61E-05	1.00E-03	5.02E-08	1.81E-06	1.00E-06
SSOPM-16	SSOPM-16; Wet Scrubber; Transfer to Rod Mill	5.02E-06	1.32E-05	5.02E-08	3.41E-06	2.61E-05	1.04E-05	2.61E-05	1.00E-03	5.02E-08	1.81E-06	1.00E-06
SSOPM-17	SSOPM-17; Baghouse; Lime Conveyance	3.13E-06	8.27E-06	3.13E-08	2.13E-06	1.63E-05	6.51E-06	1.63E-05	6.26E-04	3.13E-08	1.13E-06	6.26E-07
SSOPM-18	Lime Transfer feeder to Conveyor	7.83E-05	2.07E-04	7.83E-07	5.32E-05	4.07E-04	1.63E-04	4.07E-04	1.57E-02	7.83E-07	2.82E-05	1.57E-05
SSOPM-19	American Air filter Scrubber	1.51E-04	3.97E-04	1.51E-06	1.02E-04	7.83E-04	3.13E-04	7.83E-04	3.01E-02	1.51E-06	5.42E-05	3.01E-05
HFOPM-1	Primary Crushing	7.53E-04	1.99E-03	7.53E-06	5.12E-04	3.91E-03	1.57E-03	3.91E-03	1.51E-01	7.53E-06	2.71E-04	1.51E-04
HFOPM-2	Coarse Oar Storage	7.53E-04	1.99E-03	7.53E-06	5.12E-04	3.91E-03	1.57E-03	3.91E-03	1.51E-01	7.53E-06	2.71E-04	1.51E-04
HFOPM-3	Transfer of Concentrate	5.02E-06	1.32E-05	5.02E-08	3.41E-06	2.61E-05	1.04E-05	2.61E-05	1.00E-03	5.02E-08	1.81E-06	1.00E-06
HFOPM-4	Transfer of Concentrate	5.02E-06	1.32E-05	5.02E-08	3.41E-06	2.61E-05	1.04E-05	2.61E-05	1.00E-03	5.02E-08	1.81E-06	1.00E-06
North Circuit	**Sub *Total (Fugitive and Non-Fugitive)***	**9.44E-04**	**2.49E-03**	**9.44E-06**	**6.42E-04**	**4.91E-03**	**1.96E-03**	**4.91E-03**	**1.89E-01**	**9.44E-06**	**3.40E-04**	**1.89E-04**
SSOPN-1	SSOPN-1; Wet Ducon Scrubbers Primary and Secondary	5.92E-05	1.56E-04	5.92E-07	4.03E-05	3.08E-04	1.23E-04	3.08E-04	1.18E-02	5.92E-07	2.13E-05	1.18E-05
SSOPN-2	SSOPN-2; Wet Ducon Scrubbers Primary and Secondary	5.92E-05	1.56E-04	5.92E-07	4.03E-05	3.08E-04	1.23E-04	3.08E-04	1.18E-02	5.92E-07	2.13E-05	1.18E-05
SSOPN-3	SSOPN-3; Wet Ducon Scrubbers Primary and Secondary	5.92E-05	1.56E-04	5.92E-07	4.03E-05	3.08E-04	1.23E-04	3.08E-04	1.18E-02	5.92E-07	2.13E-05	1.18E-05
SSOPN-4	Stack	8.21E-06	2.17E-05	8.21E-08	5.58E-06	4.27E-05	1.71E-05	4.27E-05	1.64E-03	8.21E-08	2.96E-06	1.64E-06
SSOPN-5	SSOPN-5 Water Sprays; Transfer to Tertiary	2.46E-04	6.50E-04	2.46E-06	1.68E-04	1.28E-03	5.12E-04	1.28E-03	4.93E-02	2.46E-06	8.87E-05	4.93E-05
SSOPN-6	SSOPN-6; Micropulse Baghouse; Transfer to Fine Ore Bin	3.61E-06	9.54E-06	3.61E-08	2.46E-06	1.88E-05	7.52E-06	1.88E-05	7.23E-04	3.61E-08	1.30E-06	7.23E-07
SSOPN-7	SSOPN-7; Wet Ducon 84 Scrubber; Transfer to Ball Mills	1.51E-05	3.98E-05	1.51E-07	1.02E-05	7.84E-05	3.13E-05	7.84E-05	3.01E-03	1.51E-07	5.43E-06	3.01E-06
HFOPN-1	Ore transfer near primary crusher	2.46E-04	6.50E-04	2.46E-06	1.68E-04	1.28E-03	5.12E-04	1.28E-03	4.93E-02	2.46E-06	8.87E-05	4.93E-05
HFOPN-2	Ore transfer to tertiary crushing	2.46E-04	6.50E-04	2.46E-06	1.68E-04	1.28E-03	5.12E-04	1.28E-03	4.93E-02	2.46E-06	8.87E-05	4.93E-05
N/A	Railcar Loading (Touch n Seal) Emissions	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
South Circuit Pre Expansion	***Sub Total (Fugitive and Non-Fugitive)***	**5.88E-04**	**1.55E-03**	**5.88E-06**	**4.00E-04**	**3.06E-03**	**1.22E-03**	**3.06E-03**	**1.18E-01**	**5.88E-06**	**2.12E-04**	**1.18E-04**
SSOPS-1	SSOPS-1 Wet Dicun 96 Scrubber; Primary Crushing	2.63E-06	6.94E-06	2.63E-08	1.79E-06	1.37E-05	5.47E-06	1.37E-05	5.26E-04	2.63E-08	9.46E-07	5.26E-07
SSOPS-2	SSOPS-2 Wet Dicun 42 Scrubber; Transfer to Stacker	2.67E-07	7.04E-07	2.67E-09	1.81E-07	1.39E-06	5.55E-07	1.39E-06	5.33E-05	2.67E-09	9.60E-08	5.33E-08
SSOPS-3	SSOPS-3; Wet Ducon 72 Scrubber; Transfer to SAG Mill	2.16E-06	5.71E-06	2.16E-08	1.47E-06	1.12E-05	4.50E-06	1.12E-05	4.32E-04	2.16E-08	7.78E-07	4.32E-07
SSOPS-4	SSOPS-4; Wet Ducon 66 Scrubber; Transfer to Secondary Crusher	2.22E-04	5.86E-04	2.22E-06	1.51E-04	1.15E-03	4.62E-04	1.15E-03	4.44E-02	2.22E-06	7.99E-05	4.44E-05
SSOPS-3a	SAG Mill Belt Feeder Transfer Point	2.19E-04	5.78E-04	2.19E-06	1.49E-04	1.14E-03	4.56E-04	1.14E-03	4.38E-02	2.19E-06	7.88E-05	4.38E-05
SSOPS-5a	Water Sprays; Transfer to Sag	6.57E-05	1.73E-04	6.57E-07	4.47E-05	3.42E-04	1.37E-04	3.42E-04	1.31E-02	6.57E-07	2.37E-05	1.31E-05
SSOPS-5b	Tranfer of Crushed Ore	6.57E-05	1.73E-04	6.57E-07	4.47E-05	3.42E-04	1.37E-04	3.42E-04	1.31E-02	6.57E-07	2.37E-05	1.31E-05
SSOPS-5c	Transfer of Concentrate	2.74E-06	7.23E-06	2.74E-08	1.86E-06	1.42E-05	5.69E-06	1.42E-05	5.48E-04	2.74E-08	9.86E-07	5.48E-07
SSOPS-6	SSOPS-6; Stack; Mikro-Pulsaire Baghouse; Transfer to Lime Bin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPS-7	SSOPS-7; Baghouse; Lime Transfer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N/A	Batch drop - South Concentrate Storage Pile	8.03E-06	2.12E-05	8.03E-08	5.46E-06	4.18E-05	1.67E-05	4.18E-05	1.61E-03	8.03E-08	2.89E-06	1.61E-06

Number	Emissions Source/Activity	Benzene	Toluene	Xylenes	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Naphthalene	Acenaphthylene	Acenaphthene
	TOTAL	1.70E-01	2.18E-01	2.15E-03	7.29E-05	4.74E-03	1.64E-03	2.38E-04	1.26E-03	8.69E-05	4.19E-05
Mining	***Sub-total (Fugitive and Non-Fugitive)***	**8.25E-03**	**3.12E-03**	**2.15E-03**	**7.29E-05**	**2.86E-03**	**1.64E-03**	**2.38E-04**	**1.25E-03**	**8.68E-05**	**4.19E-05**
OFMA-1	Drilling	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
OFMA-2	Blasting	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CFMA-1	Generator	1.74E-03	7.62E-04	5.31E-04	7.29E-05	2.20E-03	1.43E-03	1.72E-04	1.58E-04	9.43E-06	2.65E-06
CFMA-2	Generator	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CFMA-3	Generator	6.51E-03	2.36E-03	1.62E-03	0.00E+00	6.62E-04	2.11E-04	6.61E-05	1.09E-03	7.74E-05	3.92E-05
VFMA-1	Haulage	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VFMA-2	Dozing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VFMA-3	Grading	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VFMA-4	Rubber Tire Rigs	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VFMA-5	Land Clearing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VFMA-6	Misc. Vehicles	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HFMA-1	Overburden Unloading	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mission Circuit	***Sub-total(Fugitive and Non-Fugitive)***	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
SSOPM-1	SSOPM-1; Ducon 108 Scrubber; Primary Crusher	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-2a	SSOPM-2a; Wet Rotoclone Scrubber; Transfer to Secondary	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-2b	SSOPM-2b; Wet Rotoclone Scrubber; Transfer to Secondary	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-3	SSPOM-3; Water Sprays; Transfer to Tertiary	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-4	SSOPM-4; Wet Scrubber - Secondary and Tertiary Crushing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-5	SSOPM-5; Wet Scrubber - Secondary and Tertiary Crushing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-6	SSOPM-6; Wet Scrubber - Secondary and Tertiary Crushing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-7	SSOPM-7; Wet Scrubber - Secondary and Tertiary Crushing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-8	SSOPM-8; Wet Scrubber - Transfer Point Outside Crusher	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-9	SSOPM-9; Baghouse; Transfer to Fine Ore Bin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-10	SSOPM-10; Baghouse; Transfer to Fine Ore Bin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-11	SSOPM-11; Baghouse; Transfer to Fine Ore Bin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-12	SSOPM-12; Baghouse; Transfer to Fine Ore Bin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-13	SSOPM-13; Baghouse; Transfer to Fine Ore Bin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-14	SSOPM-14; Wet Scrubber; Transfer to Rod Mill	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-15	SSOPM-15; Wet Scrubber; Transfer to Rod Mill	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-16	SSOPM-16; Wet Scrubber; Transfer to Rod Mill	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-17	SSOPM-17; Baghouse; Lime Conveyance	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-18	Lime Transfer feeder to Conveyor	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPM-19	American Air filter Scrubber	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HFOPM-1	Primary Crushing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HFOPM-2	Coarse Oar Storage	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HFOPM-3	Transfer of Concentrate	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HFOPM-4	Transfer of Concentrate	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
North Circuit	**Sub *Total (Fugitive and Non-Fugitive)***	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
SSOPN-1	SSOPN-1; Wet Ducon Scrubbers Primary and Secondary	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPN-2	SSOPN-2; Wet Ducon Scrubbers Primary and Secondary	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPN-3	SSOPN-3; Wet Ducon Scrubbers Primary and Secondary	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPN-4	Stack	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPN-5	SSOPN-5 Water Sprays; Transfer to Tertiary	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPN-6	SSOPN-6; Micropulse Baghouse; Transfer to Fine Ore Bin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPN-7	SSOPN-7; Wet Ducon 84 Scrubber; Transfer to Ball Mills	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HFOPN-1	Ore transfer near primary crusher	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HFOPN-2	Ore transfer to tertiary crushing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N/A	Railcar Loading (Touch n Seal) Emissions	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
South Circuit Pre Expansion	***Sub Total (Fugitive and Non-Fugitive)***	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
SSOPS-1	SSOPS-1 Wet Dicun 96 Scrubber; Primary Crushing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPS-2	SSOPS-2 Wet Dicun 42 Scrubber; Transfer to Stacker	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPS-3	SSOPS-3; Wet Ducon 72 Scrubber; Transfer to SAG Mill	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPS-4	SSOPS-4; Wet Ducon 66 Scrubber; Transfer to Secondary Crusher	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPS-3a	SAG Mill Belt Feeder Transfer Point	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPS-5a	Water Sprays; Transfer to Sag	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPS-5b	Tranfer of Crushed Ore	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPS-5c	Transfer of Concentrate	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPS-6	SSOPS-6; Stack; Mikro-Pulsaire Baghouse; Transfer to Lime Bin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOPS-7	SSOPS-7; Baghouse; Lime Transfer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N/A	Batch drop - South Concentrate Storage Pile	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Number	Emissions Source/Activity	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	2-Methylnaphthalene	3-Methylchloranthrene	7,12-Dimethylbenz(a)ant	Dichlorobenzene	Hexane	Ethylbenzene	Xylene - p	Xylelene-m	Xylene-o	MTBE	MDI	Total (Mission Facility) (tons/yr)
	TOTAL	1.62E-04	3.48E-03	1.39E-05	4.81E-05	4.01E-05	8.39E-06	1.35E-05	9.54E-06	2.16E-06	2.54E-06	4.22E-06	4.02E-06	5.60E-06	6.01E-07	4.50E-08	4.00E-07	3.00E-05	1.44E-01	4.60E-02	3.00E-02	1.52E-01	7.30E-02	4.97E-01	8.10E-03	2.614
Mining	***Sub-total (Fugitive and Non-Fugitive)***	**1.62E-04**	**3.48E-03**	**1.38E-05**	**4.80E-05**	**4.00E-05**	**8.35E-06**	**1.35E-05**	**9.49E-06**	**2.12E-06**	**2.51E-06**	**4.17E-06**	**3.99E-06**	**5.57E-06**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	
OFMA-1	Drilling	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
OFMA-2	Blasting	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
CFMA-1	Generator	5.44E-05	5.48E-05	3.48E-06	1.42E-05	8.91E-06	3.13E-06	6.58E-07	1.85E-07	2.89E-07	3.50E-07	6.99E-07	1.09E-06	9.11E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
CFMA-2	Generator	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
CFMA-3	Generator	1.07E-04	3.42E-03	1.03E-05	3.38E-05	3.11E-05	5.22E-06	1.28E-05	9.31E-06	1.83E-06	2.16E-06	3.47E-06	2.90E-06	4.66E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
VFMA-1	Haulage	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
VFMA-2	Dozing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
VFMA-3	Grading	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
VFMA-4	Rubber Tire Rigs	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
VFMA-5	Land Clearing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
VFMA-6	Misc. Vehicles	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
HFMA-1	Overburden Unloading	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Mission Circuit	***Sub-total(Fugitive and Non-Fugitive)***	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	
SSOPM-1	SSOPM-1; Ducon 108 Scrubber; Primary Crusher	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-2a	SSOPM-2a; Wet Rotoclone Scrubber; Transfer to Secondary	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-2b	SSOPM-2b; Wet Rotoclone Scrubber; Transfer to Secondary	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-3	SSPOM-3; Water Sprays; Transfer to Tertiary	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-4	SSOPM-4; Wet Scrubber - Secondary and Tertiary Crushing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-5	SSOPM-5; Wet Scrubber - Secondary and Tertiary Crushing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-6	SSOPM-6; Wet Scrubber - Secondary and Tertiary Crushing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-7	SSOPM-7; Wet Scrubber - Secondary and Tertiary Crushing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-8	SSOPM-8; Wet Scrubber - Transfer Point Outside Crusher	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-9	SSOPM-9; Baghouse; Transfer to Fine Ore Bin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-10	SSOPM-10; Baghouse; Transfer to Fine Ore Bin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-11	SSOPM-11; Baghouse; Transfer to Fine Ore Bin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-12	SSOPM-12; Baghouse; Transfer to Fine Ore Bin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-13	SSOPM-13; Baghouse; Transfer to Fine Ore Bin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-14	SSOPM-14; Wet Scrubber; Transfer to Rod Mill	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-15	SSOPM-15; Wet Scrubber; Transfer to Rod Mill	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-16	SSOPM-16; Wet Scrubber; Transfer to Rod Mill	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-17	SSOPM-17; Baghouse; Lime Conveyance	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-18	Lime Transfer feeder to Conveyor	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPM-19	American Air filter Scrubber	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
HFOPM-1	Primary Crushing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
HFOPM-2	Coarse Oar Storage	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
HFOPM-3	Transfer of Concentrate	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
HFOPM-4	Transfer of Concentrate	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
North Circuit	**Sub *Total (Fugitive and Non-Fugitive)***	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**8.10E-03**	
SSOPN-1	SSOPN-1; Wet Ducon Scrubbers Primary and Secondary	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPN-2	SSOPN-2; Wet Ducon Scrubbers Primary and Secondary	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPN-3	SSOPN-3; Wet Ducon Scrubbers Primary and Secondary	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPN-4	Stack	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPN-5	SSOPN-5 Water Sprays; Transfer to Tertiary	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPN-6	SSOPN-6; Micropulse Baghouse; Transfer to Fine Ore Bin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPN-7	SSOPN-7; Wet Ducon 84 Scrubber; Transfer to Ball Mills	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
HFOPN-1	Ore transfer near primary crusher	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
HFOPN-2	Ore transfer to tertiary crushing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
N/A	Railcar Loading (Touch n Seal) Emissions	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.10E-03	
South Circuit Pre Expansion	***Sub Total (Fugitive and Non-Fugitive)***	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	
SSOPS-1	SSOPS-1 Wet Dicun 96 Scrubber; Primary Crushing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPS-2	SSOPS-2 Wet Dicun 42 Scrubber; Transfer to Stacker	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPS-3	SSOPS-3; Wet Ducon 72 Scrubber; Transfer to SAG Mill	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPS-4	SSOPS-4; Wet Ducon 66 Scrubber; Transfer to Secondary Crusher	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPS-3a	SAG Mill Belt Feeder Transfer Point	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPS-5a	Water Sprays; Transfer to Sag	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPS-5b	Tranfer of Crushed Ore	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPS-5c	Transfer of Concentrate	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPS-6	SSOPS-6; Stack; Mikro-Pulsaire Baghouse; Transfer to Lime Bin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPS-7	SSOPS-7; Baghouse; Lime Transfer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
N/A	Batch drop - South Concentrate Storage Pile	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	

HAP Summary
2011 Emission Inventory
Mission Property

Number	Emissions Source/Activity	HAPs																																													Total (Mission Facility)
		Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se	Benzene	Toluene	Xylenes	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,l)perylene	2-Methylnaphthalene	3-Methylchloranthrene	7,12-Dimethylbenz(a)ant	Dichlorobenzene	Hexane	Ethylbenzene	Xylene - p	Xylelene-m	Xylene-o	MTBE	MDI	(tons/yr)
South Circuit Post Expansion	***Sub Total (Fugitive and Non-Fugitive)***	**1.50E-03**	**3.97E-03**	**1.50E-05**	**1.02E-03**	**7.82E-03**	**3.13E-03**	**7.82E-03**	**3.01E-01**	**1.50E-05**	**5.41E-04**	**3.01E-04**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	
SSOPS-1	SSOPS-1 Wet Ducon 96 Scrubber; Primary Crushing	5.91E-06	1.56E-05	5.91E-08	4.02E-06	3.07E-05	1.23E-05	3.07E-05	1.18E-03	5.91E-08	2.13E-06	1.18E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPS-2	SSOPS-2 Wet Ducon 42 Scrubber; Transfer to Stacker	4.51E-06	1.19E-05	4.51E-08	3.06E-06	2.34E-05	9.37E-06	2.34E-05	9.01E-04	4.51E-08	1.62E-06	9.01E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPS-3A	SSOPS-3A; E. Side of Stockpile	3.66E-06	9.66E-06	3.66E-08	2.49E-06	1.90E-05	7.61E-06	1.90E-05	7.32E-04	3.66E-08	1.32E-06	7.32E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPS-3B	SSOPS-3B; E. Side of Stockpile	3.66E-06	9.66E-06	3.66E-08	2.49E-06	1.90E-05	7.61E-06	1.90E-05	7.32E-04	3.66E-08	1.32E-06	7.32E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPS-4A	SSOPS-4; Scrubber; Transfer to Secondary Crusher	1.39E-05	3.67E-05	1.39E-07	9.45E-06	7.22E-05	2.89E-05	7.22E-05	2.78E-03	1.39E-07	5.00E-06	2.78E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPS-4	SSOPS-4A; Ducon 72 Scrubber; Transfer to SAG Mill	1.22E-05	3.22E-05	1.22E-07	8.30E-06	6.34E-05	2.54E-05	6.34E-05	2.44E-03	1.22E-07	4.39E-06	2.44E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
SSOPS-6	SSOPS-6; Farr Dust Collector; Lime Loading	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
HFOPS-1	Transfer Point of Crusher Ore	2.81E-04	7.42E-04	2.81E-06	1.91E-04	1.46E-03	5.85E-04	1.46E-03	5.63E-02	2.81E-06	1.01E-04	5.63E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
PFOPS-1	Primary crusher	1.17E-04	3.09E-04	1.17E-06	7.97E-05	6.09E-04	2.44E-04	6.09E-04	2.34E-02	1.17E-06	4.22E-05	2.34E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
PFOPS-2	Transfer to radial stacker	9.38E-05	2.48E-04	9.38E-07	6.38E-05	4.88E-04	1.95E-04	4.88E-04	1.88E-02	9.38E-07	3.38E-05	1.88E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
HFOPS-2	Transfer Point of Crusher Ore	5.63E-04	1.49E-03	5.63E-06	3.83E-04	2.93E-03	1.17E-03	2.93E-03	1.13E-01	5.63E-06	2.03E-04	1.13E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
PFOPS-3	Apron Feeders 30-130/131/132/133 to Conveyors 30-134/136	2.81E-05	7.43E-05	2.81E-07	1.91E-05	1.46E-04	5.85E-05	1.46E-04	5.63E-03	2.81E-07	1.01E-05	5.63E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
PFOPS-4	Conveyor 30-134/136 to SAG Mills 30-201/202	2.81E-05	7.43E-05	2.81E-07	1.91E-05	1.46E-04	5.85E-05	1.46E-04	5.63E-03	2.81E-07	1.01E-05	5.63E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
PFOPS-5	SAG Mills (2)/Double Deck Screens (2) to Conveyors	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
PFOPS 6/7	SAG Reclam Belt	8.76E-06	2.31E-05	8.76E-08	5.96E-06	4.56E-05	1.82E-05	4.56E-05	1.75E-03	8.76E-08	3.15E-06	1.75E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
PFOPS-8	Omnicore Circuit	3.29E-05	8.67E-05	3.29E-07	2.23E-05	1.71E-04	6.83E-05	1.71E-04	6.57E-03	3.29E-07	1.18E-05	6.57E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
PFOPS-11 (SS	Transfer from Omnicore Crushers	1.10E-04	2.89E-04	1.10E-06	7.45E-05	5.69E-04	2.28E-04	5.69E-04	2.19E-02	1.10E-06	3.94E-05	2.19E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
PSOPS-12	Transfer from Omnicore Crushers (Bypass)	2.63E-05	6.94E-05	2.63E-07	1.79E-05	1.37E-04	5.47E-05	1.37E-04	5.26E-03	2.63E-07	9.46E-06	5.26E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
PSOPS-13	Transfer from Omnicore crushers (Return)	2.63E-05	6.94E-05	2.63E-07	1.79E-05	1.37E-04	5.47E-05	1.37E-04	5.26E-03	2.63E-07	9.46E-06	5.26E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
HFOPS-4	Conveyer to Concentrate Stacking	2.81E-06	7.43E-06	2.81E-08	1.91E-06	1.46E-05	5.85E-06	1.46E-05	5.63E-04	2.81E-08	1.01E-06	5.63E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
HFOPS-5	Concentrate Loading	7.03E-06	1.86E-05	7.03E-08	4.78E-06	3.66E-05	1.46E-05	3.66E-05	1.41E-03	7.03E-08	2.53E-06	1.41E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
HFOPS-3	Stacking	3.29E-05	8.67E-05	3.29E-07	2.23E-05	1.71E-04	6.83E-05	1.71E-04	6.57E-03	3.29E-07	1.18E-05	6.57E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
PFOPS-9	Transfer from vibratory feeders 20-252/253/254 to Conveyor 20-251	2.37E-05	6.24E-05	2.37E-07	1.61E-05	1.23E-04	4.92E-05	1.23E-04	4.73E-03	2.37E-07	8.51E-06	4.73E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
PFOPS-10	Transfer from 20-251 (42" Conveyer) to 20-255 (36" conveyer)	7.88E-05	2.08E-04	7.88E-07	5.36E-05	4.10E-04	1.64E-04	4.10E-04	1.58E-02	7.88E-07	2.84E-05	1.58E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
PFOPS-14	Concentrate Filter Press to Conveyer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
PFOPS-20	Concentrator: Ball mills, flotation, thickening, various conveyors	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Handling Fugitives																																															
HFOPM-1	Mission Transfers	These emissions have already been accounted for in the Mission, North and South Circuit emission section.																																													
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	***Sub Total (Fugitive and Non-Fugitive)***	**1.20E-03**	**3.18E-03**	**1.20E-05**	**8.18E-04**	**6.25E-03**	**2.50E-03**	**6.25E-03**	**2.41E-01**	**1.20E-05**	**4.33E-04**	**2.41E-04**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	
WFOPM-1	Mission Coarse Ore	4.02E-07	1.06E-06	4.02E-09	2.73E-07	2.09E-06	8.35E-07	2.09E-06	8.03E-05	4.02E-09	1.45E-07	8.03E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
WFOPN-1	North Coarse Ore	1.10E-07	2.89E-07	1.10E-09	7.45E-08	5.69E-07	2.28E-07	5.69E-07	2.19E-05	1.10E-09	3.94E-08	2.19E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
WFOPS-1	South Coarse Ore	2.50E-07	6.60E-07	2.50E-09	1.70E-07	1.30E-06	5.20E-07	1.30E-06	5.00E-05	2.50E-09	9.00E-08	5.00E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
WFOPS-2	South Intermediate Storage	1.40E-07	3.70E-07	1.40E-09	9.53E-08	7.29E-07	2.92E-07	7.29E-07	2.80E-05	1.40E-09	5.05E-08	2.80E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
WFOPM-2	Mission North Concentrate Storage	8.03E-09	2.12E-08	8.03E-11	5.46E-09	4.18E-08	1.67E-08	4.18E-08	1.61E-06	8.03E-11	2.89E-09	1.61E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
WFOPS-3	South Concentrate Storage	1.50E-08	3.96E-08	1.50E-10	1.02E-08	7.80E-08	3.12E-08	7.80E-08	3.00E-06	1.50E-10	5.40E-09	3.00E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
WFDA-1	Tailings Dams	1.20E-03	3.17E-03	1.20E-05	8.17E-04	6.25E-03	2.50E-03	6.25E-03	2.40E-01	1.20E-05	4.33E-04	2.40E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
WFDA-2	Overburden Areas	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
By-Products (Moly Plant)	***Sub Total (Fugitive and Non-Fugitive)***	**3.59E-05**	**9.98E-05**	**6.72E-07**	**5.20E-05**	**2.22E-04**	**7.68E-05**	**1.87E-04**	**7.19E-03**	**6.87E-06**	**6.55E-05**	**7.79E-06**	**5.26E-05**	**8.51E-05**	**0.00E+00**	**0.00E+00**	**1.88E-03**	**0.00E+00**	**0.00E+00**	**1.53E-05**	**4.50E-08**	**4.50E-08**	**7.01E-08**	**4.25E-07**	**6.01E-08**	**7.51E-08**	**1.25E-07**	**4.50E-08**	**4.50E-08**	**4.50E-08**	**4.50E-08**	**3.00E-08**	**4.50E-08**	**3.00E-08**	**3.00E-08**	**6.01E-07**	**4.50E-08**	**4.00E-07**	**3.00E-05**	**4.50E-02**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	
SSMP-1	SSMP-1 Ducon 21 Wet Scrubber; Loading, Packaging	2.16E-05	5.69E-05	2.16E-07	1.47E-05	1.12E-04	4.49E-05	1.12E-04	4.31E-03	2.16E-07	7.77E-06	4.31E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
CFMP-1	Dryer	0.00E+00	2.50E-06	1.56E-07	1.38E-05	1.75E-05	1.05E-06	0.00E+00	4.76E-06	3.25E-06	2.63E-05	3.00E-07	2.63E-05	4.25E-05	0.00E+00	0.00E+00	9.39E-04	0.00E+00	0.00E+00	7.63E-06	2.25E-08	2.25E-08	3.50E-08	2.13E-07	3.00E-08	3.75E-08	6.26E-08	2.25E-08	2.25E-08	2.25E-08	2.25E-08	1.50E-08	2.25E-08	1.50E-08	1.50E-08	3.00E-07	2.25E-08	2.00E-07	1.50E-05	2.25E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
CFMP-2	Dryer	0.00E+00	2.50E-06	1.56E-07	1.38E-05	1.75E-05	1.05E-06	0.00E+00	4.76E-06	3.25E-06	2.63E-05	3.00E-07	2.63E-05	4.25E-05	0.00E+00	0.00E+00	9.39E-04	0.00E+00	0.00E+00	7.63E-06	2.25E-08	2.25E-08	3.50E-08	2.13E-07	3.00E-08	3.75E-08	6.26E-08	2.25E-08	2.25E-08	2.25E-08	2.25E-08	1.50E-08	2.25E-08	1.50E-08	1.50E-08	3.00E-07	2.25E-08	2.00E-07	1.50E-05	2.25E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
n/a	Filter Press Drop to Dryer	1.10E-08	2.89E-08	1.10E-10	7.45E-09	5.69E-08	2.28E-08	5.69E-08	2.19E-06	1.10E-10	3.94E-09	2.19E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
n/a	Dryer Drop to Product Packaging	1.31E-07	3.47E-07	1.31E-09	8.94E-08	6.83E-07	2.73E-07	6.83E-07	2.63E-05	1.31E-09	4.73E-08	2.63E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
n/a	Product Packagining	1.31E-07	3.47E-07	1.31E-09	8.94E-08	6.83E-07	2.73E-07	6.83E-07	2.63E-05	1.31E-09	4.73E-08	2.63E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
n/a	Moly Plant Wet Scrubber	1.41E-05	3.72E-05	1.41E-07	9.57E-06	7.32E-05	2.93E-05	7.32E-05	2.82E-03	1.41E-07	5.07E-06	2.82E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Tanks	***Sub Total (Fugitive and Non-Fugitive)***	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**1.62E-01**	**2.15E-01**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**9.90E-02**	**4.60E-02**	**3.00E-02**	**1.52E-01**	**7.30E-02**	**4.97E-01**	**0.00E+00**	
N/A	Gasoline Storage Tank (UST)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.62E-01	2.15E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.90E-02	4.60E-02	3.00E-02	1.52E-01	7.30E-02	4.97E-01	0.00E+00	

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)
Facility-wide PTE for All Source (Process and Fugitive as provided in Title V TSD)	7,512.9	3,639.9	532.3	367.7	221.0	55.0	7.7
Facility-wide PTE Stack Emissions (as provided in Title V Permit Summary)	568.0	381.1	93.5	367.7	221.0	55.0	11.5

Number	Emissions Source/Activity	Uncontrolled Emissions														Control	Controlled Emissions						
		(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	Control Device
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		334.1	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	0.05	7.39	3.84	0.22	Dust shield/water application
OFMA-2	Blasting	9.64	5.01	0.29	76.48	19.41	2.28		42.20	21.95	1.27	335.0	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	769.77	76.82	Water Application on Roads
VFMA-2	Dozing	57.45	12.63	6.03					251.63	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	24.59	795.83	462.18	107.72	
SSOPM-1	SSOPM-1; Ducon 108 Scrubber; Primary Crusher																1.19	1.19	0.22	5.22	5.22	0.97	Scrubber
SSOPM-2a	SSOPM-2a; Wet Hydrostatic Precipitator; Transfer to Secondary																0.54	0.54	0.15	2.37	2.37	0.67	Scrubber
SSOPM-2b	SSOPM-2b; Wet Hydrostatic Precipitator; Transfer to Secondary																0.13	0.13	0.04	0.57	0.57	0.16	Scrubber
SSOPM-3	SSPOM-3; Beu-Math Size 60 Wet Scrubber																0.14	0.14	0.03	0.61	0.61	0.11	Scrubber
SSOPM-4	SSOPM-4; Wet Scrubber - Secondary and Tertiary Crushing																4.51	4.51	0.84	19.77	19.77	3.66	Scrubber
SSOPM-5	SSOPM-5; Wet Scrubber - Secondary and Tertiary Crushing																4.51	4.51	0.84	19.77	19.77	3.66	Scrubber
SSOPM-6	SSOPM-6; Wet Scrubber - Secondary and Tertiary Crushing																4.51	4.51	0.84	19.77	19.77	3.66	Scrubber
SSOPM-7	SSOPM-7; Wet Scrubber - Secondary and Tertiary Crushing																4.51	4.51	0.84	19.77	19.77	3.66	Scrubber
SSOPM-8	SSOPM-8; Wet Scrubber - Transfer Point Outside Crusher																0.33	0.33	0.09	1.44	1.44	0.41	Scrubber
SSOPM-9	SSOPM-9; Baghouse; Transfer to Fine Ore Bin																0.05	0.05	0.01	0.20	0.20	0.06	Baghouse
SSOPM-10	SSOPM-10; Baghouse; Transfer to Fine Ore Bin																0.03	0.03	0.01	0.14	0.14	0.04	Baghouse
SSOPM-11	SSOPM-11; Baghouse; Transfer to Fine Ore Bin																0.05	0.05	0.01	0.20	0.20	0.06	Baghouse
SSOPM-12	SSOPM-12; Baghouse; Transfer to Fine Ore Bin																0.05	0.05	0.02	0.23	0.23	0.07	Baghouse
SSOPM-13	SSOPM-13; Baghouse; Transfer to Fine Ore Bin																0.15	0.15	0.04	0.67	0.67	0.19	Baghouse
SSOPM-14	SSOPM-14; Wet Scrubber; Transfer to Rod Mill																0.46	0.46	0.13	2.01	2.01	0.57	Scrubber
SSOPM-15	SSOPM-15; Wet Scrubber; Transfer to Rod Mill																0.46	0.46	0.13	2.01	2.01	0.57	Scrubber
SSOPM-16	SSOPM-16; Wet Scrubber; Transfer to Rod Mill																0.46	0.46	0.13	2.01	2.01	0.57	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															-	7.15	7.15	2.02	31.32	31.32	8.86	None
SSOPM-19	American Air filter Scrubber															95%	13.75	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	27.85	Enclosure/water spray
HFOPM-2	Coarse Oar Storage															75%	68.75	34.38	9.73	301.13	150.56	42.61	Water spray/dust suppresant
HFOPM-3	Transfer of Concentrate															-	0.46	0.18	0.05	2.01	0.80	0.23	None
HFOPM-4	Transfer of Concentrate															-	0.46	0.18	0.05	2.01	0.80	0.23	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																0.23	0.23	0.04	23.68	23.68	4.38	Scrubber
SSOPN-2	SSOPN-2; Wet Ducon Scrubbers Primary and Secondary																0.23	0.23	0.04	23.68	23.68	4.38	Scrubber
SSOPN-3	SSOPN-3; Wet Ducon Scrubbers Primary and Secondary																0.23	0.23	0.04	23.68	23.68	4.38	Scrubber
SSOPN-4	Stack															99%	0.75	0.38	0.11	3.29	1.64	0.46	Dust collector
SSOPN-5	SSOPN-5 Water Sprays; Transfer to Tertiary															70%	22.50	11.25	3.18	98.55	49.28	13.94	water sprays
SSOPN-6	SSOPN-6; Micropulse Baghouse; Transfer to Fine Ore Bin																0.01	0.01	0.00	1.45	1.45	0.41	Baghouse
SSOPN-7	SSOPN-7; Wet Ducon 84 Scrubber; Transfer to Ball Mills																0.06	0.06	0.02	6.03	6.03	1.71	Scrubber
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					0.25	0.12	0.12												None
n/a	Rail-car Loading (VOC emissions only)							0.00							0.01								None

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)
Facility-wide PTE for All Source (Process and Fugitive as provided in Title V TSD)	7,512.9	3,639.9	532.3	367.7	221.0	55.0	7.7
Facility-wide PTE Stack Emissions (as provided in Title V Permit Summary)	568.0	381.1	93.5	367.7	221.0	55.0	11.5

Number	Emissions Source/Activity	Uncontrolled Emissions														Control	Controlled Emissions						
		(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	Control Device
South Circuit Pre Expansion		-	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	
SSOPS-1	SSOPS-1 Wet Ducon 96 Scrubber; Primary Crushing																						
SSOPS-2	SSOPS-2 Wet Ducon 42 Scrubber; Transfer to Stacker																						
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-3a	SAG Mill Belt Feeder Transfer Point																						
SSOPS-5a	Water Sprays; Transfer to Sag																						
SSOPS-5b	Tranfer 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		-	-	-	-	-	-	-	-	-	-	-	-	-	-		137.91	62.20	17.72	604.05	272.45	77.60	
SSOPS-1	SSOPS-1 Wet Ducon 96 Scrubber; Primary Crushing																0.54	0.54	0.10	2.37	2.37	0.44	Baghouse
SSOPS-2	SSOPS-2 Wet Ducon 42 Scrubber; Transfer to Stacker																0.41	0.41	0.12	1.80	1.80	0.51	Scrubber
SSOPS-3A	SSOPS-3A; FARR Dust Collector; E. Side of Stockpile																0.33	0.33	0.09	1.46	1.46	0.41	Baghouse
SSOPS-3B	SSOPS-3B; FARR Dust Collector; E. Side of Stockpile																0.33	0.33	0.09	1.46	1.46	0.41	Baghouse
SSOPS-4	SSOPS-4; Scrubber; Transfer to Secondary Crusher																1.11	1.11	0.32	4.88	4.88	1.38	Scrubber
SSOPS-4A	SSOPS-4A; Ducon 72 Scrubber; Transfer to SAG Mill																1.27	1.27	0.36	5.56	5.56	1.57	Scrubber
SSOPS-6	SSOPS-6; FARR Dust Collector; Lime Loading																0.08	0.08	0.02	0.34	0.34	0.10	Baghouse
PFOPS-0 (HFOPS-1)	Transfer Point of Crusher Ore															85.00%	25.68	12.84	3.63	112.50	56.25	15.92	Enclosure/water spray
PFOPS-1	Primary crusher															98.50%	10.70	1.07	0.20	46.88	4.69	0.87	Enclosure/water spray
PFOPS-2	Transfer to radial stacker															95.00%	8.56	4.28	1.21	37.50	18.75	5.31	Water spray/scrubber
HFOPS-2	Transfer Point of Crusher Ore															70.00%	51.37	25.68	7.27	225.00	112.50	31.84	Water sprays
PFOPS-3	Apron Feeders 30-130/131/132/133 to Conveyors 30-134/136															98.50%	2.57	1.28	0.36	11.25	5.63	1.59	Enclosure/scrubber
PFOPS-4	Conveyor 30-134/136 to SAG Mills 30-201/202															98.50%	2.57	1.28	0.36	11.25	5.63	1.59	Enclosure/scrubber
PFOPS-5	SAG Mills (2)/Double Deck Screens (2) to Conveyors															98.50%	-	-	-	-	-	-	Enclosure/scrubber
PFOPS 6 and 7	SAG Reclam Belt															95.00%	0.80	0.32	0.09	3.50	1.40	0.40	Wet process/scrubber
PFOPS-8	Omnicore Circuit															70.00%	3.00	1.20	0.34	13.14	5.26	1.49	Wet process/enclosure
PFOPS-11 (SSOPS-5)	Transfer from Omnicore Crushers															95.00%	10.00	1.00	0.19	43.80	4.38	0.81	Enclosure/scrubber
PSOPS-12	Transfer from Omnicore Crushers (Bypass)															95.00%	2.40	1.20	0.34	10.51	5.26	1.49	Enclosure/scrubber
PSOPS-13	Transfer from Omnicore crushers (Return)															95.00%	2.40	1.20	0.34	10.51	5.26	1.49	Enclosure/scrubber
HFOPS-4	Conveyer to Concentrate Stacking															70.00%	0.26	0.10	0.03	1.13	0.45	0.13	Wet process/enclosure
HFOPS-5	Concentrate Loading															25.00%	0.64	0.26	0.07	2.81	1.13	0.32	Wet process/enclosure
HFOPS-3	Stacking															70.00%	3.00	1.20	0.34	13.14	5.26	1.49	Wet process
PFOPS-9	Transfer from vibratory feeders 20-252/253/254 to Conveyor 20-251															97.00%	2.16	1.08	0.31	9.46	4.73	1.34	Enclosure/scrubber
PFOPS-10	Transfer from 20-251 (42" Conveyer) to 20-255 (36" conveyer)															90.00%	7.20	3.60	1.02	31.54	15.77	4.46	Scrubber
PFOPS-14	Concentrate Filter Press to Conveyer															100.00%	-	-	-	-	-	-	Fully enclosed
PFOPS-16	Lime loading to Lime Bin (Pneumatic)															99.00%	0.01	0.01	0.01	0.06	0.06	0.06	Baghouse
PFOPS-17	Lime Bin to Feeder															97.50%	0.13	0.13	0.13	0.55	0.55	0.55	Enclosure/Baghouse
PFOPS-18	Belt Drop to Ball Mill															97.50%	0.13	0.13	0.13	0.55	0.55	0.55	Enclosure/Baghouse
PFOPS-19	Lime Ball Mill															95.00%	0.25	0.25	0.25	1.10	1.10	1.10	Baghouse
PFOPS-20	Concentrator: Ball mills, flotation, thickening, various conveyors															70.00%	-	-	-	-	-	-	Wet process

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)
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Facility-wide PTE Stack Emissions (as provided in Title V Permit Summary)	568.0	381.1	93.5	367.7	221.0	55.0	11.5

Number	Emissions Source/Activity	Uncontrolled Emissions														Control	Controlled Emissions						
		(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	Control Device
	Handling Fugitives	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	
HFOPM-1	Mission Transfers																						
HFOPM-2	Mission Transfers																						
HFOPM-3	Mission Transfers																						
HFOPM-4	Mission Transfers																						
HFOPM-5	Mission Transfers	**CALCULATIONS FOR HANDLING FUGITIVES HAVE BEEN INCORPORATED INTO INDIVIDUAL CIRCUITS**																					
HFOPN-1	North Transfers																						
HFOPN-2	North Transfers																						
HFOPS-1	South Transfers																						
HFOPS-2	South Transfers																						
HFOPS-3	South Transfers																						
	Deposition Activities	145.76	23.10	8.69	-	-	-		638.42	101.18	38.05	-	-	-	-		-	-		-	-	-	
WFOPM-1	Mission Coarse Ore	0.04	0.04	0.04					0.161	0.161	0.161												None
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	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		3.28	2.50	1.63	14.37	10.94	7.13	
SSMP-1	SSMP-1 Wet Ducon 21 Scrubber; Loading, Packaging															90%	1.97	1.20	0.34	8.63	5.26	1.49	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								None
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 Packagining															90%	0.01	0.01	0.00	0.05	0.03	0.01	Scrubber
n/a	Moly Plant Wet Scrubber																1.29	1.29	1.29	5.63	5.63	5.63	Scrubber
	Petroleum Storage Tanks	-	-	-	-	-	-	0.84	-	-	-	-	-	-	3.66		-	-	-	-	-	-	
n/a	Gasoline storage tank (20,000 gallon)							0.76							3.31								None
n/a	Diesel storage tank (250,000 gallon)							0.07							0.30								None
n/a	Diesel storage tank (20,000 gallon)							0.01							0.02								None
n/a	Diesel storage tank (20,000 gallon)							0.01							0.01								None
n/a	Diesel storage tank (20,000 gallon)							0.01							0.02								None

MISSION MINE-2011 EMISSION INVENTORY

Mining Operations

OFMA-1 Drilling

AP-42, Table 11.9-4: Uncontrolled Particulate Emission Factor
for Open Dust Sources at Western Surface Coal Mines, October 1998

Holes Drilled 22,750 holes/yr

Emission Factors (lbs/hole)[a]

E(TSP) =	1.30	(lbs/hole)[a]
E(PM_{10}) =	0.676	(lbs/hole)[b]
E($PM_{2.5}$) =	0.039	(lbs/hole)[b]
Control Efficiency[c]	50%	

Uncontrolled Emissions						Controlled Emissions					
(lbs/hr)			(tons/yr)			(lbs/hr)			(tons/yr)		
PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5
3.4	1.8	0.1	14.8	7.7	0.4	1.7	0.9	0.1	7.4	3.8	0.2

Ore Assay

	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
mg/kg-->	2.5	6.6	0.025	1.7	13	5.2	13	500	0.025	0.9	0.5

HAP Emissions

	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se	Total
HAP Emissions (lb/hr)	4.22E-06	1.11E-05	4.22E-08	2.87E-06	2.19E-05	8.78E-06	2.19E-05	8.44E-04	4.22E-08	1.52E-06	8.44E-07	9.17E-04
HAP Emissions (tons/yr)	1.85E-05	4.88E-05	1.85E-07	1.26E-05	9.61E-05	3.84E-05	9.61E-05	3.70E-03	1.85E-07	6.65E-06	3.70E-06	4.02E-03

Notes:

[a] TSP emissions for Drilling activities are estimated using the emission factor found in AP-42 Table 11.9-4.

[b] There are no specific scaling factors to estimate PM10 emissions from drilling activities. However, using the scaling factors for Blasting activities in AP - 42 Table 11.9-1 provides conservative PM10 emissions.

[c] Dust shields and water suppression are used at the facility to control dust emissions from drilling activities. Per NIOSH, "Handbook for Dust Control in Mining," the use of water suppression during drilling activities has demonstrated control efficiencies from 9.1% to 96.3%. The use of 50% provides a conservative control efficiency for the drilling activity.

Sample Calculations

PM: [(19343) holes/yr] x [1.30 lbs/hole] x [100% - 50%] x [1 / 8760 yr/hrs] = **1.4 lbs/hr = 6.3 tons/yr**
PM10: [(19343) holes/yr] x [0.68 lbs/hole] x [100% - 50%] x [1 / 8760 yr/hrs] = **0.7 lbs/hr = 3.3 tons/yr**

MISSION MINE-2011 EMISSION INVENTORY

Mining Operations

OFMA-2 Blasting

Emissions Calculations
AP-42, Table 11.9-1: Uncontrolled Particulate Emission Factor
for Open Dust Sources at Western Surface Coal Mines, October 1998

Holes Drilled	22,750	holes/yr
Blast Pattern (max)	1,050	(26.1' x 26.1') ft^2
Total Area Blasted	23,887,500	ft^2/yr
Blasts	375	blasts/yr
Area	63,700	ft^2/blast

Particulate Emissions from Blasting

$E_{(TSP)} = 0.000014\ (A)^{1.5}$

E(TSP) =	225.080	pounds/blast[a]
$E(PM_{10})$ =	117.042	pounds/blast[a]
$E(PM_{2.5})$ =	6.752	pounds/blast[a]

Where:
E = Pounds per blast
A = Area Blasted

Uncontrolled Emissions					
(lbs/hr)			(tons/yr)		
PM	PM10	PM2.5	PM	PM10	PM2.5
9.64	5.01	0.29	42.20	21.95	1.27

Ore Assay

	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
mg/kg-->	2.5	6.6	0.025	1.7	13	5.2	13	500	0.025	0.9	0.5

HAP Emissions

	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se	Total
HAP Emissions (lb/yr)	2.41E-05	6.36E-05	2.41E-07	1.64E-05	1.25E-04	5.01E-05	1.25E-04	4.82E-03	2.41E-07	8.67E-06	4.82E-06	5.24E-03
HAP Emissions (tons/yr)	1.06E-04	2.79E-04	1.06E-06	7.17E-05	5.49E-04	2.19E-04	5.49E-04	2.11E-02	1.06E-06	3.80E-05	2.11E-05	2.29E-02

Notes:

[a] PM emissions for Blasting activities are estimated using the emission equation found in AP-42 Table 11.9-1. PM10 emissions are estimated by multiplying the PM emission factor by the scaling factor, 0.52 found in AP - 42 Table 11.9-1.

Sample Calculations
Area: [(11545 holes/yr) x (30 ft x 35 ft)] x [1 / (365 blasts/yr)] = **12,122 ft2/blast**
PM: [0.000014*(60011 ft2/blast)^1.5]* [(202 blast/yr)/(8760 hr/yr)] =**4.75 lbs/hr = 20.79 tons/yr**
PM-10: [(0.000014*(60011 ft2/blast)^1.5) * 0.52]* [(202 blast/yr)/(8760 hr/yr)] = **2.47 lbs/hr = 10.81 tons/yr**

MISSION MINE-2011 EMISSION INVENTORY

Mining Operations

OFMA-2 Blasting (Continued)

AP-42 Table 13.3-1: Detonation of Explosives

	Value	Units
Ammonium Nitrate	10,000	tons/yr
Detonation Emissions from Blasting		
E(CO)=	67.00	pounds/ton[a]
E(NO_x)=	17.00	pounds/ton[a]
E(SO_2)=	2.00	pounds/ton[a]

Uncontrolled Emissions					
(lbs/hr)			(tons/yr)		
CO	NO_X	SO_2	CO	NO_X	SO_2
76	19	2.3	335	85	10.0

Notes:

[a] CO, NOx, and SO2 emissions from detonating ANFO are estimated using the emission factors found in AP-42 Table 13.3-1.

Sample Calculations

CO: [(4376) tons/yr] x [67 lbs/ton] x [1 / 8760 yr/hrs] = **33 lbs/hr = 147 tons/yr**
NOX: [(4376) tons/yr] x [17 lbs/ton] x [1 / 8760 yr/hrs] = **8 lbs/hr = 137 tons/yr**
SO2: [(4376) tons/yr] x [2 lbs/ton] x [1 / 8760 yr/hrs] = **1.0 lbs/hr = 4.4 tons/yr**

MISSION MINE-2011 EMISSION INVENTORY

Mining Operations

CFMA-1, CFMA -2, and CFMA-3 Generators

CFMA-1 Power	500	hp
CFMA-1 Usage	250	hrs/yr
CFMA-2 Power	1100	hp
CFMA-2 Usage	4000	hrs/yr
CFMA-3 Power	2200	hp
CFMA-3 Usage	3000	hrs/yr

Emission Factors

NO_X	0.0240	lbs/hp-hr[a]
CO	0.0055	lbs/hp-hr[a]
SO_X	0.0081	lbs/hp-hr[a]
PM-10	0.0007	lbs/hp-hr[a]
VOC	0.0007	lbs/hp-hr[a]

HAP (lb/MMBtu) - Small Diesel Engines (<600 hp)
(AP-42, 3.3-2)

Benzene	9.33E-04	Naphthalene	8.48E-05	Benz(a)anthracene	1.68E-06
Toluene	4.09E-04	Acenaphthylene	5.06E-06	Chrysene	3.53E-07
Xylenes	2.85E-04	Acenaphthene	1.42E-06	Benzo(b)fluoranthene	9.91E-08
1,3-Butadiene	3.91E-05	Fluorene	2.92E-05	Benzo(k)fluoranthene	1.55E-07
Formaldehyde	1.18E-03	Phenanthrene	2.94E-05	Benzo(a)pyrene	1.88E-07
Acetaldehyde	7.67E-04	Anthracene	1.87E-06	Indeno(1,2,3-cd)pyrene	3.75E-07
Acrolein	9.25E-05	Fluoranthene	7.61E-06	Dibenz(a,h)anthracene	5.83E-07
		Pyrene	4.78E-06	Benzo(g,h,I)perylene	4.89E-07

HAP (lb/MMBtu) Large Diesel Engins (>600 hp)
(AP-42, 3.4.4)

Benzene	7.76E-04	Naphthalene	1.30E-04	Benz(a)anthracene	6.22E-07
Toluene	2.81E-04	Acenaphthylene	9.23E-06	Chrysene	1.53E-06
Xylenes	1.93E-04	Acenaphthene	4.68E-06	Benzo(b)fluoranthene	1.11E-06
Formaldehyde	7.89E-05	Fluorene	1.28E-05	Benzo(k)fluoranthene	2.18E-07
Acetaldehyde	2.52E-05	Phenanthrene	4.08E-04	Benzo(a)pyrene	2.57E-07
Acrolein	7.88E-06	Anthracene	1.23E-06	Indeno(1,2,3-cd)pyrene	4.14E-07
		Fluoranthene	4.03E-06	Dibenz(a,h)anthracene	3.46E-07
		Pyrene	3.71E-06	Benzo(g,h,I)perylene	5.56E-07

Diesel Heating Value =	124,238	Btu/gal
Gallons at rated capacity		
CFMA-1	10	gal/hr
CFMA-2	25	gal/hr
CFMA-3	45	gal/hr
Annual Operating Hours		
Annual Operating Hours, CFMA-1	250	hrs/yr
Annual Operating Hours, CFMA-2	4000	hrs/yr
Annual Operating Hours, CFMA-3	3000	hrs/yr
Annual usage (gallons)		
CFMA-1	30,000	gallons/yr
CFMA-2	0	gallons/yr
CFMA-3	135,000	gallons/yr

MISSION MINE-2011 EMISSION INVENTORY

Mining Operations

CFMA-1, CFMA -2, and CFMA-3 Generators (continued)

	Uncontrolled Emissions									
	(lbs/hr)					(tons/yr)				
	NO_X	CO	SO_X	PM-10	VOC	NO_X	CO	SO_X	PM-10	VOC
CFMA-1	0.3	0.1	0.1	0.0	0.0	1.5	0.3	0.5	0.0	0.0
CFMA-2	12.1	2.8	4.1	0.4	0.4	52.8	12.1	17.8	1.5	1.5
CFMA-3	18.1	4.1	6.1	0.5	0.5	79.2	18.2	26.7	2.3	2.3
Total	**30.5**	**7.0**	**10.3**	**0.9**	**0.9**	**133.5**	**30.6**	**45.0**	**3.9**	**3.9**

CFMA-1 (lb/hr)

Benzene	1.16E-03
Toluene	5.08E-04
Xylenes	3.54E-04
1,3-Butadiene	4.86E-05
Formaldehyde	1.47E-03
Acetaldehyde	9.53E-04
Acrolein	1.15E-04
Naphthalene	1.05E-04
Acenaphthylene	6.29E-06
Acenaphthene	1.76E-06
Fluorene	3.63E-05
Phenanthrene	3.65E-05
Anthracene	2.32E-06
Fluoranthene	9.45E-06
Pyrene	5.94E-06
Benz(a)anthracene	2.09E-06
Chrysene	4.39E-07
Benzo(b)fluoranthene	1.23E-07
Benzo(k)fluoranthene	1.93E-07
Benzo(a)pyrene	2.34E-07
Indeno(1,2,3-cd)pyrene	4.66E-07
Dibenz(a,h)anthracene	7.24E-07
Benzo(g,h,I)perylene	6.08E-07
TOTAL	0.005

CFMA-2 (lb/hr)

Benzene	2.41E-03
Toluene	8.73E-04
Xylenes	5.99E-04
Formaldehyde	2.45E-04
Acetaldehyde	7.83E-05
Acrolein	2.45E-05
Naphthalene	4.04E-04
Acenaphthylene	2.87E-05
Acenaphthene	1.45E-05
Fluorene	3.98E-05
Phenanthrene	1.27E-03
Anthracene	3.82E-06
Fluoranthene	1.25E-05
Pyrene	1.15E-05
Benz(a)anthracene	1.93E-06
Chrysene	4.75E-06
Benzo(b)fluoranthene	3.45E-06
Benzo(k)fluoranthene	6.77E-07
Benzo(a)pyrene	7.98E-07
Indeno(1,2,3-cd)pyrene	1.29E-06
Dibenz(a,h)anthracene	1.07E-06
Benzo(g,h,I)perylene	1.73E-06
TOTAL	0.006

CFMA-3 (lb/hr)

Benzene	4.34E-03
Toluene	1.57E-03
Xylenes	1.08E-03
Formaldehyde	4.41E-04
Acetaldehyde	1.41E-04
Acrolein	4.41E-05
Naphthalene	7.27E-04
Acenaphthylene	5.16E-05
Acenaphthene	2.62E-05
Fluorene	7.16E-05
Phenanthrene	2.28E-03
Anthracene	6.88E-06
Fluoranthene	2.25E-05
Pyrene	2.07E-05
Benz(a)anthracene	3.48E-06
Chrysene	8.55E-06
Benzo(b)fluoranthene	6.21E-06
Benzo(k)fluoranthene	1.22E-06
Benzo(a)pyrene	1.44E-06
Indeno(1,2,3-cd)pyrene	2.31E-06
Dibenz(a,h)anthracene	1.93E-06
Benzo(g,h,I)perylene	3.11E-06
TOTAL	0.011

MISSION MINE-2011 EMISSION INVENTORY

Mining Operations

CFMA-1, CFMA -2, and CFMA-3 Generators (continued)

CFMA-1 (tons/yr)	
Benzene	1.74E-03
Toluene	7.62E-04
Xylenes	5.31E-04
1,3-Butadiene	7.29E-05
Formaldehyde	2.20E-03
Acetaldehyde	1.43E-03
Acrolein	1.72E-04
Naphthalene	1.58E-04
Acenaphthylene	9.43E-06
Acenaphthene	2.65E-06
Fluorene	5.44E-05
Phenanthrene	5.48E-05
Anthracene	3.48E-06
Fluoranthene	1.42E-05
Pyrene	8.91E-06
Benz(a)anthracene	3.13E-06
Chrysene	6.58E-07
Benzo(b)fluoranthene	1.85E-07
Benzo(k)fluoranthene	2.89E-07
Benzo(a)pyrene	3.50E-07
Indeno(1,2,3-cd)pyrene	6.99E-07
Dibenz(a,h)anthracene	1.09E-06
Benzo(g,h,l)perylene	9.11E-07
TOTAL	**0.007**

CFMA-2 (tons/yr)	
Benzene	0.00E+00
Toluene	0.00E+00
Xylenes	0.00E+00
Formaldehyde	0.00E+00
Acetaldehyde	0.00E+00
Acrolein	0.00E+00
Naphthalene	0.00E+00
Acenaphthylene	0.00E+00
Acenaphthene	0.00E+00
Fluorene	0.00E+00
Phenanthrene	0.00E+00
Anthracene	0.00E+00
Fluoranthene	0.00E+00
Pyrene	0.00E+00
Benz(a)anthracene	0.00E+00
Chrysene	0.00E+00
Benzo(b)fluoranthene	0.00E+00
Benzo(k)fluoranthene	0.00E+00
Benzo(a)pyrene	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00
Dibenz(a,h)anthracene	0.00E+00
Benzo(g,h,l)perylene	0.00E+00
TOTAL	**0.000**

CFMA-3 (tons/yr)	
Benzene	6.51E-03
Toluene	2.36E-03
Xylenes	1.62E-03
Formaldehyde	6.62E-04
Acetaldehyde	2.11E-04
Acrolein	6.61E-05
Naphthalene	1.09E-03
Acenaphthylene	7.74E-05
Acenaphthene	3.92E-05
Fluorene	1.07E-04
Phenanthrene	3.42E-03
Anthracene	1.03E-05
Fluoranthene	3.38E-05
Pyrene	3.11E-05
Benz(a)anthracene	5.22E-06
Chrysene	1.28E-05
Benzo(b)fluoranthene	9.31E-06
Benzo(k)fluoranthene	1.83E-06
Benzo(a)pyrene	2.16E-06
Indeno(1,2,3-cd)pyrene	3.47E-06
Dibenz(a,h)anthracene	2.90E-06
Benzo(g,h,l)perylene	4.66E-06
TOTAL	**0.016**

Notes:

[a] Emissions from the combustion of diesel in the generators are estimated using emission factors found in AP-42 Table 3.4-1.

Sample Calculations

NO_x: [2200 hp] x [340 hrs/yr] x [0.0240 lbs/hp-hr] x [1 / 8760 yr/hrs] = **2.0 lbs/hr = 9.0 tons/yr**
CO: [2200 hp] x [340 hrs/yr] x [0.0055 lbs/hp-hr] x [1 / 8760 yr/hrs] = **0.05 lbs/hr = 2.1 tons/yr**
SOx:[2200 hp] x [340 hrs/yr] x [0.0081 lbs/hp-hr] x [1 / 8760 yr/hrs] = **0.7 lbs/hr = 3.0 tons/yr**
PM-10: [2200 hp] x [340 hrs/yr] x [0.00075 lbs/hp-hr] x [1 / 8760 yr/hrs] = **0.1 lbs/hr = 0.3 tons/yr**
VOC:[2200 hp] x [340 hrs/yr] x [0.0007 lbs/hp-hr] x [1 / 8760 yr/hrs] = **0.1 lbs/hr = 0.3 tons/yr**

MISSION MINE-2011 EMISSION INVENTORY

Mining Operations

VFMA-1 Haulage

AP-42, Section 13.2.2 Unpaved Roads

E = k(s/12)^a*(W/3)^b *[365-P)/365]

k	4.9	TSP
k	1.5	PM10
k	0.15	PM2.5
a	0.7	TSP
a	0.9	PM10
a	0.9	PM2.5
b	0.45	TSP
b	0.45	PM10
b	0.45	PM2.5

s surface material silt content (%) [a]=	8.4	%	
P num.of days in year with at least 0.01 in. of prec.	44	days/year	Note: Based on Tucson Weather Station 2011 Data

	Komatsu 320	*Komatsu 240*	*Terex 170*	
W = Mean Vehicle Weight	260	208	215	tons
VMT	500,000	400,000	550	miles/yr
E (TSP) =	25.00	22.62	22.95	lb/mile[a]
E (PM_{10}) =	7.13	6.45	29.04	lb/mile[a]
E ($PM_{2.5}$) =	0.71	0.64	0.65	
Control Efficiency[b]	75%			

	Uncontrolled Emissions						Controlled Emissions					
	(lbs/hr)			(tons/yr)			(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10		PM	PM10	PM2.5
Komatsu 320	1,427.17	406.81	40.68	6,251.01	1,781.83	178.18	356.8	101.70	10.17	1,562.8	445.46	44.55
Komatsu 240	1,032.66	294.36	29.44	4,523.04	1,289.28	128.93	258.16	73.59	7.36	1,130.76	322.32	32.23
Terex 170	1.44	1.82	0.04	6.31	7.99	0.18	0.36	0.46	0.01	1.58	2.00	0.04
						Total Emissions	**615.32**	**175.75**	**17.54**	**2,695.09**	**769.77**	**76.82**

Notes:

[a] PM and PM10 emissions for loading operations are estimated using the emission equation 1 found in AP-42 13.2.4-4. The appropriate particle size multiliers,k, can be found in AP-42 13.2.4-4 while the mean wind speed factor, U, and the material moisture content, M, are site specific constants.

[b] The control efficiency was estimated using calculations found in the "Watering and Control Efficiency" technical paper puplished in the Technology Transfer Network (TTN) based upon the control efficiency/moisture ratio established in AP-42 Figure 13.2.2-2 This 75% control efficiency is consistent with the watered road control efficiency accepted by Maricopa County.

Sample Calculations

Komatsu 320. Controlled Emissions

PM: [(461,149) VMT/yr] x [4.9 x (8.4 / 12)$^{0.7}$ x (260/3)$^{0.45}$ x ((365 - 41) / 365) lbs/VMT] x [100% - 75%] x [1 / 8760 yr/hrs] = **332.1 lbs/hr = 1454.8 tons/yr**

PM10: [(461,149) VMT/yr] x [1.5 x (8.4 / 12)$^{0.9}$ x (260/3)$^{0.45}$ x ((365 - 41) / 365) lbs/VMT] x [100% - 75%] x [1 / 8760 yr/hrs] = **394.36 lbs/hr = 1727.31 tons/yr**

Sample Calculations for Potential to Emit

MISSION MINE-2011 EMISSION INVENTORY

Mining Operations

Sample Calculations for Potential to Emit — **VFMA-2 Dozing**

AP-42, Table 11.9-1: Uncontrolled Open Dust Sources@ Western Surface Coal Mines
E (TSP) = 5.7(s)^1.2/(M)^1.3
E(PM10) = 0.75*(E(PM15)); PM2.5 = 0.105 (PM)

Silt Content of Road[a]	8.4	%
Moisture Content	3.5	%
Hours of Dozing	35,000	hrs/yr

E (TSP) =	14.38	lb/hr[b]
E (PM10) =	3.16	lb/hr[b]
E (PM10) =	1.51	lb/hr

	Uncontrolled Emissions					
	(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5
Total	**57.45**	**12.63**	**6.03**	**251.63**	**55.31**	**26.42**

Notes:

[a] The Silt content of the road is from AP-42 Table 13.2.2-1 for "Stone quarrying and processing haul road to/from pit."

[b] PM emissions for dozing activities are estimated using the emission equation found in AP-42 Table 11.9-1. PM10 emissions are estimated by multiplying the PM emission factor by the scaling factor, found in AP - 42 Table 11.9-1.

MISSION MINE-2011 EMISSION INVENTORY

Mining Operations

VFMA-3 Grading

AP-42, Table 11.9-1: Uncontrolled Open Dust Sources@ Western Surface Coal Mines

E (TSP) = $0.040(S)^{2.5}$

E(PM_{10}) = 0.60*(E(PM1.5)); PM2.5 = 0.031 (PM)

S=Mean Vehicle Speed	5	mph
Blading Hours	10,000	hours/yr
VMT	50,000	miles/yr
E (TSP) =	2.24	lb/mile[a]
E (PM_{10}) =	0.77	lb/mile[a]
E ($PM_{2.5}$) =	0.07	lb/mile
Control Efficiency[b]	0%	

	Uncontrolled Emissions						Controlled Emissions					
	(lbs/hr)			(tons/yr)			(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5
Total	**12.8**	**4.4**	**0.4**	**55.9**	**19.1**	**1.7**	**12.76**	**4.37**	**0.40**	**55.90**	**19.13**	**1.73**

Notes:

[a] PM emissions for grading activities are estimated using the emission equation found in AP-42 Table 11.9-1. PM10 emission are estimated by multiplying the PM emission factor by the scaling factor, found in AP - 42 Table 11.9-1.

[b] A control factor of 0% is used to provide a conservative emissions estimate from the source.

Sample Calculations

PM: [(50,000) VMT/yr] x [(0.04 x (5)2.5) lbs/VMT] x [100% - 0%] x [1 / 8760 yr/hrs] = **12.8 lbs/hr = 55.90 tons/yr**

PM10: [(50,000) VMT/yr] x [0.6 x (0.051 (5)^2.5) lbs/VMT] x [100% - 0%] x [1 / 8760 yr/hrs] = **4.4 lbs/hr = 19.31 tons/yr**

MISSION MINE-2011 EMISSION INVENTORY

Mining Operations

VFMA-4 Rubber Tire Rigs

Rubber Tire Dozers
AP-42, Section 13.2.2 Unpaved Roads

E = k(s/12)^a*(W/3)^b *[365-P)/365]

k	4.9	TSP
k	1.5	PM10
k	0.15	PM2.5
a	0.7	TSP
a	0.9	PM10
a	0.9	PM2.5
b	0.45	TSP
b	0.45	PM10
b	0.45	PM2.5

s surface material silt content (%) =	8.4	%	
P num.of days in year with at least 0.01 in. of prec.	44	days/year	Note: Based on Tucson Weather Station 2011 Data

	Rubber Tire Dozers	*Water Trucks*	
W = Mean Vehicle Weight	46	60	tons
VMT	60,000	275,000	miles/yr
E (TSP) =	11.47	12.93	lb/mile[a]
E (PM_{10}) =	3.27	16.35	lb/mile[a]
E ($PM_{2.5}$) =	0.33	0.37	
Control Efficiency[b]	75%	75%	

	Uncontrolled Emissions						Controlled Emissions					
	(lbs/hr)			(tons/yr)			(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5
Rubber Tire Dozers	78.55	22.39	2.24	344	98	10	19.64	5.60	0.56	86.02	24.52	2.45
Water Trucks	405.76	513.38	11.57	1777	2249	51	101.44	128.35	2.89	444.31	562.15	12.66
Total	**484.31**	**535.77**	**13.81**	**2121.29**	**2346.68**	**60.47**	**121.08**	**133.94**	**3.45**	**530.32**	**586.67**	**15.12**

Notes:

[a] PM and PM10 emissions for loading operations are estimated using the emission equation 1a found in AP-42 13.2.2. The appropriate particle size multiliers,k, can be found in AP-42 13.2.2-4 while the mean wind speed factor, U, and the material moisture content, M, are site specific constants.

[b] The control efficiency was estimated using calculations found in the "Watering and Control Efficiency" technical paper puplished in the Technology Transfer Network (TTN) based upon the control efficiency/moisture ratio established in AP-42 Figure 13.2.2-2 This 75% control efficiency is consistent with the watered road control efficiency accepted by Maricopa County.

Sample Calculations
Rubber Tire Dozers. Controlled Emissions
PM: [(13945) VMT/yr] x [4.9 x (8.4 / 12)$^{0.7}$ x (46/3)$^{0.45}$ x ((365 - 41) / 365) lbs/VMT] x [100% - 75%] x [1 / 8760 yr/hrs] = **4.61 lbs/hr = 20.18 tons/yr**
PM10: [(13,945) VMT/yr] x [1.5 x (8.4 / 12)$^{0.9}$ x (46/3)$^{0.45}$ x ((365 - 41) / 365) lbs/VMT] x [100% - 75%] x [1 / 8760 yr/hrs] = **5.47 lbs/hr = 23.96 tons/yr**

MISSION MINE-2011 EMISSION INVENTORY

Mining Operations

VFMA-5 Land Clearing

Topsoil Removed	20,000,000	tons/yr
Topsoil Unloaded	20,000,000	tons/yr

Topsoile Removed by Scraper

E (TSP) =	0.058	lb/ton[a]
E (PM_{10}) =	0.058	lb/ton[b]
E ($PM_{2.5}$) =	0.00609	lb/ton

Scraper Unloading

E (TSP) =	0.04	lb/ton[c]	
E (PM_{10}) =	0.040	lb/ton[b]	
E ($PM_{2.5}$) =	0.0042	lb/ton	(Assumed to be 0.0105 of PM for overburden, AP-42, Table 11.9.1)

	Uncontrolled Emissions					
	(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5
Topsoil Removal	132.42	132.42	13.90	580.00	580.00	60.90
Topsoil Unloading	91.32	91.32	9.59	400.00	400.00	42.00
Total	**223.74**	**223.74**	**23.49**	**980.00**	**980.00**	**102.90**

Notes:

[a] The TSP emissions are estimated using the emission factor found in AP-42 Table 11.9-4 for "Topsoil removal by scraper."

[b] There are no PM10 emission factors or scaling factors provided in AP-42 for this type of activity. PM10 is assumed to be equivalent to TSP emissions in order to provide a conservative emissions estimate.

[c] The TSP emissions are estimated using the emission factor found in AP-42 Table 11.9-4 for "Scraper unloading (batch drop)."

Sample Calculations

Top Soil Removed by Scraper

PM: [653000 tons/yr] x [0.058 lbs/ton] x [1 / 8760 yr/hrs] = **4.32 lbs/hr = 18.94 tons/yr**

PM10: [653000 tons/yr] x [(0.058 lbs/ton] x [1 / 8760 yr/hrs] = **4.32 lbs/hr = 18.94 tons/yr**

MISSION MINE-2011 EMISSION INVENTORY

Mining Operations

VFMA-6 Miscellaneous Vehicle Traffic

AP-42, Section 13.2.2 Unpaved Roads

E = k(s/12)^a*(S/30)^d /(M/0.5^c)*[365-P)/365]

k	6	TSP
k	1.8	PM10
k	0.18	PM2.5
a	1	TSP
a	1	PM10
a	1	PM2.5
c	0.3	TSP
c	0.2	PM10
c	0.2	PM2.5
d	0.3	TSP
d	0.5	PM10
d	0.5	PM2.5

s = surface material silt content (%) [a]=	8.4	%
P = num.of days in year with at least 0.01 in. of prec.	44	days/year
S = Mean Vehicle Speed	10	mph
M = Surface (Road) Material Moisture Content	3.5	%

	Pickups	
W = Mean Vehicle Weight	2	tons
VMT	1,000,000	miles/yr
E (TSP) =	3.09	lb/mile[a]
E (PM_{10}) =	0.50	lb/mile[a]
E ($PM_{2.5}$) =	0.05	lb/mile[a]

Control Efficiency[b] 75%

	Uncontrolled Emissions						Controlled Emissions					
	(lbs/hr)			(tons/yr)			(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5
Total	**353**	**57**	**6**	**1545**	**252**	**25**	**88.2**	**14.4**	**1.4**	**386.2**	**62.9**	**6.3**

Notes:

[a] PM and PM10 emissions for loading operations are estimated using the emission equation 1b found in AP-42 13.2.2. The appropriate particle size multiliers,k, can be found in AP-42 13.2.4-4 while the mean speed factor, S, and the material moisture content, M, are site specific constants.

[b] The control efficiency was estimated using calculations found in the "Watering and Control Efficiency" technical paper puplished in the Technology Transfer Network (TTN) based upon the control efficiency/moisture ratio established in AP-42 Figure 13.2.2-2 This 75% control efficiency is consistent with the watered road control efficiency accepted by Maricopa County.

Sample Calculations for Potential to Emit

Sample Calculations

PM: [(327,000) VMT/yr] x [6 x (8.4 / 12)^ 1 x (10 / 30)^0.3 /(3.4/0.5)^0.3] x ((365 - 41) / 365) lbs/VMT] x [100% - 75%] x [1 / 8760 yr/hrs] = **29.1 lbs/hr = 127.5 tons/yr**

PM10:[(327,000) VMT/yr] x [1.8 x (8.4 / 12)^ 1 x (10 / 30)^0.5 /(3.4/0.5)^0.2] x ((365 - 41) / 365) lbs/VMT] x [100% - 75%] x [1 / 8760 yr/hrs] = **4.7 lbs/hr = 20.8 tons/yr**

MISSION MINE-2011 EMISSION INVENTORY

Mining Operations

Notes			HFMA-1 Unloading Overburden
AP-42, Table 13.2.4.3			
E = k(0.0032)((U/5)^1.3/(M/2)^1.4)			
k = Particle size Multiplier	0.74	TSP	
k = Particle size Multiplier	0.35	PM10	
k = Particle size Multiplier	0.053	PM2.5	
U = Mean Wind Speed	6.8	miles/hr	(Based on Tucson 2011 Weather Station Data)
M = Material Moisture Content (%)	2.6	%	
Overburden Unloaded	128,615,469	tons/yr	

E(TSP) =	0.00202	lb/ton[a]	
E(PM_{10}) =	0.00095	lb/ton[a]	
E($PM_{2.5}$) =	0.00014	lb/ton[a]	(Assumed to be 0.0105 of PM for overburden, AP-42, Table 11.9.1)

	Uncontrolled Emissions					
	(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5
Total	**29.61**	**14.01**	**2.12**	**129.71**	**61.35**	**9.29**

Notes:
[a] TSP and PM10 emissions for transferring activities are estimated using the emission factor equation 1 and the recommended scaling factors found in AP-42 Table 13.2.4.3.

Sample Calculations
PM: [(36,506000) tons/yr] x [(0.74 x 0.0032 x (2.9 / 5)$^{1.3}$ x (1 / (2.6 / 2)$^{1.4}$)) lbs/ton x [1 / 8760 yr/hrs] = **3.58 lbs/hr = 15.70 tons/yr**
PM10: [(36,506000) tons/yr] x [0.35 x 0.0032 x (4.1 / 5)$^{1.3}$ x (1 / (2.6 / 2)$^{1.4}$) lbs/ton] x [1 / 8760 yr/hrs] = **1.7 lbs/hr = 7.43 tons/yr**

Notes

MISSION MINE 2011 EMISSION INVENTORY

Mission Circuit

Mission Circuit

MISSIONS CIRCUIT DETAILED EMISSIONS CALCULATIONS

PM-10/PMa	1.00		
PM2.5/PM10	0.19	Crushing operations	(Note: PM2.5/PM10 ratio are based on the South Mill Expansion application)
PM2.5/PM10	0.28	Handling operations	(Note: PM2.5/PM10 ratio are based on the South Mill Expansion application)
Annual operating hours/yr	8,760.00	hrs/yr	
Daily Maximum Throughput	55,000.00	Ton/day	
Annual - North/Mission Circuit	20,075,000.00	Ton/year	
Process Rate - North/Mission Circuit	2,291.67	Ton/hour	

Emission Unit	Controlled Emission Factor	Controlled Emissions						Controlled Emission Factor Source
		(lbs/hr)			(tons/yr)			
	(lb/ton)	PM	PM-10	PM2.5	PM	PM-10	PM2.5	
SSOPM-1; Scrubber; Primary Crusher	0.00	1.19	1.19	0.22	5.22	5.22	0.97	2008 CAM Plan
SSOPM-1; Subtotal		1.19	1.19	0.22	5.22	5.22	0.97	
SSOPM-2a; Wet Hydrostatic Precipitator; Transfer to Secondary (North)	NA	0.54	0.54	0.15	2.37	2.37	0.67	2011 Source Test
SSOPM-2b; Wet Hydrostatic Precipitator; Transfer to Secondary (South)	NA	0.13	0.13	0.04	0.57	0.57	0.16	2011 Source Test
SSOPM-2; Subtotal		0.67	0.67	0.19	2.93	2.93	0.83	
SSOPM-3; Secondary and Tertiary Crushing	NA	0.14	0.14	0.03	0.61	0.61	0.11	2011 Source Test
SSOPM-4; Secondary and Tertiary Crushing	0.00	4.51	4.51	0.84	19.77	19.77	3.66	2011 CAM Plan
SSOPM-5; Secondary and Tertiary Crushing	0.00	4.51	4.51	0.84	19.77	19.77	3.66	2011 CAM Plan
SSOPM-6; Secondary and Tertiary Crushing	0.00	4.51	4.51	0.84	19.77	19.77	3.66	2011 CAM Plan
SSOPM-7; Secondary and Tertiary Crushing	0.00	4.51	4.51	0.84	19.77	19.77	3.66	2011 CAM Plan
Secondary and Tertiary Crushing Wet Scrubber Subtotalc		13.68	13.68	2.53	59.93	59.93	11.09	
SSOPM-8; Baghouse - Transfer Ore to Tripper Car	0.00	0.33	0.33	0.09	1.44	1.44	0.41	Stack Test 3/8/2010
SSOPM-9; Baghouse; Transfer to Fine Ore Bin	0.00	0.05	0.05	0.01	0.20	0.20	0.06	Stack Test 3/8/2010
SSOPM-10; Baghouse; Transfer to Fine Ore Bin	0.00	0.03	0.03	0.01	0.14	0.14	0.04	Stack Test 3/8/2010
SSOPM-11; Baghouse; Transfer to Fine Ore Bin	0.00	0.05	0.05	0.01	0.20	0.20	0.06	Stack Test 3/8/2010
SSOPM-12; Baghouse; Transfer to Fine Ore Bin	0.00	0.05	0.05	0.02	0.23	0.23	0.07	Stack Test 3/8/2010
SSOPM-13; Baghouse; Transfer to Fine Ore Bin	0.00	0.15	0.15	0.04	0.67	0.67	0.19	Stack Test 3/8/2010
Tripper Car Baghouse Subtotal		0.44	0.44	0.12	1.91	1.91	0.54	
SSOPM-14; Scrubber; Transfer to Rod Mill	0.00	0.46	0.46	0.13	2.01	2.01	0.57	Stack test 6/4/97,7/11/97
SSOPM-15; Scrubber; Transfer to Rod Mill	0.00	0.46	0.46	0.13	2.01	2.01	0.57	Stack test 6/4/97, 7/11/97
SSOPM-16; Scrubber; Transfer to Rod Mill	0.00	0.46	0.46	0.13	2.01	2.01	0.57	Stack test 6/4/97, 7/11/97
Rod Mill Scrubber System Subtotal		1.37	1.37	0.39	6.02	6.02	1.70	
	SUBTOTAL	**17.35**	**17.35**	**3.45**	**76.01**	**76.01**	**15.13**	

MISSION MINE 2011 EMISSION INVENTORY

Mission Circuit

Mission Circuit (continued)

ORE ASSAY										
Sb (mg/kg)	As (mg/kg)	Be (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Pb (mg/kg)	Mn (mg/kg)	Hg (mg/kg)	Ni (mg/kg)	Se (mg/kg)
2.50	6.60	0.03	1.70	13.00	5.20	13.00	500.00	0.03	0.90	0.50

Emission Unit	HAP Emissions (lb/hr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
SSOPM-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-2a	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-2b	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**

MISSION MINE 2011 EMISSION INVENTORY

Mission Circuit

Mission Circuit (continued)

Emission Unit	HAP Emissions (ton/yr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
SSOPM-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-2a	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-2b	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
SSOPM-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
SSOPM-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
SSOPM-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
SSOPM-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00

Notes:

a PM10 emissions are assumed to be equivalent to PM emissions in order to provide a conservative emissions estimate.

b Scrubbers are rotated every 30-days. For estimating PTE emissions, assumed that each scrubber operation continuously for 8,760 hours.

c According to the proposed Continuous Assurance Monitoring (CAM) Plan submitted to Pima County in 2011, standard operating practices states that three of the four scrubbers operate at any given time. Because of this operating scenario, actual emissions from the scrubber systemare estimated by summing the total emissions from the four scrubbers and multiplying by a factor of 75% to account for the CAM operating scenario.

MISSION MINE 2011 EMISSION INVENTORY

Mission Circuit

Mission Circuit (continued)

Source - SSOPM-17
Description - Lime Transfer
AP-42, Table 11.17-4: Lime Manufacturing Raw Material & Product Processing & Handling

Lime Throughput	78.00	tons/day
E (TSP) =	2.20	lb/ton
E (PM10) =	2.20	lb/ton
Number of Transfer Points SSOPM-17a	4.00	

SSOPM-17 Controlled Efficiency (Baghouse 328-E6) = 99%

Source - SSOPM-18
Description - Lime Transfer
AP-42, Table 11.17-4: Lime Manufacturing Raw Material & Product Processing & Handling

Lime Throughput	78.00	tons/day
E (TSP) =	2.20	lb/tona
E (PM10) =	2.20	lb/tona

SSOPM-18 Controlled Efficiency = -

Source - SSOPM-19
Description - Secondary Crusher Transfer Point
AP-42, Table 11.24-2: Material Handling and Transfer

Ore Throughput =	55,000.00	tons/day
E (TSP) =	0.12	lb/ton
E (PM10) =	0.06	lb/ton

Controlled with scrubber (309-100) = 95%

Source - HFOPM-1
Description - Transfer Point of Ore into Apron Feeders (M303-E4 and M303-E5) for Primary Crusher
AP-42, Table 11.24-2: Material Handling and Transfer

Ore Throughput	55,000.00	tons/day
E (TSP) =	0.12	lb/ton
E (PM10) =	0.06	lb/ton

Controlled with enclosure and water sprays = 75%

MISSION MINE 2011 EMISSION INVENTORY

Mission Circuit

Mission Circuit (continued)

Source - HFOPM-2
Description - Transfer Point of Crushed Ore onto Coarse Ore Strage Pile
AP-42, Table 11.24-2: Material Handling and Transfer

Ore Throughput	55,000.00	tons/day
E (TSP) =	0.12	lb/ton
E (PM10) =	0.06	lb/ton
Controlled with water sprays/dust suppresant =	75%	

Source - HFOPM-3
Description - Transfer Point of Conc. Prod.
AP-42, Table 11.24-2: Material Handling and Transfer

Conc. Prod. Throughput	1,100.00	tons/day
E (TSP) =	0.01	lb/tonb
E (PM10) =	0.004	lb/tonb
Control=	-	

Source - HFOPM-4
Description - Transfer Point of Conc. Prod.
AP-42, Table 11.24-2: Material Handling and Transfer

Ore Throughput	1,100.00	tons/day
E (TSP) =	0.01	lb/tonb
E (PM10) =	0.004	lb/tonb
Control=	-	

MISSION MINE 2011 EMISSION INVENTORY

Mission Circuit

Mission Circuit (continued)

Emission Unit	Uncontrolled Emissions						Controlled Emissions					
	(lbs/hr)	(lbs/hr)	(lbs/hr)	(tons/yr)	(tons/yr)	(tons/yr)	(lbs/hr)	(lbs/hr)	(lbs/hr)	(tons/yr)	(tons/yr)	(tons/yr)
	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5
SSOPM-17	28.60	28.60	8.09	125.27	125.27	35.45	0.29	0.29	0.08	1.25	1.25	0.35
SSOPM-18	7.15	7.15	2.02	31.32	31.32	8.86	7.15	7.15	2.02	31.32	31.32	8.86
SSOPM-19	275.00	137.50	38.91	1,204.50	602.25	170.44	13.75	6.88	1.95	60.23	30.11	8.52
HFOPM-1	275.00	137.50	25.44	1,204.50	602.25	111.42	68.75	34.38	6.36	301.13	150.56	27.85
HFOPM-2	275.00	137.50	38.91	1,204.50	602.25	170.44	68.75	34.38	9.73	301.13	150.56	42.61
HFOPM-3	0.46	0.18	0.05	2.01	0.80	0.23	0.46	0.18	0.05	2.01	0.80	0.23
HFOPM-4	0.46	0.18	0.05	2.01	0.80	0.23	0.46	0.18	0.05	2.01	0.80	0.23
						SUBTOTAL	**159.60**	**83.43**	**20.24**	**699.06**	**365.41**	**88.66**

Ore Assay										
Sb (mg/kg)	As (mg/kg)	Be (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Pb (mg/kg)	Mn (mg/kg)	Hg (mg/kg)	Ni (mg/kg)	Se (mg/kg)
2.50	6.60	0.03	1.70	13.00	5.20	13.00	500.00	0.03	0.90	0.50

Emission Unit	HAP Emissions (lb/hr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
SSOPM-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
HFOPM-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00
HFOPM-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00
HFOPM-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFOPM-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.08**	**0.00**	**0.00**	**0.00**

MISSION MINE 2011 EMISSION INVENTORY

Mission Circuit

Mission Circuit (continued)

Emission Unit	HAP Emissions (ton/yr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
SSOPM-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPM-18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
SSOPM-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00
HFOPM-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00
HFOPM-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00
HFOPM-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFOPM-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.35**	**0.00**	**0.00**	**0.00**

Sample Calculations for Potential to Emit

SSOPM-3: PM: [(30110) tons/day] x [0.01 lbs/ton] x [100% - 70%] x [(1 / 24) days/hr] = 3.76 lbs/hr = 5.42 tons

SSOPM-3: PM10: [(30110) tons/day] x [0.004 lbs/ton] x [100% - 70%] x [(1 / 24) days/hr] = 1.51 lbs/hr = 0.16 tons/yr

Notes:

a There are 4 transfer points found in SSOPM-17 transfer area. Therefore, emissions are calculated by multiplying the emission factor by the daily lime throughput by 4.

b PM and PM10 emission factors associated with transferring crushed ore can be found in AP-42 Table 11.24-2. Emission factors used reflect the high moisture content of the concentrate product.

c SSOPM-19c transfers the concentrated prod while SSOPM-19d transfers the remaining 10%

MISSION MINE 2011 EMISSION INVENTORY

North Circuit

NORTH CIRCUIT DETAILED EMISSIONS CALCULATIONS

PM-10/PM[a]	100%		
PM2.5/PM10	0.19	Crushing operations	(Note: PM2.5/PM10 ratio are based on the South Mill Expansion application)
PM2.5/PM10	0.28	Handling operations	(Note: PM2.5/PM10 ratio are based on the South Mill Expansion application)
hours/yr	8760		
Daily - North/Mission Circuit	15,000	ton/day	
Annual - North/Mission Circuit	5,475,000	Ton/year	(Note: This accounts for throughput for the 13 and 14 Ball Mills. SSOPN-7 controls emissions for these)
Process Rate - North/Mission Circuit	625	Ton/hour	two ball mills).

Emission Unit	Controlled Emission Factor	Controlled Emissions						Controlled Emission Factor Source
		(lbs/hr)			(tons/yr)			
	(lb/ton)	PM	PM-10	PM2.5	PM	PM-10	PM2.5	
SSOPN-1; Scrubbers Primary and Secondary	0.00865	0.23	0.23	0.04	23.68	23.68	4.38	2008 CAM Plan
SSOPN-2; Scrubbers Primary and Secondary	0.00865	0.23	0.23	0.04	23.68	23.68	4.38	2008 CAM Plan
SSOPN-3; Scrubbers Primary and Secondary	0.00865	0.23	0.23	0.04	23.68	23.68	4.38	2008 CAM Plan
Primary and Secondary Crushing Wet Scrubber Subtotal		***0.68***	***0.68***	***0.13***	***71.04***	***71.04***	***13.14***	
SSOPN-6; Baghouse; Transfer to Fine Ore Bin	0.00053	0.01	0.01	0.00	1.45	1.45	0.41	Stack Test on 8/15/08
SSOPN-6 Subtotal		***0.01***	***0.01***	***0.00***	***1.45***	***1.45***	***0.41***	
SSOPN-7; Scrubber; Transfer to Ball Mills	0.00220	0.06	0.06	0.02	6.03	6.03	1.71	Stack Test on 5/21/08
SSOPN-7 Subtotal		***0.06***	***0.06***	***0.02***	***6.03***	***6.03***	***1.71***	
SUBTOTAL		**0.75**	**0.75**	**0.15**	**78.51**	**78.51**	**15.26**	

MISSION MINE 2011 EMISSION INVENTORY

North Circuit (continued)

ORE ASSAY										
Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
2.5	6.6	0.025	1.7	13	5.2	13	500	0.025	0.9	0.5

Emission Unit	HAP Emissions (lb/hr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
SSOP-1	5.63E-07	1.49E-06	5.63E-09	3.83E-07	2.93E-06	1.17E-06	2.93E-06	1.13E-04	5.63E-09	2.03E-07	1.13E-07
SSOPN-2	5.63E-07	1.49E-06	5.63E-09	3.83E-07	2.93E-06	1.17E-06	2.93E-06	1.13E-04	5.63E-09	2.03E-07	1.13E-07
SSOPN-3	5.63E-07	1.49E-06	5.63E-09	3.83E-07	2.93E-06	1.17E-06	2.93E-06	1.13E-04	5.63E-09	2.03E-07	1.13E-07
SSOPN-6	3.44E-08	9.08E-08	3.44E-10	2.34E-08	1.79E-07	7.15E-08	1.79E-07	6.88E-06	3.44E-10	1.24E-08	6.88E-09
SSOPN-7	1.43E-07	3.78E-07	1.43E-09	9.75E-08	7.45E-07	2.98E-07	7.45E-07	2.87E-05	1.43E-09	5.16E-08	2.87E-08
SUBTOTAL	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0004**	**0.0000**	**0.0000**	**0.0000**

Emission Unit	HAP Emissions (ton/yr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
SSOP-1	5.92E-05	1.56E-04	5.92E-07	4.03E-05	3.08E-04	1.23E-04	3.08E-04	1.18E-02	5.92E-07	2.13E-05	1.18E-05
SSOPN-2	5.92E-05	1.56E-04	5.92E-07	4.03E-05	3.08E-04	1.23E-04	3.08E-04	1.18E-02	5.92E-07	2.13E-05	1.18E-05
SSOPN-3	5.92E-05	1.56E-04	5.92E-07	4.03E-05	3.08E-04	1.23E-04	3.08E-04	1.18E-02	5.92E-07	2.13E-05	1.18E-05
SSOPN-6	3.61E-06	9.54E-06	3.61E-08	2.46E-06	1.88E-05	7.52E-06	1.88E-05	7.23E-04	3.61E-08	1.30E-06	7.23E-07
SSOPN-7	1.51E-05	3.98E-05	1.51E-07	1.02E-05	7.84E-05	3.13E-05	7.84E-05	3.01E-03	1.51E-07	5.43E-06	3.01E-06
SUBTOTAL	**0.0002**	**0.0005**	**0.0000**	**0.0001**	**0.0010**	**0.0004**	**0.0010**	**0.0393**	**0.0000**	**0.0001**	**0.0000**

Notes:

[a] PM10 emissions are assumed to be equivalent to PM emissions in order to provide a conservative emissions estimate.

MISSION MINE 2011 EMISSION INVENTORY

North Circuit (continued)

Source - SSOPN-4
Description - Norblo Dust Collector 361-46

Ore throughput =	5,475,000	ton/yr
E (TSP) =	0.12	lb/ton[a]
E (PM10) =	0.06	lb/ton[a]
Controlled (Dust collector) =	99%	

Source - SSOPN-5
Description - Ore Transfer to Tertiary Crushing
AP-42, Table 11.24-2: Emission Factors for Metallic Minerals Processing

Ore Throughput	5,475,000	tons/yr
E (TSP) =	0.12	lb/ton[a]
E (PM_{10}) =	0.06	lb/ton[a]
Controlled (Water spray) =	70%	

Source - HFOPN-1
Description - Ore Transfer Primary Crusher
AP-42, Table 11.24-2: Emission Factors for Metallic Minerals Processing

Ore Throughput	5,475,000	tons/yr
E (TSP) =	0.12	lb/ton[a]
E (PM_{10}) =	0.06	lb/ton[a]
Controlled (Water spray) =	70%	

Source - HFOPN-2
Description - Ore Transfer to Tertiary Crushing
AP-42, Table 11.24-2: Emission Factors for Metallic Minerals Processing

Ore Throughput	5,475,000	tons/yr
E (TSP) =	0.12	lb/ton[a]
E (PM_{10}) =	0.06	lb/ton[a]
Controlled (Water spray) =	70%	

MISSION MINE 2011 EMISSION INVENTORY

North Circuit (continued)

	Uncontrolled Emissions						Controlled Emissions					
	(lbs/hr)			(tons/yr)			(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5
SSOPN-4	75.00	37.50	10.61	328.50	164.25	46.48	0.75	0.38	0.11	3.29	1.64	0.46
SSOPN-5	75.00	37.50	10.61	328.50	164.25	46.48	22.50	11.25	3.18	98.55	49.28	13.94
HFOPN-1	75.00	37.50	10.61	328.50	164.25	46.48	22.50	11.25	3.18	98.55	49.28	13.94
HFOPN-2	75.00	37.50	10.61	328.50	164.25	46.48	22.50	11.25	3.18	98.55	49.28	13.94
						Subtotal	**68.3**	**34.1**	**9.7**	**298.9**	**149.5**	**42.3**

ORE ASSAY										
Sb (mg/kg)	As (mg/kg)	Be (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Pb (mg/kg)	Mn (mg/kg)	Hg (mg/kg)	Ni (mg/kg)	Se (mg/kg)
2.5	6.6	0.025	1.7	13	5.2	13	500	0.025	0.9	0.5

Emission Unit	HAP Emissions (lb/hr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
SSOPN-4	1.88E-06	4.95E-06	1.88E-08	1.28E-06	9.75E-06	3.90E-06	9.75E-06	3.75E-04	1.88E-08	6.75E-07	3.75E-07
SSOPN-5	5.63E-05	1.49E-04	5.63E-07	3.83E-05	2.93E-04	1.17E-04	2.93E-04	1.13E-02	5.63E-07	2.03E-05	1.13E-05
HFOPN-1	5.63E-05	1.49E-04	5.63E-07	3.83E-05	2.93E-04	1.17E-04	2.93E-04	1.13E-02	5.63E-07	2.03E-05	1.13E-05
HFOPN-2	5.63E-05	1.49E-04	5.63E-07	3.83E-05	2.93E-04	1.17E-04	2.93E-04	1.13E-02	5.63E-07	2.03E-05	1.13E-05
SUBTOTAL	**0.0002**	**0.0005**	**0.0000**	**0.0001**	**0.0009**	**0.0004**	**0.0009**	**0.0341**	**0.0000**	**0.0001**	**0.0000**

Emission Unit	HAP Emissions (ton/yr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
SSOPN-4	8.21E-06	2.17E-05	8.21E-08	5.58E-06	4.27E-05	1.71E-05	4.27E-05	1.64E-03	8.21E-08	2.96E-06	1.64E-06
SSOPN-5	2.46E-04	6.50E-04	2.46E-06	1.68E-04	1.28E-03	5.12E-04	1.28E-03	4.93E-02	2.46E-06	8.87E-05	4.93E-05
HFOPN-1	2.46E-04	6.50E-04	2.46E-06	1.68E-04	1.28E-03	5.12E-04	1.28E-03	4.93E-02	2.46E-06	8.87E-05	4.93E-05
HFOPN-2	2.46E-04	6.50E-04	2.46E-06	1.68E-04	1.28E-03	5.12E-04	1.28E-03	4.93E-02	2.46E-06	8.87E-05	4.93E-05
SUBTOTAL	**0.0007**	**0.0020**	**0.0000**	**0.0005**	**0.0039**	**0.0016**	**0.0039**	**0.1495**	**0.0000**	**0.0003**	**0.0001**

MISSION MINE 2011 EMISSION INVENTORY

North Circuit (continued)

Source - Emissions from use of Touch n Seal during Railcar Loading

Annual usage =	54	boxes (Annual usage in 2011 was 54 boxes)
Material per box =	50	pounds per box
Percent volatile =	1%	(Assumption based on chemical/application method/reaction/usage. Manufacturer MSDS)
Percent of MDI (HAP) (by weight) =	60%	by weight

Note: MDI emissions into the atmosphere are calculed using the conservative assumption that all MDI within the material volatalizes into the atmosphere.

VOC (lb/hr) =	0.00	pounds/hr	MDI (lb/hr) =	1.85E-03	pounds/hr
VOC (tons/yr) =	0.0135	tons/yr	MDI (tons/yr) =	8.10E-03	tons/yr

Source - Ammonium Nitrate Silo Loading and Unloading Operations

Ammonium nitrate annual throughput =	9,928	tons/year	Note: Total ammonium Nitrate used in 2011 (Including the SX facilities)
Ammonkum nitrate throughput (North Circuit Silos) =	4,964	tons/yr	

Emissions Calculations

AP-42, Table 13.2.4.3: Aggregate Handling and Storage Piles

E = k(0.0032)((U/5)^1.3/(M/2^1.4)

k =	0.74	TSP
k =	0.35	PM10
k =	0.053	PM2.5
U =	6.8	mean wind speed (mph)[a]
M (MSDS) =	0.3	moisture (%)[a]
E(TSP) =	0.05029	lb/tn
E(PM10) =	0.02378	lb/tn

Assuming a total of 2 batch drop operations as follows:

(1) Batch drop into silo (2) Batch drop onto truck from transport

Emission factor multiplication based on batch drops =	2	batch drops
E(TSP) =	0.10057	lb/ton
E(PM10) =	0.04757	lb/ton

	Uncontrolled Emissions					
	(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5
	0.0570	0.0270	0.0270	0.2496	0.1181	0.1181
Subtotal	**0.0570**	**0.0270**	**0.0270**	**0.2496**	**0.1181**	**0.1181**

MISSION MINE 2011 EMISSION INVENTORY

South Circuit Pre Expansion

SOUTH CIRCUIT DETAILED EMISSIONS CALCULATIONS

PM-10/PM[a]	100%		
PM2.5/PM10	0.19	Crushing operations	(Note: PM2.5/PM10 ratio are based on the South Mill Expansion application)
PM2.5/PM10	0.28	Handling operations	(Note: PM2.5/PM10 ratio are based on the South Mill Expansion application)
hours/yr	8760		
Daily -South Circuit	48,000	ton/day	
Annual -South Circuit	17,520,000	ton/year	
Process Rate - South Circuit	2,000	Ton/hour	

Emission Unit	Controlled Emission Factor	Flowrate	Controlled Emissions						Controlled Emission Factor Source
			(lbs/hr)			(tons/yr)			
	(lb/ton)	(dscf/hr)	PM	PM-10	PM2.5	PM	PM-10	PM2.5	
SSOPS-1 Wet Ducon 96 Scrubber; Primary Crushing[b]	0.00012	471,461	0.24	0.24	0.04	1.051	1.05	0.19	Stack Test on 7/17/08
SSOPS-2 Wet Ducon 42 Scrubber; Transfer to Stacker[c]	0.00001	243,503	0.02	0.02	0.01	0.107	0.11	0.03	Stack Test on 7/18/08
SSOPS-3; Scrubber; Transfer to SAG Mill[c]	0.00010	583,920	0.20	0.20	0.06	0.865	0.86	0.24	Stack Test on 7/16/08
SSOPS-4; Scrubber; Transfer to Secondary Crusher[c]	0.01014	887,421	20.27	20.27	5.74	88.791	88.79	25.13	Stack Test on 8/14/08
		SUBTOTAL	**20.73**	**20.73**	**5.84**	**90.81**	**90.81**	**25.60**	

South Circuit Pre Expansion (Continued)

ORE ASSAY										
Sb (mg/kg)	As (mg/kg)	Be (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Pb (mg/kg)	Mn (mg/kg)	Hg (mg/kg)	Ni (mg/kg)	Se (mg/kg)
2.5	6.6	0.025	1.7	13	5.2	13	500	0.025	0.9	0.5

Emission Unit	HAP Emissions (lb/hr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
SSOPS-1	6.00E-07	1.58E-06	6.00E-09	4.08E-07	3.12E-06	1.25E-06	3.12E-06	1.20E-04	6.00E-09	2.16E-07	1.20E-07
SSOPS-2	6.09E-08	1.61E-07	6.09E-10	4.14E-08	3.17E-07	1.27E-07	3.17E-07	1.22E-05	6.09E-10	2.19E-08	1.22E-08
SSOPS-3	4.93E-07	1.30E-06	4.93E-09	3.36E-07	2.57E-06	1.03E-06	2.57E-06	9.87E-05	4.93E-09	1.78E-07	9.87E-08
SSOPS-4	5.07E-05	1.34E-04	5.07E-07	3.45E-05	2.64E-04	1.05E-04	2.64E-04	1.01E-02	5.07E-07	1.82E-05	1.01E-05
SUBTOTAL	**0.0001**	**0.0001**	**0.0000**	**0.0000**	**0.0003**	**0.0001**	**0.0003**	**0.0104**	**0.0000**	**0.0000**	**0.0000**

Emission Unit	HAP Emissions (ton/yr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
SSOPS-1	2.63E-06	6.94E-06	2.63E-08	1.79E-06	1.37E-05	5.47E-06	1.37E-05	5.26E-04	2.63E-08	9.46E-07	5.26E-07
SSOPS-2	2.67E-07	7.04E-07	2.67E-09	1.81E-07	1.39E-06	5.55E-07	1.39E-06	5.33E-05	2.67E-09	9.60E-08	5.33E-08
SSOPS-3	2.16E-06	5.71E-06	2.16E-08	1.47E-06	1.12E-05	4.50E-06	1.12E-05	4.32E-04	2.16E-08	7.78E-07	4.32E-07
SSOPS-4	2.22E-04	5.86E-04	2.22E-06	1.51E-04	1.15E-03	4.62E-04	1.15E-03	4.44E-02	2.22E-06	7.99E-05	4.44E-05
SUBTOTAL	**0.0002**	**0.0006**	**0.0000**	**0.0002**	**0.0012**	**0.0005**	**0.0012**	**0.0454**	**0.0000**	**0.0001**	**0.0000**

Notes:

[a] PM10 emissions are assumed to be equivalent to PM emissions in order to provide a conservative emissions estimate.

[b] Emission Factors from this source are developed from testing performed and analyzed as part of the 2008 Continuous Assurance Monitoring (CAM) Plan.

[c] Emission Factors from this source are developed from stack testing provided in the 2008 stack tests

Source SSOPS-3a
Description - Transfer point from 36" Belt Conveyer to 48" SAG Mill Belt Conveyer
AP-42, Table 11.24-2: Material Handling and Transfer

Ore Throughput	48,000	tons/day
E (TSP) =	0.01	lb/ton[a]
E (PM10) =	0.004	lb/ton[a]
Controls: Assuming no control for the transfer point.	0%	

Source - SSOPS-5a
Description - Transfer Point of Crushed Ore
AP-42, Table 11.24-2: Material Handling and Transfer

Ore Throughput	48,000	tons/day
E (TSP) =	0.01	lb/ton[a]
E (PM10) =	0.004	lb/ton[a]
Controlled with water sprays[b] =	70%	

South Circuit Pre Expansion (Continued)

Source - SSOPS-5b
Description - Transfer Point of Crushed Ore
AP-42, Table 11.24-2: Material Handling and Transfer

Ore Throughput	48,000	tons/day
E (TSP) =	0.01	lb/ton[a]
E (PM10) =	0.004	lb/ton[a]
Controlled with water sprays[b] =	70%	

Source - SSOPS-5c
Description - Transfer Point of Conc. Prod.
AP-42, Table 11.24-2: Material Handling and Transfer

Concentrated Prod. Throughput	600	tons/day
E (TSP) =	0.01	lb/ton[a]
E (PM10) =	0.004	lb/ton[a]
Control =	0%	

Source - SSOPS-6
Description - Lime Loading into a Closed Truck
AP-42, Table 11.17-4: Lime Manufacturing Raw Material & Product Processing & Handling

Lime Throughput	35	tons/day
E(TSP)=	0.61	lb/ton[c]
$E(PM_{10})$=	0.61	lb/ton[c]
Controlled with Baghouse 60-502[d] =	99%	

Source - SSOPS-7
Description - Lime Transfer
AP-42, Table 11.17-4: Lime Manufacturing Raw Material & Product Processing & Handling

Lime Throughput	35	tons/day
E (TSP) =	2.2	lb/ton[e]
E (PM_{10}) =	2.2	lb/ton[e]
Control efficiency =	0%	

MISSION MINE 2011 EMISSION INVENTORY

South Circuit Pre Expansion (Continued)

Emission Unit	Uncontrolled Emissions						Controlled Emissions					
	(lbs/hr)			(tons/yr)			(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5
SSOPS-3a	20.00	8.00	2.26	87.60	35.04	9.92	20.00	8.00	2.26	87.60	35.04	9.92
SSOPS-5a	20.00	8.00	2.26	87.60	35.04	9.92	6.00	2.40	0.68	26.28	10.51	2.97
SSOPS-5b	20.00	8.00	2.26	87.60	35.04	9.92	6.00	2.40	0.68	26.28	10.51	2.97
SSOPS-5c	0.25	0.10	0.03	1.10	0.44	0.12	0.25	0.10	0.03	1.10	0.44	0.12
SSOPS-6	0.89	0.89	0.89	3.90	3.90	3.90	0.01	0.01	0.01	0.04	0.04	0.04
SSOPS-7	3.21	3.21	3.21	14.05	14.05	14.05	3.21	3.21	3.21	14.05	14.05	14.05
SUBTOTAL	**44.35**	**20.20**	**8.65**	**194.24**	**88.47**	**37.91**	**15.47**	**8.12**	**4.60**	**67.75**	**35.55**	**20.17**

Ore Assay										
Sb (mg/kg)	As (mg/kg)	Be (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Pb (mg/kg)	Mn (mg/kg)	Hg (mg/kg)	Ni (mg/kg)	Se (mg/kg)
2.5	6.6	0.025	1.7	13	5.2	13	500	0.025	0.9	0.5

Emission Unit	HAP Emissions (lb/hr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
SSOPS-3a	5.00E-05	1.32E-04	5.00E-07	3.40E-05	2.60E-04	1.04E-04	2.60E-04	1.00E-02	5.00E-07	1.80E-05	1.00E-05
SSOPS-5a	1.50E-05	3.96E-05	1.50E-07	1.02E-05	7.80E-05	3.12E-05	7.80E-05	3.00E-03	1.50E-07	5.40E-06	3.00E-06
SSOPS-5b	1.50E-05	3.96E-05	1.50E-07	1.02E-05	7.80E-05	3.12E-05	7.80E-05	3.00E-03	1.50E-07	5.40E-06	3.00E-06
SSOPS-5c	6.25E-07	1.65E-06	6.25E-09	4.25E-07	3.25E-06	1.30E-06	3.25E-06	1.25E-04	6.25E-09	2.25E-07	1.25E-07
SUBTOTAL	**0.0001**	**0.0002**	**0.0000**	**0.0001**	**0.0004**	**0.0002**	**0.0004**	**0.0161**	**0.0000**	**0.0000**	**0.0000**

Emission Unit	HAP Emissions (ton/yr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
SSOPS-3a	2.19E-04	5.78E-04	2.19E-06	1.49E-04	1.14E-03	4.56E-04	1.14E-03	4.38E-02	2.19E-06	7.88E-05	4.38E-05
SSOPS-5a	6.57E-05	1.73E-04	6.57E-07	4.47E-05	3.42E-04	1.37E-04	3.42E-04	1.31E-02	6.57E-07	2.37E-05	1.31E-05
SSOPS-5b	6.57E-05	1.73E-04	6.57E-07	4.47E-05	3.42E-04	1.37E-04	3.42E-04	1.31E-02	6.57E-07	2.37E-05	1.31E-05
SSOPS-5c	2.74E-06	7.23E-06	2.74E-08	1.86E-06	1.42E-05	5.69E-06	1.42E-05	5.48E-04	2.74E-08	9.86E-07	5.48E-07
SUBTOTAL	**0.0004**	**0.0009**	**0.0000**	**0.0002**	**0.0018**	**0.0007**	**0.0018**	**0.0706**	**0.0000**	**0.0001**	**0.0001**

South Circuit Pre Expansion (Continued)

Source - Batch drop operations associated with South Concentrate Unloding and Transfer

Concentrate--South	5,256,000	tons/yr

Emissions Calculations
AP-42, Table 13.2.4.3: Aggregate Handling and Storage Piles

E = k(0.0032)((U/5)^1.3/(M/2^1.4)

k =	0.74	TSP	
k =	0.35	PM10	
k =	0.053	PM2.5	
U =	6.8	mean wind speed (mph)[a]	(Based on Tucson 2011 Weather Station Data)
M=	7	moisture (%)[a]	
E(TSP) =	0.00061	lb/tn	
E(PM10) =	0.00029	lb/tn	

Assuming a total of 2 batch drop operations as follows:
(1) Batch drop into ground
(2) Batch drop onto truck from transport

Emission factor multiplication based on batch drops =	2	batch drops
E(TSP) =	0.00122	lb/ton
E(PM10) =	0.00058	lb/ton

	Uncontrolled Emissions					
	(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5
	0.73	0.35	0.10	3.21	1.52	0.43
Subtotal	0.73	0.35	0.10	3.21	1.52	0.43

Ore Assay										
Sb (mg/kg)	As (mg/kg)	Be (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Pb (mg/kg)	Mn (mg/kg)	Hg (mg/kg)	Ni (mg/kg)	Se (mg/kg)
2.5	6.6	0.025	1.7	13	5.2	13	500	0.025	0.9	0.5

	HAP Emissions											
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se	Total
Emissions (lb/hr)	1.83E-06	4.84E-06	1.83E-08	1.25E-06	9.54E-06	3.81E-06	9.54E-06	3.67E-04	1.83E-08	6.60E-07	3.67E-07	3.99E-04
Emissions (tons/yr)	8.03E-06	2.12E-05	8.03E-08	5.46E-06	4.18E-05	1.67E-05	4.18E-05	1.61E-03	8.03E-08	2.89E-06	1.61E-06	1.75E-03

South Circuit Pre Expansion (Continued)

Source - Ammonium Nitrate Silo Loading and Unloading Operations

Ammonium nitrate annual throughput =	9,928	tons/year	Note: Total ammonium Nitrate used in 2011 (Including the SX facilities)
Ammonkum nitrate throughput (South Circuit Silos) =	4,964	tons/yr	

Emissions Calculations

AP-42, Table 13.2.4.3: Aggregate Handling and Storage Piles

E = k(0.0032)((U/5)^1.3/(M/2^1.4)

k =	0.74	TSP	
k =	0.35	PM10	
k =	0.053	PM2.5	
U =	6.8	mean wind speed (mph)[a]	(Based on Tucson 2011 Weather Station Data)
M (MSDS) =	0.3	moisture (%)[a]	
E(TSP) =	0.05029	lb/tn	
E(PM10) =	0.02378	lb/tn	

Assuming a total of 2 batch drop operations as follows:
(1) Batch drop into silo
(2) Batch drop onto truck from transport

Emission factor multiplication based on batch drops =	2	batch drops
E(TSP) =	0.10057	lb/ton
E(PM10) =	0.04757	lb/ton

	Uncontrolled Emissions					
	(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5
	0.0570	0.0270	0.0270	0.2496	0.1181	0.1181
SUBTOTAL	0.0570	0.0270	0.0270	0.2496	0.1181	0.1181

Notes:

[a] PM and PM10 emission factors associated with transferring crushed ore can be found in AP-42 Table 11.24-2.

[b] SSOPS-7 emissions are controlled by water sprayers which provides a 70% control efficiency per AP-42 Chapter 11.13.

[c] PM emission factors for unloading Lime are found in AP-42 Table 11.17-4. PM10 emission factors are not provided so it is conservatively assumed that PM10 emissions are equivalent to PM emissions.

[d] Emissions from the transfer of crushed ore are controlled by a baghouse 60-502 which provides a 99% control efficiency.

[e] PM emission factors for transferring Lime are found in AP-42 Table 11.17-4. PM10 emission factors are not provided so it is conservatively assumed that PM10 emissions are equivalent to PM emissions.

MISSION MINE 2010 EMISSION INVENTORY

South Circuit Post Expansion

SOUTH CIRCUIT DETAILED EMISSIONS CALCULATIONS

PM-10/PMa	1.00		
PM2.5/PM10	0.19	Crushing operations	(Note: PM2.5/PM10 ratio are based on the South Mill Expansion application)
PM2.5/PM10	0.28	Handling operations	(Note: PM2.5/PM10 ratio are based on the South Mill Expansion application)
hours/yr	8,760.00		
Annual -South Circuit	12,500,000	ton/year	
Daily - South Circuit	34,247	ton/day	
Process Rate - South Circuit	1,427	ton/hour	

Emission Unit	Controlled Emission Factor	Flowrate	Controlled Emissions (lbs/hr)			Controlled Emissions (tons/yr)			Controlled Emission Factor Source
	(gr/dscf)	(scfm)	PM	PM-10	PM2.5	PM	PM-10	PM2.5	
SSOPS-1 FARR Dust Collector; Primary Crushing	0.003	21,000.00	0.54	0.54	0.10	2.37	2.37	0.44	Vendor (South mill expansion permit application)
SSOPS-2 Wet Ducon 42 Scrubber; Transfer to Stacker	0.01	4,800.00	0.41	0.41	0.12	1.80	1.80	0.51	Vendor (South mill expansion permit application)
SSOPS-3A; FARR Dust Collector	0.003	13,000.00	0.33	0.33	0.09	1.46	1.46	0.41	
SSOPS-3B; FARR Dust Collector	0.003	13,000.00	0.33	0.33	0.09	1.46	1.46	0.41	
SSOPS-4; Scrubber; Transfer to Secondary Crusher	0.010	13,000.00	1.11	1.11	0.32	4.88	4.88	1.38	South mill expansion permit application
SSOPS-4A; Ducon 72 Scrubber;	0.01	14,800.00	1.27	1.27	0.36	5.56	5.56	1.57	South mill expansion permit application
SSOPS-6; Farr Dust Collector; Lime Loading	0.003	3,000.00	0.08	0.08	0.02	0.34	0.34	0.10	South mill expansion permit application
		SUBTOTAL	**4.08**	**4.08**	**1.10**	**17.87**	**17.87**	**4.83**	

Note

a PM10 emissions are assumed to be equivalent to PM emissions in order to provide a conservative emissions estimate.

MISSION MINE 2010 EMISSION INVENTORY

South Circuit Post Expansion (Continued)

ORE ASSAY										
Sb (mg/kg)	As (mg/kg)	Be (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Pb (mg/kg)	Mn (mg/kg)	Hg (mg/kg)	Ni (mg/kg)	Se (mg/kg)
2.50	6.60	0.03	1.70	13.00	5.20	13.00	500.00	0.03	0.90	0.50

Emission Unit	HAP Emissions (lb/hr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
SSOPS-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPS-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPS-3A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPS-3B	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPS-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPS-4A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Emission Unit	HAP Emissions (ton/yr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
SSOPS-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPS-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPS-3A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPS-3B	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPS-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSOPS-4A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**

South Circuit Post Expansion (Continued)

Source -PFOPS-0 (Previously known as HFOPS-1)
Description - Transfer Point of Crushed Ore
AP-42, Table 11.24-2: Material Handling and Transfer

Class	Process		
Ore Throughput	12,500,000	ton/yr	
E (TSP) =	0.12	lb/ton	(Ref: AP-42, Table 11.24-2)
E (PM10) =	0.06	lb/ton	(Ref: AP-42, Table 11.24-2)
E (PM2.5) =	0.017	lb/ton	
Controlled with enclosure =	0.25	percent	(Ref: Assigned based on observation)
Controlled with water spraysb =	0.80	percent	(Ref: Assigned based on observation)
Overall control achieved =	0.85	percent	

Source - PFOPS-1
Description - Primary crusher
AP-42, Table 11.24-2: Material Handling and Transfer

Class	Process		
Ore Throughput	3,300.00	ton/hr	
Ore Throughput	12,500,000	ton/yr	
E (TSP) =	0.50	lb/ton	
E (PM10) =	0.05	lb/ton	
E (PM2.5) =	0.009	lb/ton	
Controlled with enclosure =	0.70	percent	(Ref: Assigned based on observation)
Controlled with water sprays =	0.95	percent	(Ref: Assigned based on observation)
Overall control achieved =	0.985	percent	

Source - PFOPS-2
Description - Transfer to radial stacker
AP-42, Table 11.24-2: Material Handling and Transfer

Class	Process		
Ore Throughput	3,300.00	ton/hr	
Ore Throughput	12,500,000	ton/yr	
E (TSP) =	0.12	lb/ton	
E (PM10) =	0.06	lb/ton	
E (PM2.5) =	0.017	lb/ton	
Controlled with water spray =	0.50	percent	(Ref: Assigned based on observation)
Controlled with wet scrubber =	0.90	percent	(Ref: Assigned based on observation)
Overall control achieved =	0.950	percent	

South Circuit Post Expansion (Continued)

Source - HFOPS-2
Description - Transfer Point of Crushed Ore
AP-42, Table 11.24-2: Material Handling and Transfer

Class	Fugitive	
Ore Throughput	12,500,000	ton/yr
E (TSP) =	0.12	lb/ton
E (PM10) =	0.06	lb/ton
E (PM2.5) =	0.02	lb/ton
Controlled with water sprays =	0.70	percent

Source - PFOPS-3
Description - Apron Feeders 30-130/131/132/133 to Conveyors 30-134/136
AP-42, Table 11.24-2: Material Handling and Transfer

Class	Process	
Ore Throughput	2,000.00	ton/hr
Ore Throughput	12,500,000	ton/yr
E (TSP) =	0.12	lb/ton
E (PM10) =	0.06	lb/ton
E (PM2.5) =	0.017	lb/ton
Controlled with enclosure =	0.70	percent
Controlled with wet scrubber =	0.95	percent
Overall control achieved =	0.985	percent

Source - PFOPS-4
Description - Conveyor 30-134/136 to SAG Mills 30-201/202
AP-42, Table 11.24-2: Material Handling and Transfer

Class	Process	
Ore Throughput	2,000.00	ton/hr
Ore Throughput	12,500,000	ton/yr
E (TSP) =	0.12	lb/ton
E (PM10) =	0.06	lb/ton
E (PM2.5) =	0.017	lb/ton
Controlled with enclosure =	0.70	percent
Controlled with wet scrubber =	0.95	percent
Overall control achieved =	0.985	percent

South Circuit Post Expansion (Continued)

Source - PFOPS-5

Description - SAG Mills (2)/Double Deck Screens (2) to Conveyors 20-238/241/Double Deck Screens 20-203/204 to Ball Mills etc./Conveyor 20-238/241 to 20-244/245

AP-42, Table 11.24-2: Material Handling and Transfer

Class	Process	
Ore Throughput	2,000.00	ton/hr
Ore Throughput	12,500,000	ton/yr
E (TSP) =	-	lb/ton
E (PM10) =	-	lb/ton
E (PM2.5) =	-	lb/ton
Controlled with enclosure =	0.70	percent
Controlled with wet scrubber =	0.95	percent
Overall control achieved =	0.985	percent

Source PFOPS-6 and 7

Description - SAG Reclaim Circuit; Belt 20-244/245 to 20-266/268

AP-42, Table 11.24-2: Material Handling and Transfer

Class	Process	
Ore Throughput	1,600	ton/hr (combined)
Ore Throughput	14,016,000	ton/yr
E (TSP) =	0.01	lb/tona
E (PM10) =	0.004	lb/ton
E (PM2.5) =	0.001	lb/ton
Controlled (wet ore) and Wet Scrubber =	0.95	percent

South Circuit Post Expansion (Continued)

Source PFOPS-8
Description - Omnicore Circuit; Belt 20-238/241 to 20-250
AP-42, Table 11.24-2: Material Handling and Transfer

Class	Process	
Ore Throughput	1,000	ton/hr
Ore Throughput	8,760,000	ton/yr
E (TSP) =	0.01	lb/ton
E (PM10) =	0.004	lb/ton
E (PM2.5) =	0.001	lb/ton
Controlled (wet process and enclosure) =	0.70	percent

Source - PFOPS-11 (SSOPS-5 in the permit)
Description - Transfer from Omnicore crushers
AP-42, Table 11.24-2: Material Handling and Transfer

Class	Process	
Ore Throughput	400	ton/hr
Ore Throughput	3,504,000	ton/yr
E(TSP) =	0.50	lb/ton
E(PM10) =	0.05	lb/ton
E (PM2.5) =	0.009	lb/ton
Controlled with enclosure =	0.50	percent
Controlled with scrubber =	0.90	percent
Overall control achieved =	0.95	percent

Source - PSOPS-12
Description - Transfer from Omnicore crushers (bypass)
AP-42, Table 11.24-2: Material Handling and Transfer

Class	Process	
Ore Throughput	400	ton/hr
Ore Throughput	3,504,000	ton/yr
E(TSP) =	0.12	lb/ton
E(PM10) =	0.06	lb/ton
E (PM2.5) =	0.02	lb/ton
Controlled with enclosure =	0.50	percent
Controlled with scrubber =	0.90	percent
Overall control achieved =	0.95	percent

South Circuit Post Expansion (Continued)

Source - PFOPS-13

Description - Transfer from Omnicore crushers (Return)

AP-42, Table 11.24-2: Material Handling and Transfer

Class	Process	
Ore Throughput	400	ton/hr
Ore Throughput	3,504,000	ton/yr
E(TSP) =	0.12	lb/ton
E(PM10) =	0.06	lb/ton
E (PM2.5) =	0.02	lb/ton
Controlled with enclosure =	0.50	percent
Controlled with scrubber (SSOPS-3) =	0.90	percent
Overall control achieved =	0.95	percent

Source - HFOPS-4

Description - Conveyer to Concentrate Stacking

AP-42, Table 11.24-2: Material Handling and Transfer

Class	Process	
Ore Throughput	650	ton/hr
Ore Throughput	750,000	ton/yr
E(TSP) =	0.01	lb/ton
E(PM10) =	0.004	lb/ton
E (PM2.5) =	0.001	lb/ton
Control achieved (Wet process and enclosure) =	0.70	percent

Source - HFOPS-5

Description - Concentrate Loading

AP-42, Table 11.24-2: Material Handling and Transfer

Class	Fugitive	
Ore Throughput	650	ton/hr
Ore Throughput	750,000	ton/yr
E(TSP) =	0.01	lb/ton
E(PM10) =	0.004	lb/ton
E (PM2.5) =	0.001	lb/ton
Control achieved (Wet process and enclosure) =	0.25	percent

South Circuit Post Expansion (Continued)

Source - HFOPS-3

Description - Stacking

AP-42, Table 11.24.2

Class	Fugitive	
Ore Throughput	1,000	ton/hr
Ore Throughput	8,760,000	ton/yr
E(TSP) =	0.01	lb/ton
E(PM10) =	0.004	lb/ton
E (PM2.5) =	0.001	lb/ton
Control achieved (wet process) =	0.70	percent

Source - PFOPS-9

Description - Transfer from vibratory feeders 20-252/253/254 to Conveyor 20-251

AP-42, Table 11.24-2

Class	Process	
Ore Throughput	600	ton/hr
Ore Throughput	5,256,000	ton/yr
E(TSP) =	0.12	lb/ton
E(PM10) =	0.06	lb/ton
E (PM2.5) =	0.02	lb/ton
Control achieved (Enclosure, 0.7 + Wet Scrubber, 0.9 =	0.97	percent

Source - PFOPS-10

Description - Transfer from 20-251 (42" Conveyer) to 20-255 (36" conveyer)

AP-42, Table 11.24-2

Class	Process	
Ore Throughput	600	ton/hr
Ore Throughput	5,256,000	ton/yr
E(TSP) =	0.12	lb/ton
E(PM10) =	0.06	lb/ton
E (PM2.5) =	0.02	lb/ton
Control achieved (wet scrubber) =	0.90	percent

MISSION MINE 2010 EMISSION INVENTORY

South Circuit Post Expansion (Continued)

Source - PFOPS-14
Description - Concentrate Filter Press to Conveyer
AP-42, Table 11.24-2

Class	Process	
Ore Throughput	650	ton/day
Ore Throughput	750,000	ton/yr
E(TSP) =	0.01	lb/ton
E(PM10) =	0.004	lb/ton
E (PM2.5) =	0.001	lb/ton
Control achieved (Semi-wet process fully enclosed) =	1.00	percent

Source - PFOPS-16
Description - Lime loading to Lime Bin (Pneumatic)
AP-42, Table 11.17-4: Lime Manufacturing

Class	Process	
Ore Throughput	100	ton/day
Ore Throughput	20,000	ton/yr
E(TSP) =	0.61	lb/ton
E(PM10) =	0.61	lb/ton
E (PM2.5) =	0.61	lb/ton
Control achieved (Penuamtic and baghouse) =	0.99	percent

Source - PFOPS-17
Description - Lime Bin to Feeder
AP-42, Table 11.17-4: Lime Manufacturing

Class	Proces	
Ore Throughput	100	ton/day
Ore Throughput	20,000	ton/yr
E(TSP) =	2.20	lb/ton
E(PM10) =	2.20	lb/ton
E (PM2.5) =	2.20	lb/ton
Control achieved (Box Enclosure) =	0.50	percent
Control achieved (Baghouse) =	0.95	percent
Overal control achieved =	0.98	percent

South Circuit Post Expansion (Continued)

Source - PFOPS-18
Description - Belt drop to Ball Mill
AP-42, Table 11.17-4: Lime Manufacturing

Class	Proces	
Ore Throughput	100	ton/day
Ore Throughput	20,000	ton/yr
E(TSP) =	2.20	lb/ton
E(PM10) =	2.20	lb/ton
E (PM2.5) =	2.20	lb/ton
Control achieved (Box Enclosure) =	0.50	percent
Control achieved (Baghouse) =	0.95	percent
Overal control achieved =	0.98	percent

Source - PFOPS-19
Description - Lime Ball Mill
AP-42, Table 11.17-4: Lime Manufacturing

Class	Proces	
Ore Throughput	100	ton/day
Ore Throughput	20,000	ton/yr
E(TSP) =	2.20	lb/ton
E(PM10) =	2.20	lb/ton
E (PM2.5) =	2.20	lb/ton
Control achieved (Baghouse) =	0.95	percent
Overal control achieved =	0.95	percent

Source - PFOPS-20
Description - Concentrator: Ball mills, flotation, thickening, various conveyors, all wet
AP-42, Table 11.24-2

Class	Proces	
Ore Throughput	2,000	ton/day
Ore Throughput	12,500,000	ton/yr
E(TSP) =	-	lb/ton
E(PM10) =	-	lb/ton
E (PM2.5) =	-	lb/ton
Control achieved (wet process) =	0.70	percent

MISSION MINE 2010 EMISSION INVENTORY

South Circuit Post Expansion (Continued)

Emission Unit	Uncontrolled Emissions						Controlled Emissions					
	(lbs/hr)			(tons/yr)			(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5
PFOPS-0 (HFOPS-1)	171.23	85.62	24.23	750.00	375.00	106.13	25.68	12.84	3.63	112.50	56.25	15.92
PFOPS-1	713.47	71.35	13.20	3,125.00	312.50	57.81	10.70	1.07	0.20	46.88	4.69	0.87
PFOPS-2	171.23	85.62	24.23	750.00	375.00	106.13	8.56	4.28	1.21	37.50	18.75	5.31
HFOPS-2	171.23	85.62	24.23	750.00	375.00	106.13	51.37	25.68	7.27	225.00	112.50	31.84
PFOPS-3	171.23	85.62	24.23	750.00	375.00	106.13	2.57	1.28	0.36	11.25	5.63	1.59
PFOPS-4	171.23	85.62	24.23	750.00	375.00	106.13	2.57	1.28	0.36	11.25	5.63	1.59
PFOPS-5	-	-	-	-	-	-	-	-	-	-	-	-
PFOPS-6 and 7	16.00	6.40	1.81	70.08	28.03	7.93	0.80	0.32	0.09	3.50	1.40	0.40
PFOPS-8	10.00	4.00	1.13	43.80	17.52	4.96	3.00	1.20	0.34	13.14	5.26	1.49
PFOPS-11	200.00	20.00	3.70	876.00	87.60	16.21	10.00	1.00	0.19	43.80	4.38	0.81
PFOPS-12	48.00	24.00	6.79	210.24	105.12	29.75	2.40	1.20	0.34	10.51	5.26	1.49
PFOPS-13	48.00	24.00	6.79	210.24	105.12	29.75	2.40	1.20	0.34	10.51	5.26	1.49
HFOPS-4	0.86	0.34	0.10	3.75	1.50	0.42	0.26	0.10	0.03	1.13	0.45	0.13
HFOPS-5	0.86	0.34	0.10	3.75	1.50	0.42	0.64	0.26	0.07	2.81	1.13	0.32
HFOPS-3	10.00	4.00	1.13	43.80	17.52	4.96	3.00	1.20	0.34	13.14	5.26	1.49
PFOPS-9	72.00	36.00	10.19	315.36	157.68	44.62	2.16	1.08	0.31	9.46	4.73	1.34
PFOPS-10	72.00	36.00	10.19	315.36	157.68	44.62	7.20	3.60	1.02	31.54	15.77	4.46
PFOPS-14	0.86	0.34	0.10	3.75	1.50	0.42	-	-	-	-	-	-
PFOPS-16	1.39	1.39	1.39	6.10	6.10	6.10	0.01	0.01	0.01	0.06	0.06	0.06
PFOPS-17	5.02	5.02	5.02	22.00	22.00	22.00	0.13	0.13	0.13	0.55	0.55	0.55
PFOPS-18	5.02	5.02	5.02	22.00	22.00	22.00	0.13	0.13	0.13	0.55	0.55	0.55
PFOPS-19	5.02	5.02	5.02	22.00	22.00	22.00	0.25	0.25	0.25	1.10	1.10	1.10
PFOPS-20	-	-	-	-	-	-	-	-	-	-	-	-
SUBTOTAL	**2,064.66**	**671.32**	**192.83**	**9,043.23**	**2,940.37**	**844.61**	**133.83**	**58.12**	**16.62**	**586.18**	**254.58**	**72.78**

ORE ASSAY										
Sb (mg/kg)	As (mg/kg)	Be (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Pb (mg/kg)	Mn (mg/kg)	Hg (mg/kg)	Ni (mg/kg)	Se (mg/kg)
2.50	6.60	0.03	1.70	13.00	5.20	13.00	500.00	0.03	0.90	0.50

MISSION MINE 2010 EMISSION INVENTORY

South Circuit Post Expansion (Continued)

Emission Unit	HAP Emissions (lb/hr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
PFOPS-0 (HFOPS-1)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
PFOPS-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
PFOPS-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFOPS-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00
PFOPS-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PFOPS-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PFOPS-5	-	-	-	-	-	-	-	-	-	-	-
PFOPS-6 and 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PFOPS-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PFOPS-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
PFOPS-12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PFOPS-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFOPS-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFOPS-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFOPS-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PFOPS-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PFOPS-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PFOPS-14	-	-	-	-	-	-	-	-	-	-	-
PFOPS-20	-	-	-	-	-	-	-	-	-	-	-
SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.07**	**0.00**	**0.00**	**0.00**

MISSION MINE 2010 EMISSION INVENTORY

South Circuit Post Expansion (Continued)

Emission Unit	HAP Emissions (ton/yr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
PFOPS-0 (HFOPS-1)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00
PFOPS-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
PFOPS-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
HFOPS-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00
PFOPS-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
PFOPS-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
PFOPS-5	-	-	-	-	-	-	-	-	-	-	-
PFOPS-6 and 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PFOPS-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
PFOPS-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
PFOPS-12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
PFOPS-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
HFOPS-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFOPS-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFOPS-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
PFOPS-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PFOPS-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
PFOPS-14	-	-	-	-	-	-	-	-	-	-	-
PFOPS-20	-	-	-	-	-	-	-	-	-	-	-
SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**

South Circuit Post Expansion (Continued)

Source - Ammonium Nitrate Silo Loading and Unloading Operations

Ammonium nitrate annual throughput =	9,928	tons/year	Note: Total ammonium Nitrate used in 2011 (Including the SX facilities)
Ammonkum nitrate throughput (South Circuit Silos) =	4,964	tons/yr	

Emissions Calculations

AP-42, Table 13.2.4.3: Aggregate Handling and Storage Piles

E = k(0.0032)((U/5)^1.3/(M/2^1.4)

k =	0.74	TSP
k =	0.35	PM10
k =	0.05	PM2.5
U =	7.70	mean wind speed (mph)a
M (MSDS) =	0.30	moisture (%)a
E(TSP) =	0.06	lb/ton
E(PM10) =	0.03	lb/ton

Assuming a total of 2 batch drop operations as follows:
(1) Batch drop into silo
(2) Batch drop onto truck from transport

Emission factor multiplication based on batch drops =	2.00	batch drops
E(TSP) =	0.12	lb/ton
E(PM10) =	0.06	lb/ton

Emission Unit	Uncontrolled Emissions			
	(lbs/hr)		(tons/yr)	
	PM	PM10	PM	PM10
Ammonium Nitrate Storage Silo Emissions	0.07	0.03	0.29	0.14
SUBTOTAL	**0.07**	**0.03**	**0.29**	**0.14**

Sample Calculations for Potential to Emit

SSOPM-5a: PM: [(19200) tons/day] x [0.01 lbs/ton] x [100% - 70%] x [(1 / 24) days/hr] = 2.40 lbs/hr = 10.51 tons/yr

SSOPM-5a: PM10: [(19200) tons/day] x [0.004 lbs/ton] x [100% - 70%] x [(1 / 24) days/hr] = 0.96 lbs/hr = 4.20 tons/yr

Handling Fugitives

MISSION MINE 2011 EMISSION INVENTORY

Deposition Activities

Wind Erosion--Coarse Ore Storage

Coarse Ore--Mission	20,075,000	tons/yr	(WFOPM-1)
Coarse Ore--North	5,475,000	tons/yr	(WFOPN-1)
Coarse Ore--South	12,500,000	tons/yr	(WFOPS-1)
Intemediate Stocpile - South	7,008,000	tons/yr	(WFOPS-2, as per South Mill permit expansion application)

Emissions Calculations

AP-42, Table 11.19.2-2 : Emission Factors for Crushed Stone Processing Operations

E(TSP) =	0.000016	lb/ton[a]	
$E(PM_{10})$ =	0.000016	lb/ton[b]	
$E(PM_{2.5})$ =	0.000016	lb/ton	(PM2.5 assumed to be equal to PM10)

	Uncontrolled Emissions					
	(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5
WFOPM-1	0.037	0.037	0.037	0.161	0.161	0.161
WFOPN-1	0.010	0.010	0.010	0.044	0.044	0.044
WFOPS-1	0.023	0.023	0.023	0.100	0.100	0.100
WFOPS-2	0.013	0.013	0.013	0.056	0.056	0.056
Total	**0.069**	**0.069**	**0.069**	**0.304**	**0.304**	**0.304**

Ore Assay

	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
mg/kg-->	2.5	6.6	0.025	1.7	13	5.2	13	500	0.025	0.9	0.5

HAP Emissions (lb/hr)	**Sb**	**As**	**Be**	**Cd**	**Cr**	**Co**	**Pb**	**Mn**	**Hg**	**Ni**	**Se**
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**
WFOPM-1	9.17E-08	2.42E-07	9.17E-10	6.23E-08	4.77E-07	1.91E-07	4.77E-07	1.83E-05	9.17E-10	3.30E-08	1.83E-08
WFOPN-1	2.50E-08	6.60E-08	2.50E-10	1.70E-08	1.30E-07	5.20E-08	1.30E-07	5.00E-06	2.50E-10	9.00E-09	5.00E-09
WFOPS-1	5.71E-08	1.51E-07	5.71E-10	3.88E-08	2.97E-07	1.19E-07	2.97E-07	1.14E-05	5.71E-10	2.05E-08	1.14E-08
WFOPS-2	3.20E-08	8.45E-08	3.20E-10	2.18E-08	1.66E-07	6.66E-08	1.66E-07	6.40E-06	3.20E-10	1.15E-08	6.40E-09

HAP Emissions (tons/yr)	**Sb**	**As**	**Be**	**Cd**	**Cr**	**Co**	**Pb**	**Mn**	**Hg**	**Ni**	**Se**
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0002**	**0.0000**	**0.0000**	**0.0000**
WFOPM-1	4.02E-07	1.06E-06	4.02E-09	2.73E-07	2.09E-06	8.35E-07	2.09E-06	8.03E-05	4.02E-09	1.45E-07	8.03E-08
WFOPN-1	1.10E-07	2.89E-07	1.10E-09	7.45E-08	5.69E-07	2.28E-07	5.69E-07	2.19E-05	1.10E-09	3.94E-08	2.19E-08
WFOPS-1	2.50E-07	6.60E-07	2.50E-09	1.70E-07	1.30E-06	5.20E-07	1.30E-06	5.00E-05	2.50E-09	9.00E-08	5.00E-08
WFOPS-2	1.40E-07	3.70E-07	1.40E-09	9.53E-08	7.29E-07	2.92E-07	7.29E-07	2.80E-05	1.40E-09	5.05E-08	2.80E-08

Sample Calculations

Uncontrolled: PM: [0.000016 lb/tn] x [10990100 ton/yr] x [1 / 8760 yr/hrs] = 0.020 lbs/hr = 0.088 tons/yr

Uncontrolled: PM10: [0.000016 lb/tn] x [10990100 ton/yr] x [1 / 8760 yr/hrs] = 0.020 lbs/hr = 0.088 tons/yr

MISSION MINE 2011 EMISSION INVENTORY

Deposition Activities

Wind Erosion--Concentrate Storage

Concentrate--North	401,500	tons/yr	(WFOPM-2)
Concentrate--South	750,000	tons/yr	(WFOPS-3, Concentrate Stockpile, as per South Mill permit expansion application)

E(TSP) =	0.000016	lb/ton	(Ref: AP-42, Table 11.19.2-2: Crushed Stone Processing, as per South Mill expansion permit application)
E(PM10) =	0.000016	lb/ton	
E(PM2.5) =	0.000016	lb/ton	

	Uncontrolled Emissions					
	(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5
WFOPM-2	0.0007	0.0007	0.0007	0.0032	0.0032	0.0032
WFOPS-3	0.0014	0.0014	0.0014	0.0060	0.0060	0.0060
Total	**0.0021**	**0.0021**	**0.0021**	**0.0092**	**0.0092**	**0.0092**

Ore Assay

	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
mg/kg-->	2.5	6.6	0.025	1.7	13	5.2	13	500	0.025	0.9	0.5

HAP Emissions (lb/hr)	**Sb**	**As**	**Be**	**Cd**	**Cr**	**Co**	**Pb**	**Mn**	**Hg**	**Ni**	**Se**
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**
WFOPM-2	1.83E-09	4.84E-09	1.83E-11	1.25E-09	9.53E-09	3.81E-09	9.53E-09	3.67E-07	1.83E-11	6.60E-10	3.67E-10
WFOPS-3	3.42E-09	9.04E-09	3.42E-11	2.33E-09	1.78E-08	7.12E-09	1.78E-08	6.85E-07	3.42E-11	1.23E-09	6.85E-10

HAP Emissions (tons/yr)	**Sb**	**As**	**Be**	**Cd**	**Cr**	**Co**	**Pb**	**Mn**	**Hg**	**Ni**	**Se**
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**
WFOPM-2	8.03E-09	2.12E-08	8.03E-11	5.46E-09	4.18E-08	1.67E-08	4.18E-08	1.61E-06	8.03E-11	2.89E-09	1.61E-09
WFOPS-3	1.50E-08	3.96E-08	1.50E-10	1.02E-08	7.80E-08	3.12E-08	7.80E-08	3.00E-06	1.50E-10	5.40E-09	3.00E-09

Notes:

[a] The ore moisture content and the mean wind speed values are based on site specific values

[b] Particulate emissions for transferring activities are estimated using equation 1 from AP-42 Chapter 13.2.4, and the particle size multipliers found in AP-42, Table 13.2.4.3.

Sample Calculations

PM: [(160,600) tons/yr] x [(0.74 x 0.0032 x $(2.9 / 5)^{1.3}$ x $(1 / (7.0 / 2)^{1.4})$) lbs/ton x [1 / 8760 yr/hrs] = 0.37 **lbs/hr = 0.0162 tons/yr**

PM10: [(160,600) tons/yr] x [0.35 x 0.0032 x $(2.9 / 5)^{1.3}$ x $(1 / (7.0 / 2)^{1.4})$ lbs/ton] x [1 / 8760 yr/hrs] = **0.0018 lbs/hr = 0.0077 tons/yr**

MISSION MINE 2011 EMISSION INVENTORY

Deposition Activities

Wind Erosion--Tailings Dams

E(TSP) =	3513	lbs/acre[a]-yr	
E(PM10)=	193	lbs/acre[a]-yr	
E(PM2.5)=	193	lb/acre (PM2.5 is conservatively assumed to be equal to PM10 emission rate)	
Total Tailing Acres		4600	
Uncontrolled Acres[b]		230	(Uncontrolled = 5% of total acres)
Controlled Acres		4370	

Controlled with chemical application[c] = 99%

TSP Controlled Acres=	17.525	lb/hr	76.76	tons
PM10 Controlled Acres=	0.963	lb/hr	4.22	tons
PM2.5 Controlled Acres=	0.963	lb/hr	4.22	tons
TSP Uncontrolled Acres=	92.236	lb/hr	404.00	tons
PM10 Uncontrolled Acres=	5.067	lb/hr	22.20	tons
PM2.5 Uncontrolled Acres=	5.067	lb/hr	22.20	tons

	Uncontrolled Emissions					
	(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5
WFDA-1	**110**	**6**	**6**	**480.75**	**26.41**	**26.41**

Ore Assay

	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
mg/kg-->	2.5	6.6	0.025	1.7	13	5.2	13	500	0.025	0.9	0.5

HAP Emissions (lb/hr)	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
Total	**0.0003**	**0.0007**	**0.0000**	**0.0002**	**0.0014**	**0.0006**	**0.0014**	**0.0549**	**0.0000**	**0.0001**	**0.0001**
WFDA-1	2.74E-04	7.24E-04	2.74E-06	1.87E-04	1.43E-03	5.71E-04	1.43E-03	5.49E-02	2.74E-06	9.88E-05	5.49E-05

HAP Emissions (tons/yr)	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
Total	**0.0012**	**0.0032**	**0.0000**	**0.0008**	**0.0062**	**0.0025**	**0.0062**	**0.2404**	**0.0000**	**0.0004**	**0.0002**
WFDA-1	1.20E-03	3.17E-03	1.20E-05	8.17E-04	6.25E-03	2.50E-03	6.25E-03	2.40E-01	1.20E-05	4.33E-04	2.40E-04

Notes:

[a] The emission factors are from the Hayden Mine SIP, Appendix E.

[b] A total of 5% of the tailings are uncontrolled.

[c] AP-42 Chapter 13.2.4 states that the continuous chemical treating of storage piles can have a control efficiency of up to 90%, however based on operations and activity, a higher control factor (fugitive) is applied to this source (tailing) based on the the chemical application and wetting operations at the facility.

MISSION MINE 2011 EMISSION INVENTORY

Deposition Activities

Sample Calculations
Uncontrolled: PM: [2637 acres] x [0.05] x [3513 lbs/acre-yr] x [1 / 8760 yr/hrs] = 52.85 lbs/hr = 231.59 tons
Uncontrolled: PM10: [2637 acres] x [0.05] x [193 lbs/acre-yr] x [1 / 8760 yr/hrs] = 2.905 lbs/hr = 12.72 tons

MISSION MINE 2011 EMISSION INVENTORY

Deposition Activities

Wind Erosion--Overburden Deposition Areas

Overburden (waste Dumps) [c] 128,615,469 tons/yr

Emissions Calculations
AP-42, Table 13.2.4.3: Aggregate Handling and Storage Piles

E = k(0.0032)((U/5)^1.3/(M/2^1.4)

k =	0.74	TSP	
k =	0.35	PM10	
k =	0.053	PM2.5	
U =	6.8	mean wind speed (mph)[a]	(Based on Tucson 2011 Weather Station Data)
M=	2.6	moisture (%)[a]	

E(TSP) =	0.00245	lb/ton[b]
E(PM10) =	0.00116	lb/ton[b]
E(PM2.5) =	0.00018	lb/ton[b]

	Uncontrolled Emissions					
	(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5
WFDA-2	**35.91**	**16.99**	**2.57**	**157.30**	**74.40**	**11.27**

Notes:

[a] The ore moisture content and the mean wind speed values are based on site specific values

[b] Particulate emissions for transferring activities are estimated using equation 1 from AP-42 Chapter 13.2.4, and the particle size multipliers found in AP-42, Table 13.2.4.3.

[c] Emissions from inactive depsoition areas (waste dumps) are insignificant. AP-42 13.2.4 2 ndicates that "*when freshely processed aggregate is oaded into storage pile, the potential for dust emissions is at maximum*" . This emission are quantified HFMA-1 Unloading Overburden. " *As the aggregate pile weathers, however, potential for dust emission is greately reduced. Moisture causes aggragation and cementation of fines to the surface of greater particles. Any significant rainfall soaks the interior of the pile, and then the dryng pocs is very slow.*"

Sample Calculations
PM: [(68122600 x 1.888a) tons/yr] x [(0.74 x 0.0032 x (4.1 / 5)1.3 x (1 / (2.6 / 2)1.4))] x [1 / 8760 yr/hrs] = 19 lbs/hr = 81 tons/yr
PM10: [(68122600 x 1.888a) tons/yr] x [0.35 x 0.0032 x (4.1 / 5)1.3 x (1 / (2.6 / 2)1.4) lbs/ton] x [1 / 8760 yr/hrs] = 8.8 lbs/hr = 39 tons/yr

MISSION MINE- 2011
EMISSION INVENTORY

By products

Molybdenum By-Product Plant

Conc. Throughput 2000 lbs/hr Note: Moly Plant has been on stand-by since December of 2008

AP-42, Table 11.24-2: Material Handling and Transfer Drying Concentrate

PM	19.7	lb/ton[a]
PM-10	12	lb/ton[a]
PM-2.5	3.396	lb/ton (PM2.5 = 0.283 PM10, as used for all other circuits based on South Mill expansion permit application)

Control Efficiency[b] 90%

ORE ASSAY										
Sb (mg/kg)	As (mg/kg)	Be (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Pb (mg/kg)	Mn (mg/kg)	Hg (mg/kg)	Ni (mg/kg)	Se (mg/kg)
2.5	6.6	0.025	1.7	13	5.2	13	500	0.025	0.9	0.5

Emission Unit	Uncontrolled Emissions						Controlled Emissions					
	(lbs/hr)			(tons/yr)			(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5
SSMP-1	**19.70**	**12.00**	**3.40**	**86.29**	**52.56**	**14.87**	**1.97**	**1.20**	**0.34**	**8.63**	**5.26**	**1.49**

Emission Unit	HAP Emissions (lb/yr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
SSMP-1	4.93E-06	1.30E-05	4.93E-08	3.35E-06	2.56E-05	1.02E-05	2.56E-05	9.85E-04	4.93E-08	1.77E-06	9.85E-07
TOTAL	**4.93E-06**	**1.30E-05**	**4.93E-08**	**3.35E-06**	**2.56E-05**	**1.02E-05**	**2.56E-05**	**9.85E-04**	**4.93E-08**	**1.77E-06**	**9.85E-07**

Emission Unit	HAP Emissions (ton/yr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
SSMP-1	2.16E-05	5.69E-05	2.16E-07	1.47E-05	1.12E-04	4.49E-05	1.12E-04	4.31E-03	2.16E-07	7.77E-06	4.31E-06
TOTAL	**2.16E-05**	**5.69E-05**	**2.16E-07**	**1.47E-05**	**1.12E-04**	**4.49E-05**	**1.12E-04**	**4.31E-03**	**2.16E-07**	**7.77E-06**	**4.31E-06**

Notes:

[a] PM and PM10 emission factors associated with drying concentrated ore can be found in AP-42 Table 11.24-2.

[b] PM and PM10 emissions are controlled by scrubber 353-115 which provides a 90% control efficiency.

Sample Calculations for Potential to Emit

PM: [2000 lbs/hr] x [19.7 lbs/ton] x [100% - 90%] x [1 / 2000 ton/lbs] = 2 lbs/hr = 8.76 tons/yr

PM10: [2000 lbs/hr] x [12 lbs/ton] x [100% - 90%] x [1 / 2000 ton/lbs] = 1 lb/hr = 4.38 tons/yr

MISSION MINE- 2011
EMISSION INVENTORY

By products

CFMP-1 and CFMP-2 Dryers

AP-42, Table 1.4-1 and 1.4-2

Dryer	Size (BTU/hr)	Potenital Gas Fire Rate (ft^3/hr)
CFMP-1	3,000,000	2,857
CFMP-2	3,000,000	2,857

Emission Factors

SO_2	0.6	$(lbs/10^6\ ft^3)^a$
NO_2	100	$(lbs/10^6\ ft^3)^a$
CO	84	$(lbs/10^6\ ft^3)^a$
PM Filterable	1.9	$(lbs/10^6\ ft^3)^a$
PM Condensable	5.7	$(lbs/10^6\ ft^3)^a$
VOC	5.5	lb/MMscf

Non-metallic HAPs (lb/MMscf)	
2-Methylnaphthalene	2.40E-05
3-Methylchloranthrene	1.80E-06
7,12-Dimethylbenz(a)anthracene	1.60E-05
Acenaphthene	1.80E-06
Acenaphthylene	1.80E-06
Anthracene	2.40E-06
Benz(a)anthracene	1.80E-06
Benzene	2.10E-03
Benzo(a)pyrene	1.20E-06
Benzo(b)fluoranthene	1.80E-06
Benzo(g,h,i)perylene	1.20E-06
Benzo(k)fluoranthene	1.80E-06
Chrysene	1.80E-06
Dibenzo(a,h)anthracene	1.20E-06
Dichlorobenzene	1.20E-03
Fluoranthene	3.00E-06
Fluorene	2.80E-06
Formaldehyde	7.50E-02
Hexane	1.80E+00
Indeno(1,2,3-cd)pyrene	1.80E-06
Naphthalene	6.10E-04
Phenanathrene	1.70E-05
Pyrene	5.00E-06
Toluene	3.40E-03

Metallic HAPs (lb/MMscf)	
Arsenic	2.00E-04
Beryllium	1.25E-05
Cadmium	1.10E-03
Chromium	1.40E-03
Cobalt	8.40E-05
Manganese	3.80E-04
Mercury	2.60E-04
Nickel	2.10E-03
Selenium	2.40E-05

MISSION MINE- 2011
EMISSION INVENTORY

By products

CFMP-1 and CFMP-2 Dryers (continued)

	Uncontrolled Emissions													
	(lbs/hr)							(tons/yr)						
				PM (all PM-10)							PM (all PM-10)			
	SO_2	NO_2	CO	Filterable	Condens.	Total PM[b]	VOC	SO_2	NO_2	CO	Filterable	Condens.	Total PM[b]	VOC
CFMP-1	0.002	0.286	0.240	0.005	0.016	0.022	0.016	0.008	1.251	1.051	0.024	0.071	0.095	0.069
CFMP-2	0.002	0.286	0.240	0.005	0.016	0.022	0.016	0.008	1.251	1.051	0.024	0.071	0.095	0.069
TOTAL	**0.003**	**0.571**	**0.480**			**0.043**	**0.031**	**0.015**	**2.503**	**2.102**			**0.190**	**0.138**

Emissions (lb/hr)	**CFMP-1**	**CFMP-2**
2-Methylnaphthalene	6.86E-08	6.86E-08
3-Methylchloranthrene	5.14E-09	5.14E-09
7,12-Dimethylbenz(a)anthracene	4.57E-08	4.57E-08
Acenaphthene	5.14E-09	5.14E-09
Acenaphthylene	5.14E-09	5.14E-09
Anthracene	6.86E-09	6.86E-09
Benz(a)anthracene	5.14E-09	5.14E-09
Benzene	6.00E-06	6.00E-06
Benzo(a)pyrene	3.43E-09	3.43E-09
Benzo(b)fluoranthene	5.14E-09	5.14E-09
Benzo(g,h,i)perylene	3.43E-09	3.43E-09
Benzo(k)fluoranthene	5.14E-09	5.14E-09
Chrysene	5.14E-09	5.14E-09
Dibenzo(a,h)anthracene	3.43E-09	3.43E-09
Dichlorobenzene	3.43E-06	3.43E-06
Fluoranthene	8.57E-09	8.57E-09
Fluorene	8.00E-09	8.00E-09
Formaldehyde	2.14E-04	2.14E-04
Hexane	5.14E-03	5.14E-03
Indeno(1,2,3-cd)pyrene	5.14E-09	5.14E-09
Naphthalene	1.74E-06	1.74E-06
Phenanathrene	4.86E-08	4.86E-08
Pyrene	1.43E-08	1.43E-08
Toluene	9.71E-06	9.71E-06
TOTAL	**5.38E-03**	**5.38E-03**

Emissions (tons/yr)	**CFMP-1**	**CFMP-2**
2-Methylnaphthalene	0.000	0.000
3-Methylchloranthrene	0.000	0.000
7,12-Dimethylbenz(a)anthracene	0.000	0.000
Acenaphthene	0.000	0.000
Acenaphthylene	0.000	0.000
Anthracene	0.000	0.000
Benz(a)anthracene	0.000	0.000
Benzene	0.000	0.000
Benzo(a)pyrene	0.000	0.000
Benzo(b)fluoranthene	0.000	0.000
Benzo(g,h,i)perylene	0.000	0.000
Benzo(k)fluoranthene	0.000	0.000
Chrysene	0.000	0.000
Dibenzo(a,h)anthracene	0.000	0.000
Dichlorobenzene	0.000	0.000
Fluoranthene	0.000	0.000
Fluorene	0.000	0.000
Formaldehyde	0.001	0.001
Hexane	0.023	0.023
Indeno(1,2,3-cd)pyrene	0.000	0.000
Naphthalene	0.000	0.000
Phenanathrene	0.000	0.000
Pyrene	0.000	0.000
Toluene	0.000	0.000
TOTAL	**2.36E-02**	**2.36E-02**

MISSION MINE- 2011
EMISSION INVENTORY

By products

CFMP-1 and CFMP-2 Dryers (continued)

Emissions (lb/hr)	CFMP-1	CFMP-2
Arsenic	5.71E-07	5.71E-07
Beryllium	3.57E-08	3.57E-08
Cadmium	3.14E-06	3.14E-06
Chromium	4.00E-06	4.00E-06
Cobalt	2.40E-07	2.40E-07
Manganese	1.09E-06	1.09E-06
Mercury	7.43E-07	7.43E-07
Nickel	6.00E-06	6.00E-06
Selenium	6.86E-08	6.86E-08
TOTAL	**1.59E-05**	**1.59E-05**

Emissions (tons/yr)	CFMP-1	CFMP-2
Arsenic	2.50E-06	2.50E-06
Beryllium	1.56E-07	1.56E-07
Cadmium	1.38E-05	1.38E-05
Chromium	1.75E-05	1.75E-05
Cobalt	1.05E-06	1.05E-06
Manganese	4.76E-06	4.76E-06
Mercury	3.25E-06	3.25E-06
Nickel	2.63E-05	2.63E-05
Selenium	3.00E-07	3.00E-07
TOTAL	**6.96E-05**	**6.96E-05**

Notes:

[a] Emission factors associated with consumption of natural gas are found in AP-42 Table 1.4-1 and 1.4-2.

[b] Total PM emissions are estimated by summing the Filterable and Condensable fractions according to AP-42 Table 1.4-2.

MISSION MINE- 2011
EMISSION INVENTORY

By products

Moly Plant Transfers

Source - Filter Press Drop to Dryers
AP-42, Ch. 11.24, Table 11.24-2, Wet Ore Handling

Ore Throughput	1.00	ton/hr
E (TSP) =	0.01	lb/ton
E (PM10) =	0.0040	lb/ton
E (PM2.5) =	0.0017	lb/ton

Control efficiency = 90%

Source - Dryer Drop to Product Packaging
AP-42, Ch. 11.24, Table 11.24-2, Dry Ore Handling

Ore Throughput	1.00	ton/hr
E (TSP) =	0.12	lb/ton
E (PM10) =	0.0600	lb/ton
E (PM2.5) =	0.0170	lb/ton

Control efficiency = 90%

Source - Product Packagining
AP-42, Ch. 11.24, Table 11.24-2, Dry Ore handling

Ore Throughput	1.00	ton/hr
E (TSP) =	0.12	lb/ton
E (PM10) =	0.0600	lb/ton
E (PM2.5) =	0.0170	lb/ton

Control efficiency = 90%

MISSION MINE- 2011
EMISSION INVENTORY

By products

Moly Plant Transfers (continued)

Source - Moly Plant Wet Scrubber

AP-42, Ch. 11.24, Table 11.24-2, Dry Ore handling

E (TSP) =	0.01	gr/scf
E (PM10) =	0.01	gr/scf
E (PM2.5) =	0.01	gr/scf
Flow rate =	15,000	scfm

Emission Unit	Uncontrolled Emissions						Controlled Emissions					
	(lbs/hr)			(tons/yr)			(lbs/hr)			(tons/yr)		
	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5	PM	PM10	PM2.5
Filter Press Drop to Dryer	0.01	0.00	0.00	0.04	0.02	0.01	0.00100	0.00040	0.00017	0.00438	0.00175	0.00074
Dryer Drop to Product Packaging	0.12	0.06	0.02	0.53	0.26	0.07	0.01200	0.00600	0.00170	0.05256	0.02628	0.00745
Product Packagining	0.12	0.06	0.02	0.53	0.26	0.07	0.01200	0.00600	0.00170	0.05256	0.02628	0.00745
Moly Plant Wet Scrubber							1.29	1.29	1.29	5.63	5.63	5.63

ORE ASSAY										
Sb (mg/kg)	As (mg/kg)	Be (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Pb (mg/kg)	Mn (mg/kg)	Hg (mg/kg)	Ni (mg/kg)	Se (mg/kg)
2.5	6.6	0.025	1.7	13	5.2	13	500	0.025	0.9	0.5

Emission Unit	HAP Emissions (lb/yr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
Filter Press Drop to Dryer	2.50E-09	6.60E-09	2.50E-11	1.70E-09	1.30E-08	5.20E-09	1.30E-08	5.00E-07	2.50E-11	9.00E-10	5.00E-10
Dryer Drop to Product Packaging	3.00E-08	7.92E-08	3.00E-10	2.04E-08	1.56E-07	6.24E-08	1.56E-07	6.00E-06	3.00E-10	1.08E-08	6.00E-09
Product Packagining	3.00E-08	7.92E-08	3.00E-10	2.04E-08	1.56E-07	6.24E-08	1.56E-07	6.00E-06	3.00E-10	1.08E-08	6.00E-09
Moly Plant Wet Scrubber	3.21E-06	8.49E-06	3.21E-08	2.19E-06	1.67E-05	6.69E-06	1.67E-05	6.43E-04	3.21E-08	1.16E-06	6.43E-07

Emission Unit	HAP Emissions (ton/yr)										
	Sb	As	Be	Cd	Cr	Co	Pb	Mn	Hg	Ni	Se
Filter Press Drop to Dryer	1.10E-08	2.89E-08	1.10E-10	7.45E-09	5.69E-08	2.28E-08	5.69E-08	2.19E-06	1.10E-10	3.94E-09	2.19E-09
Dryer Drop to Product Packaging	1.31E-07	3.47E-07	1.31E-09	8.94E-08	6.83E-07	2.73E-07	6.83E-07	2.63E-05	1.31E-09	4.73E-08	2.63E-08
Product Packagining	1.31E-07	3.47E-07	1.31E-09	8.94E-08	6.83E-07	2.73E-07	6.83E-07	2.63E-05	1.31E-09	4.73E-08	2.63E-08
Moly Plant Wet Scrubber	1.41E-05	3.72E-05	1.41E-07	9.57E-06	7.32E-05	2.93E-05	7.32E-05	2.82E-03	1.41E-07	5.07E-06	2.82E-06

MISSION MINE- 2011
EMISSION INVENTORY

Storage Tanks

Gasoline Storage Tank

Tank volume =	20,000	gallons
Annual throughput =	97,898	gallons (for 2009)
Total turnovers =	4.8949	per year
Total turnover for PTE =	6	per year

Sample Calculations for Potential to Emit

Gasoline HAP (referenced from MSDS)	Benzene	Ethyl Benzene	Xylene-p	Xylene-m	Xylene-o	Toluene	Hexane	Methyl Tert Butyl Ether
Weight %	4.50%	1.40%	0.90%	4.60%	2.20%	6.50%	3.00%	15%

VOC Emissions =	6,628.81	pounds/yr
VOC Emissions =	0.76	pounds/hr
VOC Emissions =	3.31	tons/yr

	Benzene	Ethyl Benzene	Xylene-p	Xylene-m	Xylene-o	Toluene	Hexane	Methyl Tert Butyl Ether
HAP Emissions (lb/hr)	**0.037**	**0.011**	**0.007**	**0.035**	**0.017**	**0.049**	**0.023**	**0.114**
HAP Emissions (tons/yr)	**0.162**	**0.046**	**0.030**	**0.152**	**0.073**	**0.215**	**0.099**	**0.497**

Diesel Storage Tank

Location	Name	Contents	Height (ft)	Diameter (ft)	Capacity (gallons)	VOC Emissions (lbs/yr)	VOC Emissions (lbs/hr)	VOC Emissions (tons/yr)
Tank Farm	Storage Tank	Diesel	30	38	250,000	595.69	**0.07**	**0.30**
Tank Farm	Storage Tank	Diesel	30	10.65	20,000	46.69	**0.01**	**0.02**
Tank Farm	Storage Tank	Diesel	30	10.650	20,000	46.69	**0.01**	**0.02**
Tank Farm	Storage Tank	Diesel	30	10.650	20,000	46.69	**0.01**	**0.02**

Insignificant Emission Units

Note: The following emission units are considered to have insignificant contributions to the VOC emissions from the facility, with no contribution to other criteria pollutants and HAP emissions.

1 Pine oil storage tank, 20,000 gallons
2 MIBC storage tank, 16,000 gallons
3 Reagent storage tanks (a) Reagent C-531 (b) Reagent C-586 (c) Calfoam EA-603, and (d) Potassium Amyl Xanthate