

TABLE 2. 2005 TREATED WATER QUALITY BELOW JAPAN GULCH PLANT

PARAMETER		2005 ANALYTICAL RESULTS				2005 CANADIAN GUIDELINES	TEN YEAR RESULTS (1996-2005)			Division
Parameter Name	Units of Measure	Median Value	Samples Analyzed	Range Min. Max.			Median Value	Samples Analyzed	Range Min.-Max.	Sampling Frequency
Physical Parameters										
Alkalinity, Tota	mg/L	14.4	26	11.7	15.8		14.1	147	6.7 - 16.1	26/yr
Carbon, Dissolved Organic	mg/L	2.5	11	2.2	2.9		2.5	52	1.7 - 6.0	12/yr
Carbon, Total Organic	mg/L	2.5	11	2.2	2.8	No Guideline Required	2.5	55	1.7 - 9.5	12/yr
Colour, True	TCU	5.2	52	3.8	7.6	≤ 15 AO	5.6	285	1.4 - 14	52/yr
Conductivity @ 25 C	uS/cm	45.2	52	39.7	47.7		44.6	262	31.6 - 48.9	52/yr
Hardness	mg/L	17.6	20	15.7	18.4	No Guideline Required	17.3	70	9.5 - 19.8	26/yr
pH	pH units	7.12	52	6.73	7.40	6.5 - 8.5 AO	7.12	262	6.71 - 7.52	52/yr
Total Dissolved Solids	mg/L	25.4	40	18.9	33.0	≤ 500 AO	25.7	103	16 - 33	26/yr
Total Suspended Solids	mg/L	1.0	40	0.25	3.3		0.4	103	<0.2 - 10	26/yr
Total Solids	mg/L	26.1	40	19	31.0		27	103	17.8 - 41	26/yr
Turbidity, Grab Samples	NTU	0.41	245	0.22	0.96	1 MAC and ≤ 5 AO	0.36	1,155	0.16 - 9.6	250/yr
Water Temp., Field	degrees C	9.0	247	2.7	17.9	≤ 15 AO	9.9	1,252	2.5 - 22.1	250/yr
Non-Metallic Inorganic Chemicals										
Ammonia, Total	ug/L as N	270.6	11	177.6	432.9	No Guideline Required	238	57	109 - 581	12/yr
Bromide	mg/L as Br	0.004	12	<0.0008	0.007	0.01 IMAC (Bromate)	0.003	39	<0.0002 - 0.007	12/yr
Chloride	mg/L as Cl	3.57	1			≤ 250 AO	3.57	10	1.64 - 5.05	2/yr
Cyanide	mg/L as Cn	<0.02	3			0.2 MAC	<0.015	11	<0.002 - <0.015	2/yr
Fluoride	ug/L as F	14	1			1500 MAC	9	10	<7.0 - 42	2/yr
Nitrate, Total	ug/L as N	24.1	11	6.0	60.4	10000 MAC	11.9	57	<0.3 - 105	12/yr
Nitrite, Total	ug/L as N	<0.3	11			3.2 MAC	<0.3	54	<0.3 - 3.6	12/yr
Nitrogen, Total	mg/L as N	0.345	11	0.235	0.534		0.271	55	0.135 - 0.534	12/yr
Phosphate, Ortho, Dissolved	ug/L as P	0.34	11	<0.04	1.33		0.90	56	<0.04 - 2.93	12/yr
Phosphate, Total, Dissolved	ug/L as P	3.37	11	2.45	4.47		3.21	55	<1.15 - 8.99	12/yr
Phosphate, Total	ug/L as P	5.34	11	3.50	8.20		5.1	56	2.17 - 10.7	12/yr
Sulphate	mg/L as SO ₄	1.58	11	1.08	1.9	≤ 500 AO	1.56	56	<0.86 - 3.01	12/yr
Sulphide	mg/L as H ₂ S	<0.005	1			≤ 0.05 AO	<0.05	9	<0.015 - <0.05	Special
Sulfur	mg/L as S	0.6	12	<0.5	0.6		0.6	36	<0.5 - 0.8	12/yr

mg/L = milligrams per litre
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Metallic Inorganic Chemicals										
Aluminum	mg/L as Al	<0.02	14	<0.02	0.06	0.1 (Guideline)	<0.02	39	<0.01 - 0.16	12/yr
Antimony	mg/L as Sb	<0.0005	2			0.006 IMAC	<0.0005	6	<0.000005 - <0.00005	2/yr
Arsenic	mg/L as As	<0.0005	3	<0.0003	<0.0005	0.005 MAC	<0.0005	7	<0.00008 - <0.0005	2/yr
Barium	mg/L as Ba	0.004	14	<0.004	0.009	1.0 MAC	0.004	42	<0.002 - 0.012	12/yr
Beryllium	mg/L as Be	<0.0002	14	<0.0002	<0.003		<0.0002	40	<0.0002 - <0.003	12/yr
Bismuth	mg/L as Bi	<0.05	12				<0.05	35	<0.05 - 0.05	12/yr
Boron	mg/L as B	<0.008	14	<0.008	0.064	5 IMAC	<0.008	42	<0.004 - 0.202	12/yr
Cadmium	mg/L as Cd	<0.002	12	<0.0001	<0.002	0.005 MAC	<0.002	34	<0.00002 - <0.002	12/yr
Calcium	mg/L as Ca	5.03	14	4.64	5.22	No Guideline Required	5.06	42	2.84 - 5.87	12/yr
Chromium	mg/L as Cr	<0.005	14	<0.005	0.012	0.05 MAC	<0.005	39	<0.0003 - 0.019	12/yr
Cobalt	mg/L as Co	<0.005	14	<0.0005	0.021		<0.005	39	<0.00002 - 0.02	12/yr
Copper	mg/L as Cu	0.012	14	<0.007	0.029	≤ 1.0 AO	0.011	39	<0.003 - 0.017	12/yr
Gold	mg/L as Au	<0.04	2				<0.04	6	<0.0000001 - <0.04	Irregular
Iron	mg/L as Fe	0.029	14	0.014	0.08	≤ 0.3 AO	0.040	42	0.014 - 0.102	12/yr
Lanthanum	mg/L as La	<0.02	2				<0.02	6	<0.000001 - 0.02	Irregular
Lead	mg/L as Pb	0.0016	2			0.010 MAC	0.0010	6	0.00003 - 0.0016	2/yr
Magnesium	mg/L as Mg	1.20	14	1.14	1.23	No Guideline Required	1.20	42	0.59 - 1.26	12/yr
Manganese	mg/L as Mn	0.008	14	<0.004	0.025	≤ 0.05 AO	0.007	42	<0.003 - 0.035	12/yr
Mercury, Methyl	ng/L as Hg	<0.01	12	<0.01	0.02		<0.025	37	<0.01 - 0.065	12/yr
Mercury, Total	ng/L as Hg	0.65	13	0.45	1.3	1000 MAC	0.840	38	<0.05 - 1.34	12/yr
Molybdenum	mg/L as Mo	<0.005	14	<0.005	0.02		<0.005	42	<0.00003 - 0.026	12/yr
Nickel	mg/L as Ni	<0.008	14	<0.008	<0.05		<0.008	42	0.0002 - <0.05	12/yr
Phosphorus	mg/L as P	<0.1	14	<0.065	<0.1		<0.1	42	0.02 - <0.1	12/yr
Potassium	mg/L as K	<1.0	14	<0.006	<1.0		<1.0	45	0.03 - <1.0	12/yr
Scandium	mg/L as Sc	<0.05	2				<0.05	6	0.001 - <0.05	Irregular
Selenium	mg/L as Se	<0.001	3	<0.0002	<0.001	0.01 MAC	<0.001	13	<0.0001 - 0.003	2/yr
Silicon	mg/L as Si	1.87	14	1.29	1.99		1.84	19	1.09 - 2.19	12/yr
Silver	mg/L as Ag	<0.01	14	<0.0001	<0.02	No Guideline Required	<0.01	39	0.00001 - <0.01	12/yr
Sodium	mg/L as Na	1.76	15	1.61	2.18	≤ 200 AO	1.7	45	<0.05 - 2.27	12/yr
Strontium	mg/L as Sr	0.016	14	0.014	0.016		0.016	42	0.011 - 0.018	12/yr
Tellurium	mg/L as Te						<0.05	23		Irregular
Thallium	mg/L as Tl	<0.03	12				<0.03	34	0.00002 - <0.030	12/yr
Tin	mg/L as Sn	<0.02	12				<0.02	38	<0.00002 - <0.06	12/yr
Titanium	mg/L as Ti	<0.003	14	<0.003	<0.01		<0.003	42	0.0007 - <0.01	12/yr
Tungsten	mg/L as W	<0.05	2				<0.05	6	<0.000005 - <0.05	Irregular
Uranium	mg/L as U	<0.0001	1				<0.00001	8	<0.000005 - 0.0001	1/yr
Vanadium	mg/L as V	<0.005	14	<0.005	<0.01		<0.005	42	0.0002 - <0.01	12/yr
Zinc	mg/L as Zn	<0.005	14	<0.005	0.009	≤ 5.0 AO	<0.005	42	0.0006 - 0.009	12/yr
Zirconium	mg/L as Zr	<0.005	12				<0.005	37	0.0000004 - <0.005	12/yr

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Microbial Parameters										
Coliform Bacteria										
Coliform, Tota	CFU/100 mL	0	248			0 MAC	0	1,269	0 - 16	250/yr
Coliform, Feca	CFU/100 mL	0	248			0 MAC	0	1,268		250/yr
Coliform, Background	CFU/100 mL	0	248	0	102	200 MAC	0	1,269	0 - 3,200	250/yr
Heterotrophic Bacteria										
Hetero. Plate Count, 35C (2 day)	CFU/1 mL	Discontinued in 2005					1	994	0 - 300	250/yr
Hetero. Plate Count, 28C (7 day)	CFU/1 mL	0	248	0	1,380		10	1,244	0 - 8,600	250/yr
<i>Aeromonas</i> species	CFU/100 mL	0	242	0	0		0	525	0 - 44	Special
Disinfectants										
Disinfectants										
Chlorine, Total Residual	mg/L as Cl ₂	1.22	250	1	1.58	3.0 MAC (chloramines)	1.25	1,296	0 - 1.79	250/yr
Dichloramine	mg/L as Cl ₂	0.1	232	<0.01	0.52		0.1	466	<0.01 - 0.64	250/yr
Monochloramine	mg/L as Cl ₂	1.03	232	0.1	1.38		1.04	466	0.10 - 1.70	250/yr
Biological Toxins										
Cyanobacterial Toxins										
Anatoxin ε	ug/L	Analyzed for Raw Water					<0.16	9		Special
Microcystin-LR	ug/L	Analyzed for Raw Water				1.5 (Guideline)	<0.16	10		Special
Other Microcystins	ug/L						<0.16	10		Special

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Disinfection By-Products										
Trihalomethanes (THMs)										
Bromodichloromethane (BDCM)	ug/L	1.1	6	<0.8	1.7	16 MAC	1	37	<0.3 - 1.7	6/yr
Bromoform (BRFM)	ug/L	<0.6	6				<0.6	37	<0.2 - <2.0	6/yr
Chloroform (CHLF)	ug/L	10.2	6	3.1	10.7		11	37	3.1 - 18.2	6/yr
Dibromochloromethane (DBCM)	ug/L	<0.5	6				<0.5	37	<0.1 - <1.0	6/yr
Total Trihalomethanes (TTHM)	ug/L	11.2	6	3.1	12.3	100 MAC	12.0	38	3.1 - 19.6	6/yr
Haloacetic Acids (HAAs)										
						HAA's Scheduled for Review				
Bromochloroacetic Acid (BCAA)	ug/L	0.42	6	0.29	0.46		0.34	28	0.21 - <1.0	6/yr
Bromodichloroacetic Acid (BDCAA)	ug/L	<0.2	6				<0.2	28	<0.2 - <1.0	6/yr
Chlorodibromoacetic Acid (CDBAA)	ug/L	<0.5	6				<0.5	28	<0.5 - <2.0	6/yr
Dibromoacetic Acid* (DBAA)	ug/L	<0.2	6				<0.2	27	<0.2 - <1.0	6/yr
Dichloroacetic Acid* (DCAA)	ug/L	9.54	6	4.89	11.3		8.70	28	<1.0 - 12.7	6/yr
Monobromoacetic Acid* (MBAA)	ug/L	<0.2	6				<0.2	28	<0.2 - <1.0	6/yr
Monochloroacetic Acid* (MCAA)	ug/L	<0.5	6				<0.5	28	<0.5 - <2.0	6/yr
Tribromoacetic Acid (TBAA)	ug/L	<1.0	6				<1.0	27	<1.0 - <4.0	6/yr
Trichloroacetic Acid* (TCAA)	ug/L	4.68	6	1.78	5.24		4.92	28	<1.0 - 8.49	6/yr
Haloacetic Acids (*5 Total, HAA5)	ug/L	14.2	6	6.67	15.9		14.7	28	<1.0 - 18.8	6/yr
Haloacetic Acids (9 Total, HAA9)	ug/L	14.6	6	6.95	16.3		15.0	28	<4.0 - 19.2	6/yr

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