

Table R1-1

REASONABLE POTENTIAL ANALYSIS
 HYPERION TREATMENT PLANT (OUTFALL 001)
 (CA0109991, CI-1492)

Constituent	Unit	Jan-99	Feb-99	Mar-99	Apr-99	May-99	Jun-99	Jul-99	Aug-99	Sep-99	Oct-99	Nov-99	Dec-99
Water Quality Objectives													
Marine Aquatic Life Protection													
ARSENIC	µg/L	2.5	1	1	2.75	1.82	1.71	2.27	1.67	2.54	2.3	1.53	1.88
CADMIUM	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
CHROMIUM VI	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
COPPER*	µg/L	33	21.2	14.7	21.4	14.3	11.1	23.7	12.8	14.7	5	11.5	5
LEAD	µg/L	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
MERCURY	µg/L	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
NICKEL	µg/L	2.5	10.4	16.7	6.5	18.3	9.6	12.2	14.3	9.08	6.55	10.2	14.3
SELENIUM	µg/L	0.5	0.5	0.5	0.5	1.76	0.5	0.5	0.5	0.5	1	1.29	0.5
SILVER	µg/L	0.2	2.85	2.2	2.42	2.24	1.14	1.16	1.04	1.72	0.87	1.27	2.23
ZINC	µg/L	35	58.1	23.2	42.6	37.4	22.3	24	28	66.4	32	32.9	37.5
CYANIDE*	µg/L	7	9	6	1	7	1	7	3	5	8	2	12
TOTAL CHLORINE RESIDUAL*	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
AMMONIA as N*	mg/L	27.1	29.8	28.2	28.5	24.9	29.2	26.8	25.4	27.7	25	27.5	27.9
CHRONIC TOXICITY*	TUc	7.5	7.5	84	7.5	7.5	7.5	10	48	10	48	48	10
Human Health Protection (noncarcinogens)													
CHROMIUM (III) [using Cr total data]	µg/L	2	2	2	2	18.4	2	2	6	2	2	2	2

Underlined numbers used in calculations are one-half of MDLs for data showing less than MDL results.

Chlorine residual analysis was conducted daily. Daily maximum was reported.

* These constituents showed RPs.

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 HYPERION TREATMENT PLANT (OUTFALL 001)
 (CA0109991, CI-1492)

Constituent	Unit	Jan-00	Feb-00	Mar-00	Apr-00	May-00	Jun-00	Jul-00	Aug-00	Sep-00	Oct-00	Nov-00	Dec-00
Water Quality Objectives													
Marine Aquatic Life Protection													
ARSENIC	µg/L	<u>0.5</u>	1.62	2.36	1.4	1.9	4	2.22	2.06	2.65	4.1	2.39	4.72
CADMIUM	µg/L	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	<1	<1
CHROMIUM VI	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
COPPER*	µg/L	12	13.1	11.6	18.3	13.2	<u>5</u>	<u>5</u>	<u>5</u>	17.8	17.8	<u>5</u>	28.4
LEAD	µg/L	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>2.5</u>	<u>2.5</u>	<u>2.5</u>	<u>2.5</u>	<u>2.5</u>	<u>2.5</u>	<u>2.5</u>	<u>2.5</u>
MERCURY	µg/L	<u>0.15</u>	<u>0.15</u>	<u>0.15</u>	<u>0.15</u>	<u>0.15</u>	<u>0.15</u>	<u>0.15</u>	0.3	<u>0.15</u>	<u>0.15</u>	<u>0.15</u>	<u>0.15</u>
NICKEL	µg/L	<u>2.5</u>	11.2	13.7	13.9	<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>	25.1	<u>10</u>	<u>10</u>	<u>10</u>
SELENIUM	µg/L	1.5	1.38	1.12	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	2.11	1.1	1.14	1.18	<u>0.5</u>
SILVER	µg/L	1.45	2.02	1.62	2.13	<u>0.31</u>	<u>0.31</u>	<u>0.31</u>	<u>0.31</u>	<u>0.31</u>	<u>0.3</u>	<u>0.31</u>	2.6
ZINC	µg/L	21.6	26.2	33.1	29.8	26.7	23	13	29.6	53.6	31.3	34	25
CYANIDE*	µg/L	7	3	3	2	5	6	8	5	13	<u>1</u>	8	7
TOTAL CHLORINE RESIDUAL*	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
AMMONIA as N*	mg/L	28.7	28.2	27.7	26.8	29.2	31.2	30.6	29.4	26.4	28.9	29.4	33.8
CHRONIC TOXICITY*	TUc	48	10	48	48	48	48	10	48	10	84	48	
Human Health Protection (noncarcinogens)													
CHROMIUM (III) [using Cr total data]	µg/L	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>

Underlined numbers used in calculations are one-half of MDLs for data showing less than MDL results.

Chlorine residual analysis was conducted daily. Daily maximum was reported.

* These constituents showed RPs.

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REASONABLE POTENTIAL ANALYSIS
 HYPERION TREATMENT PLANT (OUTFALL 001)
 (CA0109991, CI-1492)

Constituent	Unit	Jan-01	Feb-01	Mar-01	Apr-01	May-01	Jun-01	Jul-01	Aug-01	Sep-01	Oct-01	Nov-01	Dec-01
Water Quality Objectives													
Marine Aquatic Life Protection													
ARSENIC	µg/L	2.12	3.13	1.88	2.03	1.36	1.72	2.58	1.6	3.67	4.64	2.69	3.09
CADMIUM	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.6	<1
CHROMIUM VI	µg/L	<10	<10	<10	<10	<10	<10	10	<10	<10	<10	<10	<10
COPPER*	µg/L	34.6	15.6	10.3	27.2	13.2	5	11.4	15.4	14.4	12.4	22.5	12
LEAD	µg/L	2.5	2.5	2.5	2.5	2.5	2.5	5	2.5	2.5	2.5	2.5	2.5
MERCURY	µg/L	0.15	0.15	0.15	0.15	0.15	0.15	0.3	0.15	0.15	0.15	0.15	0.15
NICKEL	µg/L	10	22.6	10	10	10	10	10	10	10	10	10	10
SELENIUM	µg/L	1.17	1.62	1.17	0.5	1.15	0.5	1	0.5	2	3.57	3.74	0.5
SILVER	µg/L	0.31	0.9	2.4	0.31	0.31	1.4	0.62	0.5	0.31	0.31	0.9	0.31
ZINC	µg/L	42.8	38	23.5	22.8	35	37.7	20.8	32.9	20.9	5	40.8	19
CYANIDE*	µg/L	4	3	6	4	6	5	1	10	1	16	1	5
TOTAL CHLORINE RESIDUAL*	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
AMMONIA as N*	mg/L	34.4	32.8	31.5	33.4	31.8	32.6	30.4	30.1	27.8	27.8	30.1	31.5
CHRONIC TOXICITY*	TUc	48	48	10	48	48	48	10	10	48	48	48	48
Human Health Protection (noncarcinogens)													
CHROMIUM (III) [using Cr total data]	µg/L	12.6	5	5	5	5	5	5	5	5	5	5	5

Underlined numbers used in calculations are one-half of MDLs for data showing less than MDL results.

Chlorine residual analysis was conducted daily. Daily maximum was reported.

* These constituents showed RPs.

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REASONABLE POTENTIAL ANALYSIS
 HYPERION TREATMENT PLANT (OUTFALL 001)
 (CA0109991, CI-1492)

Constituent	Unit	Jan-02	Feb-02	Mar-02	Apr-02	May-02	Jun-02	Jul-02	Aug-02	Sep-02	Oct-02	Nov-02	Dec-02
Water Quality Objectives													
Marine Aquatic Life Protection													
ARSENIC	µg/L	3.8	2.2	3.2	1.78	1.2	3.4	2.9	4	2.7	4.4	2.6	1.7
CADMIUM	µg/L	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
CHROMIUM VI	µg/L	< 10	< 10	< 10	< 10	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
COPPER*	µg/L	27	17	13	20	6	4.2	10	16	8	5.5	10.9	11.8
LEAD	µg/L	<u>2.5</u>	11	<u>2.5</u>	<u>2.5</u>	10.1	<u>1</u>	<u>1</u>	5	3.2	<u>1</u>	<u>1</u>	<u>1</u>
MERCURY	µg/L	<u>0.15</u>	<u>0.15</u>	<u>0.15</u>	<u>0.15</u>	0.03	0.02	0.05	0.078	<u>0.01</u>	0.07	<u>0.01</u>	0.024
NICKEL	µg/L	<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>	10	<u>2.5</u>	6	33	8	7.2	10.8	15.1
SELENIUM	µg/L	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	1.32	1.5	2	1.4	1	0.8	1.1	1.3	1.4
SILVER	µg/L	<u>0.31</u>	<u>0.31</u>	<u>0.31</u>	<u>0.31</u>	<u>0.25</u>	<u>0.25</u>	1.2	<u>0.25</u>	<u>0.25</u>	<u>0.25</u>	0.7	3.7
ZINC	µg/L	22	23	21	26	<u>8.6</u>	<u>8.6</u>	<u>8.6</u>	18	<u>8.6</u>	<u>8.6</u>	<u>8.6</u>	18.1
CYANIDE*	µg/L	<u>1</u>	5	4	5	3	<u>1</u>	<u>1</u>	8	<u>1</u>	3.6	3.6	<u>1</u>
TOTAL CHLORINE RESIDUAL*	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
AMMONIA as N*	mg/L	34.7	32.1	29.8	30.9	35.7	32.5	31.7	30.7	30.4	32.3	33.3	36.1
CHRONIC TOXICITY*	TUc	48	48	48	48	48	48	48	48	48	48	48	48
Human Health Protection (noncarcinogens)													
CHROMIUM (III) [using Cr total data]	µg/L	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	3.4	3	3.1	<u>0.5</u>	<u>0.5</u>

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REASONABLE POTENTIAL ANALYSIS
 HYPERION TREATMENT PLANT (OUTFALL 001)
 (CA0109991, CI-1492)

Constituent	Unit	Jan-03	Feb-03	Mar-03	Apr-03	May-03	June 1, 2003	June 12, 2003	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03
Water Quality Objectives													
Marine Aquatic Life Protection													
ARSENIC	µg/L	1.4	1.9	1.1	3	2.22	2.6	2.2	2.4	3.1	3.1	5	3.5
CADMIUM	µg/L	<0.08	<0.08	<0.08	0.15	0.16	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
CHROMIUM VI	µg/L	<1	<2	2	<2	<2	<2	<2	<2	4	2	<2	<2
COPPER*	µg/L	10	11	11	12	16	11	18	12.3	12.8	13.3	18.6	16.9
LEAD	µg/L	1	1	1	1	1.92	1	1.5	4.5	1.5	2.52	3	3
MERCURY	µg/L	0.16	0.08	0.011	0.13	0.011	0.011	0.18	0.011	0.011	0.011	0.011	0.011
NICKEL	µg/L	9.9	12	9.5	7.67	10.6	10.4	9.14	8.12	11.8	8.8	9.56	8.11
SELENIUM	µg/L	2	1.6	0.24	0.4	0.54	1	0.78	1.2	1.2	1	1.7	1.6
SILVER	µg/L	0.2	0.2	0.2	0.2	1.79	0.8	0.6	1.3	1.49	0.64	1.11	1.64
ZINC	µg/L	12	14	16	19	21	16	24	20.4	21	12	22	22.5
CYANIDE*	µg/L	1	3.8	1	5.2	1	4	1	6	3	2	4	2
TOTAL CHLORINE RESIDUAL*	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
AMMONIA as N*	mg/L	37	35.2	36	32.7	36.3	36.4	32.2	31.8	36.9	32.3	35.6	34.5
CHRONIC TOXICITY*	TUc	48	48	10	48	48	10		10	10		10	10
Human Health Protection (noncarcinogens)													
CHROMIUM (III) [using Cr total data]	µg/L	0.8	1.1	0.35	1.29	0.94	0.35	1.59	1.2	1.1	0.8	1.2	1.7

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Chlorine residual analysis was conducted daily. Daily maximum was reported.

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 HYPERION TREATMENT PLANT (OUTFALL 001)
 (CA0109991, CI-1492)

Constituent	Unit	Dec-03	January 1, 2004	January 27, 2004	Feb-04	Mar-04	Apr-04	May-04	June 2, 2004	June 16, 2004
Water Quality Objectives										
Marine Aquatic Life Protection										
ARSENIC	µg/L	2.4	2.9	1.7	1.9	2.8	2	1.7	1.2	3.2
CADMIUM	µg/L	<0.08	<0.16	0.19	0.28	0.63	0.24	<0.08	<0.08	<0.08
CHROMIUM VI	µg/L	<2	<2		<2	<2	<2	<2	<2	
COPPER*	µg/L	18	14.8	38.7	16.8	15.4	20.2	22.4	14.4	26.4
LEAD	µg/L	1.36	1.05	2.97	0.98	14.3	7	1.5	1.5	0.76
MERCURY	µg/L	0.094	<u>0.011</u>	<u>0.011</u>	<u>0.011</u>	0.038	<u>0.011</u>	<u>0.011</u>	<u>0.011</u>	0.025
NICKEL	µg/L	6.13	5.76	12.3	5.7	4.48	8.36	7.12	8.02	7.84
SELENIUM	µg/L	1.2	1.3	1.3	1.4	1.2	0.8	0.7	0.2	0.6
SILVER	µg/L	1	1.97	1.13	1.08	0.8	1.9	1.2	2.1	2.4
ZINC	µg/L	20.2	17.9	45.9	22	15	16.7	21.2	21.6	23.5
CYANIDE*	µg/L	<u>2</u>	6	5	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	5
TOTAL CHLORINE RESIDUAL*	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
AMMONIA as N*	mg/L	35.4	35.2		32.5	33.7	36.3	36.5	33.3	
CHRONIC TOXICITY*	TUc						48	48	10	
Human Health Protection (noncarcinogens)										
CHROMIUM (III) [using Cr total data]	µg/L	1.6	<u>0.5</u>	2	1.2	1.1	1.9	1.7	2.6	1.1

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Constituent	Unit	Number of Nondetect	Number of Samples	Percent of Nondetect	Maximum Detected Effluent Concentration	Maximum Reported Effluent Concentration (max MDL if 100% ND or max MDL > max detect)	Standard Deviation	Mean	CV (set as 0.6 if nondetect >80%)	Multiplier	Projected Maximum Effluent Concentration (99/99)	Dilution Ratio	Background Seawater Concentration	Projected Maximum Receiving Water Concentration
Water Quality Objectives														
Marine Aquatic Life Protection														
ARSENIC	µg/L	1	69	1%	5	5	0.958068	2.443478	0.39	1.36	6.7889	13	3	3.2706
CADMIUM	µg/L	63	69	91%	0.63	2			0.6	1.57	3.1319	13		0.2237
CHROMIUM VI	µg/L	62	66	94%	10	10			0.6	1.59	15.8524	13		1.1323
COPPER*	µg/L	7	69	10%	38.7	38.7	7.242182	14.98551	0.48	1.45	56.0580	13	2	5.8613
LEAD	µg/L	52	69	75%	14.3	14.3	2.297017	2.502319	0.92	1.88	26.9118	13		1.9223
MERCURY	µg/L	54	69	78%	0.3	0.3	0.070651	0.108014	0.65	1.62	0.4861	13	0.0005	0.0352
NICKEL	µg/L	25	69	36%	33	33	4.652611	10.34116	0.45	1.42	46.7005	13		3.3358
SELENIUM	µg/L	21	69	30%	3.74	3.74	0.659504	1.062029	0.62	1.59	5.9357	13		0.4240
SILVER	µg/L	28	69	41%	3.7	3.7	0.829103	1.03971	0.80	1.76	6.5257	13	0.16	0.6147
ZINC	µg/L	7	69	10%	66.4	66.4	11.87762	25.05942	0.47	1.44	95.5638	13	8	14.2546
CYANIDE*	µg/L	23	69	33%	16	16	3.134923	4.307246	0.73	1.69	27.1102	13		1.9364
TOTAL CHLORINE RESIDUAL*	mg/L	NA	2369	100%	0.4	0.4			0.6	0.73	0.2931	13		0.0209
AMMONIA as N*	mg/L	0	67	0%	37	37	3.268641	31.3806	0.10	1.09	40.3040	13		2.8789
CHRONIC TOXICITY*	TUc	7	59	12%	84	84	20.61698	35.48305	0.58	1.61	135.5618	13		9.6830
Human Health Protection (noncarcinogens)														
CHROMIUM (III) [using Cr total data]	µg/L	44	69	64%	18.4	18.4	2.830892	3.161159	0.90	1.86	34.2265	13		2.4447

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 HYPERION TREATMENT PLANT (OUTFALL 001)
 (CA0109991, CI-1492)

Constituent	Unit	Ocean Plan Water Quality Objectives	REASONABLE POTENTIAL (RP)	Calculated Effluent Limitations	Maximum MDL Reported (Jan 2003 - Jun 2004)	Performance Goal (PG) = MDLx 5	PG = 95th Percentile (if nondetect < 80%)	Maximum Detected Effluent Concentration	Proposed Effluent Limits	Possible PG	Proposed PG	Basis for PG
Water Quality Objectives												
Marine Aquatic Life Protection												
ARSENIC	µg/L	8	No	73	0.4	2	3.5	5	No Limit	3.5	3.5	95th percentile
CADMIUM	µg/L	1	No	14	0.16	0.8		0.63	No Limit	0.63	0.63	Max eff conc
CHROMIUM VI	µg/L	2	No	28	2	10		10	No Limit	10	10	from MDL
COPPER*	µg/L	3	Yes	16	3	15	23	38.7	16	23	No PG	--
LEAD	µg/L	2	No	28	3	15	3.8	14.3	No Limit	3.8	3.8	95th percentile
MERCURY	µg/L	0.04	No	0.5535	0.022	0.11	0.34	0.3	No Limit	0.3	0.3	Max eff conc
NICKEL	µg/L	5	No	70	0.48	2.4	15	33	No Limit	15	15	95th percentile
SELENIUM	µg/L	15	No	210	0.2	1	1.7	3.74	No Limit	1.7	1.7	95th percentile
SILVER	µg/L	0.7	No	7.72	0.4	2	2.2	3.7	No Limit	2.2	2.2	95th percentile
ZINC	µg/L	20	No	176	4	20	39	66.4	No Limit	39	39	95th percentile
CYANIDE*	µg/L	1	Yes	14	4	20	8.3	16	14	8.3	8.3	95th percentile
TOTAL CHLORINE RESIDUAL*	mg/L	0.002	Yes	0.028	0.1	0.5		0.4	0.028	0.4	No PG	--
AMMONIA as N*	mg/L	0.6	Yes	8.4			36.3	37	8.4	36.3	No PG	95th percentile (based on 2003 & 2004 data)
CHRONIC TOXICITY*	TUc	1	Yes	14		--		84	14			
Human Health Protection (noncarcinogens)												
CHROMIUM (III) [using Cr total data]	µg/L	190,000	No	2660000	1.4	7	6.6	18.4	No Limit	6.6	6.6	95th percentile

Underlined numbers used in calculations are one-half of MDLs for data showing less than MDL results.

Chlorine residual analysis was conducted daily. Daily maximum was reported.

* These constituents showed RPs.