

DMR Summary Report

ArcelorMittal Minorca Mine Inc - Laurentian (MN0059633)

First DMR in Delta: 4/1999

Surface Discharge Station SD001 (Alt. Laurentian Mine Discharge (010))

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/13</u>	<u>2/13</u>	<u>3/13</u>	<u>4/13</u>	<u>5/13</u>	<u>6/13</u>	<u>7/13</u>	<u>8/13</u>	<u>9/13</u>	<u>10/13</u>	<u>11/13</u>	<u>12/13</u>	<u>Ave</u>
Flow	MG	CalMoTot	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Flow	mgd	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Flow	mgd	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Iron, Dissolved (as Fe)	1.0 mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Iron, Dissolved (as Fe)	2.0 mg/L	DailyMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Mercury, Total (as Hg)	1.8 ng/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Mercury, Total (as Hg)	3.2 ng/L	DailyMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Nitrogen, Nitrate, Total (as N)	mg/L	SingleVal			NoDis			NoDis			NoDis			NoDis	
pH	8.5 SU	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
pH	6.5 SU	CalMoMin	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Solids, Total Suspended (TSS)	20 mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Solids, Total Suspended (TSS)	30 mg/L	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Sulfate, Total (as SO4)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Turbidity	25 NTU	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Turbidity	NTU	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis

Surface Discharge Station SD002 (Alt. Laurentian Mine Discharge (011))

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/13</u>	<u>2/13</u>	<u>3/13</u>	<u>4/13</u>	<u>5/13</u>	<u>6/13</u>	<u>7/13</u>	<u>8/13</u>	<u>9/13</u>	<u>10/13</u>	<u>11/13</u>	<u>12/13</u>	<u>Ave</u>
Flow	MG	CalMoTot	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Flow	mgd	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Flow	mgd	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Iron, Dissolved (as Fe)	1.0 mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Iron, Dissolved (as Fe)	2.0 mg/L	DailyMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Mercury, Total (as Hg)	1.8 ng/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Mercury, Total (as Hg)	3.2 ng/L	DailyMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Nitrogen, Nitrate, Total (as N)	mg/L	SingleVal			NoDis			NoDis			NoDis			NoDis	
pH	8.5 SU	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
pH	6.5 SU	CalMoMin	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Solids, Total Suspended (TSS)	20 mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Solids, Total Suspended (TSS)	30 mg/L	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Sulfate, Total (as SO4)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Turbidity	25 NTU	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis

Note: a limit in the Limit and Units column which is demarcated by asterisks is an Intervention limit, not a hard, violation-causing limit.

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ArcelorMittal Minorca Mine Inc - Laurentian (MN0059633)

First DMR in Delta: 4/1999

Surface Discharge Station SD002 (Alt. Laurentian Mine Discharge (011))

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/13</u>	<u>2/13</u>	<u>3/13</u>	<u>4/13</u>	<u>5/13</u>	<u>6/13</u>	<u>7/13</u>	<u>8/13</u>	<u>9/13</u>	<u>10/13</u>	<u>11/13</u>	<u>12/13</u>	<u>Ave</u>
Turbidity	NTU	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	

Surface Discharge Station SD003 (Primary Laurentian Mine Discharge (012))

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/13</u>	<u>2/13</u>	<u>3/13</u>	<u>4/13</u>	<u>5/13</u>	<u>6/13</u>	<u>7/13</u>	<u>8/13</u>	<u>9/13</u>	<u>10/13</u>	<u>11/13</u>	<u>12/13</u>	<u>Ave</u>
Flow	MG	CalMoTot	112.72	101.3	104.9	111.6	111.3	119.78	73.02	58.17	86.335	80.41	79.23	69.54	92.359
Flow	mgd	CalMoAvg	3.64	3.62	3.39	3.721	3.590	3.993	2.355	1.876	2.878	2.594	2.641	2.243	3.045
Flow	mgd	CalMoMax	3.64	3.62	3.39	3.721	3.590	3.993	2.355	1.876	2.878	2.594	2.641	2.243	3.045
Iron, Dissolved (as Fe)	1.0 mg/L	CalMoAvg	<0.1	<0.1	<0.1	<0.05	<0.05	0.0815	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.082
Iron, Dissolved (as Fe)	2.0 mg/L	DailyMax	<0.1	<0.1	<0.1	<0.05	<0.05	0.0815	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.082
Mercury, Total (as Hg)	1.8 ng/L	CalMoAvg	0.6575	0.8075	0.746	1.506	2.764	0.988	0.837	0.773	0.784	0.8905	0.8495	0.639	1.02
Mercury, Total (as Hg)	3.2 ng/L	DailyMax	0.673	0.877	0.757	2.20	4.62	1.07	0.852	0.803	0.837	1.01	0.939	0.745	1.282
Nitrogen, Nitrate, Total (as N)	mg/L	SingleVal			0.21			0.91			2.3			0.33	0.938
pH	8.5 SU	CalMoMax	7.9	8.0	8	8.2	8.2	8.0	8.3	8.1	7.9	8.1	8.2	7.9	8.067
pH	6.5 SU	CalMoMin	7.9	8.0	8	7.8	8.0	8.0	8.2	7.9	7.8	7.9	7.9	7.9	7.942
Solids, Total Suspended (TSS)	20 mg/L	CalMoAvg	1.75	1.25	1.5	4.8	21.15	1.75	1.95	2.3	1.15	1.2	1.25	<1.0	3.641
Solids, Total Suspended (TSS)	30 mg/L	CalMoMax	4.0	2	2.8	14	78	2.8	4.8	4.4	1.6	1.6	2.0	<1.0	10.727
Sulfate, Total (as SO4)	mg/L	SingleVal	133	119	114	133	155	137	168	154	148	154	144	128	140.583
Turbidity	25 NTU	CalMoAvg	0.38	0.78	1.65	0.71	1.7	4.5	5.75	2.6	0.37	0.45	0.155	0.315	1.613
Turbidity	NTU	CalMoMax	0.45	1.2	1.65	0.72	3.2	7.8	8.2	3.9	0.50	0.64	0.17	0.45	2.407

Surface Discharge Station SD005 (East Pit #1 Discharge)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/13</u>	<u>2/13</u>	<u>3/13</u>	<u>4/13</u>	<u>5/13</u>	<u>6/13</u>	<u>7/13</u>	<u>8/13</u>	<u>9/13</u>	<u>10/13</u>	<u>11/13</u>	<u>12/13</u>	<u>Ave</u>
Flow	MG	CalMoTot	1.92	0.919	NoDis	18.4	16.35	NoDis	28.60	2.182	0.99	7.47	0.720	NoDis	8.617
Flow	mgd	CalMoAvg	2.16	2.16	NoDis	1.87	1.44	NoDis	2.16	2.16	2.16	2.16	2.16	NoDis	2.048
Flow	mgd	CalMoMax	2.16	2.16	NoDis	1.87	1.44	NoDis	2.16	2.16	2.16	2.16	2.16	NoDis	2.048
Iron, Dissolved (as Fe)	1.0 mg/L	CalMoAvg	<0.05	0.071	NoDis	0.0781	<0.05	NoDis	<0.05	<0.05	<0.05	<0.05	0.05	NoDis	0.066
Iron, Dissolved (as Fe)	2.0 mg/L	DailyMax	<0.05	0.071	NoDis	0.0781	<0.05	NoDis	<0.05	<0.05	<0.05	<0.05	0.05	NoDis	0.066
Mercury, Total (as Hg)	1.8 ng/L	CalMoAvg	1.66	0.842	NoDis	0.871	1.496	NoDis	0.993	<0.5	0.535	1.97	0.794	NoDis	1.145
Mercury, Total (as Hg)	3.2 ng/L	DailyMax	2.0	0.842	NoDis	0.871	2.26	NoDis	1.09	<0.5	0.535	2.74	0.794	NoDis	1.392
Nitrogen, Nitrate, Total (as N)	mg/L	SingleVal			NoDis			12.4			21.8			NoDis	17.1
pH	8.5 SU	CalMoMax	8.2	8.3	NoDis	8.2	8.5	NoDis	8.4	8.0	8.2	8.8	8.4	NoDis	8.333
pH	6.5 SU	CalMoMin	8.2	8.3	NoDis	8.2	8.4	NoDis	8.4	8.0	8.2	7.7	8.4	NoDis	8.2

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Surface Discharge Station SD005 (East Pit #1 Discharge)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/13</u>	<u>2/13</u>	<u>3/13</u>	<u>4/13</u>	<u>5/13</u>	<u>6/13</u>	<u>7/13</u>	<u>8/13</u>	<u>9/13</u>	<u>10/13</u>	<u>11/13</u>	<u>12/13</u>	<u>Ave</u>
Solids, Total Suspended (TSS)	20 mg/L	CalMoAvg	37.45	5.8	NoDis	1.7	2.2	NoDis	1.5	1.1	1	5.9	<1.0	NoDis	7.081
Solids, Total Suspended (TSS)	30 mg/L	CalMoMax	101	6	NoDis	2.4	3.6	NoDis	2.0	1.2	1	10	<1.0	NoDis	15.9
Sulfate, Total (as SO4)	mg/L	SingleVal	214	174	NoDis	164	218	NoDis	210	277	316	176	280	NoDis	225.444
Turbidity	25 NTU	CalMoAvg	24.5	8.2	NoDis	1.5	1.7	NoDis	1.7	0.40	0.53	3.85	1.4	NoDis	4.864
Turbidity	NTU	CalMoMax	29	8.2	NoDis	1.5	2.8	NoDis	1.8	0.40	0.53	5.1	1.4	NoDis	5.637

Surface Discharge Station SD006 (East Pit #2 Discharge)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/13</u>	<u>2/13</u>	<u>3/13</u>	<u>4/13</u>	<u>5/13</u>	<u>6/13</u>	<u>7/13</u>	<u>8/13</u>	<u>9/13</u>	<u>10/13</u>	<u>11/13</u>	<u>12/13</u>	<u>Ave</u>
Flow	MG	CalMoTot	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Flow	mgd	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Flow	mgd	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Iron, Dissolved (as Fe)	1.0 mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Iron, Dissolved (as Fe)	2.0 mg/L	DailyMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Mercury, Total (as Hg)	1.8 ng/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Mercury, Total (as Hg)	3.2 ng/L	DailyMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Nitrogen, Nitrate, Total (as N)	mg/L	SingleVal			NoDis			NoDis			NoDis			NoDis	
pH	8.5 SU	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
pH	6.5 SU	CalMoMin	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Solids, Total Suspended (TSS)	20 mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Solids, Total Suspended (TSS)	30 mg/L	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Sulfate, Total (as SO4)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Turbidity	25 NTU	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Turbidity	NTU	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	

Surface Water Station SW001 (McKinley Mine Pit Lake overflow/discharge)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/13</u>	<u>2/13</u>	<u>3/13</u>	<u>4/13</u>	<u>5/13</u>	<u>6/13</u>	<u>7/13</u>	<u>8/13</u>	<u>9/13</u>	<u>10/13</u>	<u>11/13</u>	<u>12/13</u>	<u>Ave</u>
Bicarbonates (HCO3)	mg/L	SingleVal				214			187			197			199.333
Chloride, Total	mg/L	SingleVal				4.7			5.6			5.5			5.267
Flow, Stream, Instantaneous	cfs	SingleVal				3.8			7.81			9.37			6.993
Hardness, Calcium & Magnesium, Calculated (as CaCO3)	mg/L	SingleVal				322			286			311			306.333
pH, Field	SU	SingleVal				7.55			8.31			808			274.62
Solids, Total Dissolved (TDS)	mg/L	SingleVal				371			401			397			389.667

Note: a limit in the Limit and Units column which is demarcated by asterisks is an Intervention limit, not a hard, violation-causing limit.

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First DMR in Delta: 4/1999

Surface Water Station SW001 (McKinley Mine Pit Lake overflow/discharg)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/13</u>	<u>2/13</u>	<u>3/13</u>	<u>4/13</u>	<u>5/13</u>	<u>6/13</u>	<u>7/13</u>	<u>8/13</u>	<u>9/13</u>	<u>10/13</u>	<u>11/13</u>	<u>12/13</u>	<u>Ave</u>
Specific Conductance, Field	umh/cm	SingleVal				600.8			629			607.6			612.467
Sulfate, Total (as SO4)	mg/L	SingleVal				108.5			125			124			119.167

Surface Water Station SW002 (Unnamed Stream at Heritage Rd. crossing)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/13</u>	<u>2/13</u>	<u>3/13</u>	<u>4/13</u>	<u>5/13</u>	<u>6/13</u>	<u>7/13</u>	<u>8/13</u>	<u>9/13</u>	<u>10/13</u>	<u>11/13</u>	<u>12/13</u>	<u>Ave</u>
Bicarbonates (HCO3)	mg/L	SingleVal				271			320			280			290.333
Chloride, Total	mg/L	SingleVal				13.7			16.1			11.3			13.7
Flow, Stream, Instantaneous	cfs	SingleVal				8.5			6.67			9.92			8.363
Hardness, Calcium & Magnesium, Calculated (as CaCO3)	mg/L	SingleVal				316			306			338			320.0
pH, Field	SU	SingleVal				7.98			7.95			7.89			7.94
Solids, Total Dissolved (TDS)	mg/L	SingleVal				427			471			486			461.333
Specific Conductance, Field	umh/cm	SingleVal				702.2			775			772			749.733
Sulfate, Total (as SO4)	mg/L	SingleVal				102			96.4			130			109.467

Surface Water Station SW003 (Unnamed Stream at Judd Rd. crossing)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/13</u>	<u>2/13</u>	<u>3/13</u>	<u>4/13</u>	<u>5/13</u>	<u>6/13</u>	<u>7/13</u>	<u>8/13</u>	<u>9/13</u>	<u>10/13</u>	<u>11/13</u>	<u>12/13</u>	<u>Ave</u>
Bicarbonates (HCO3)	mg/L	SingleVal				206			199			244			216.333
Chloride, Total	mg/L	SingleVal				10.9			10.5			9.1			10.167
Flow, Stream, Instantaneous	cfs	SingleVal				11.16			13.49			14.33			12.993
Hardness, Calcium & Magnesium, Calculated (as CaCO3)	mg/L	SingleVal				241			212			290			247.667
pH, Field	SU	SingleVal				7.82			7.78			7.96			7.853
Solids, Total Dissolved (TDS)	mg/L	SingleVal				329			333			416			359.333
Specific Conductance, Field	umh/cm	SingleVal				546.9			526.6			638.5			570.667
Sulfate, Total (as SO4)	mg/L	SingleVal				70.6			50.4			97.2			72.733

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