APPENDIX B

PTTW Water Quality Monitoring

GEO KAMP LIMITED

GEO KAMP LIMITED

Grafton - Hardness

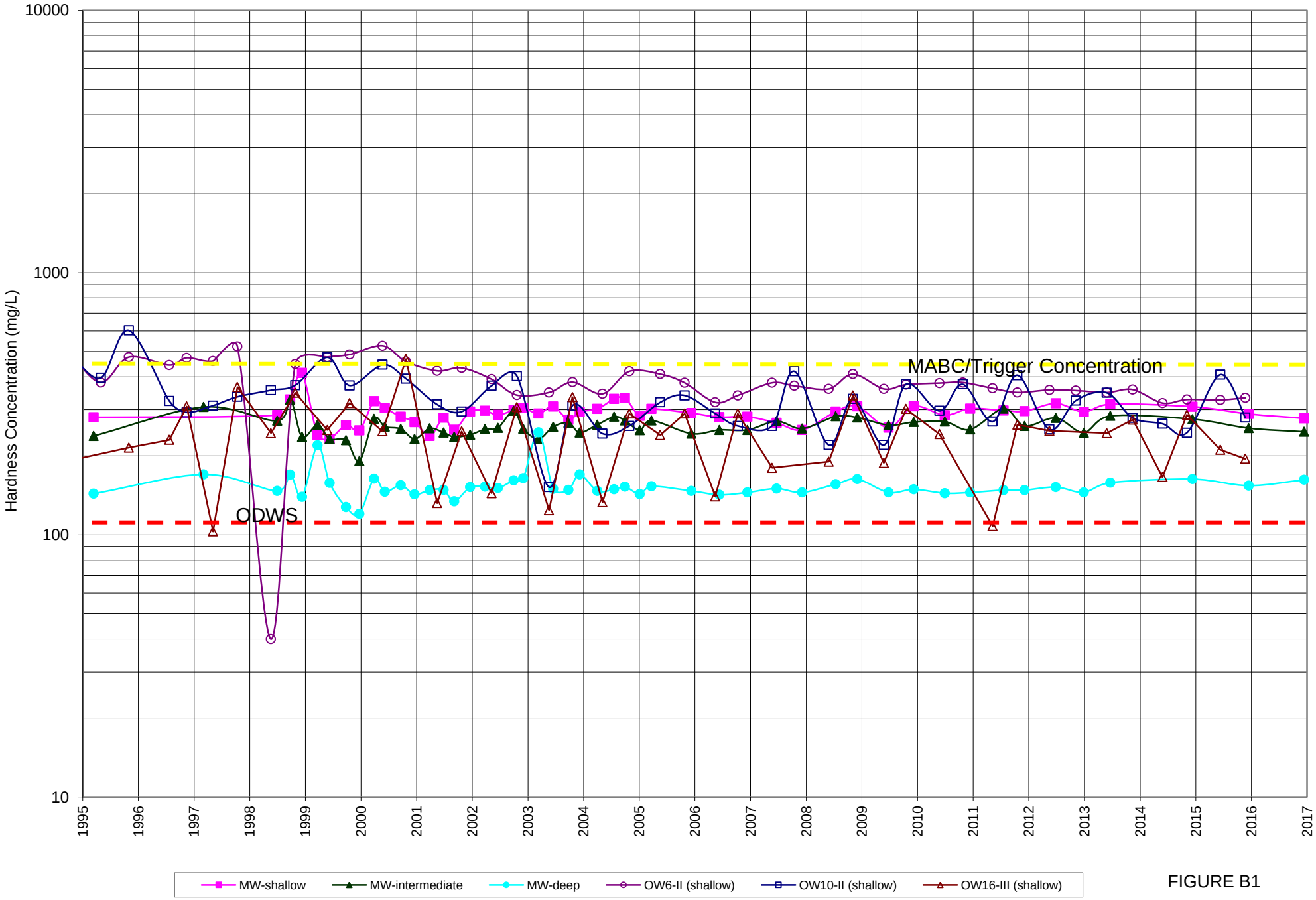

FIGURE B1

GEO KAMP LIMITED

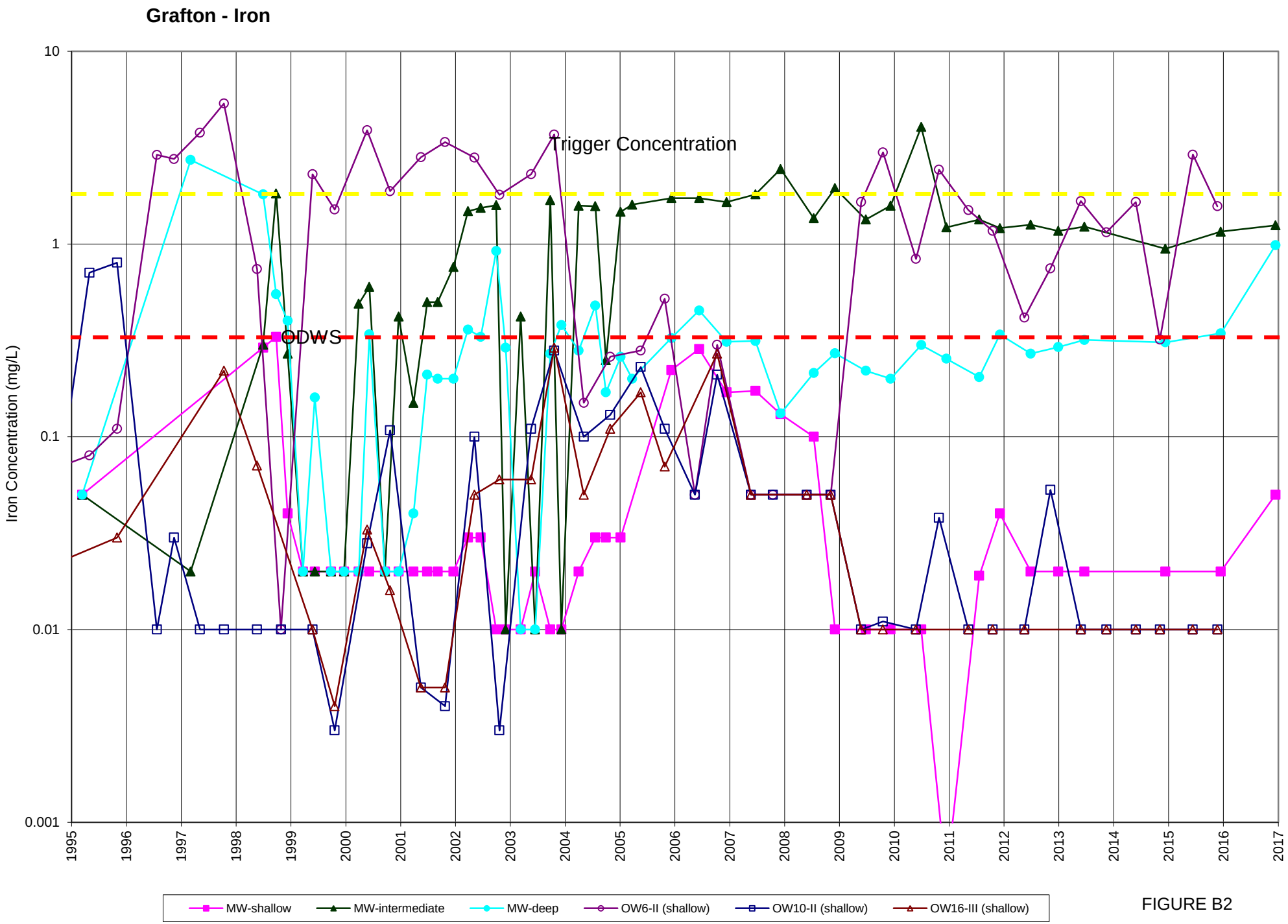

FIGURE B2

GEO KAMP LIMITED

Grafton - Chloride

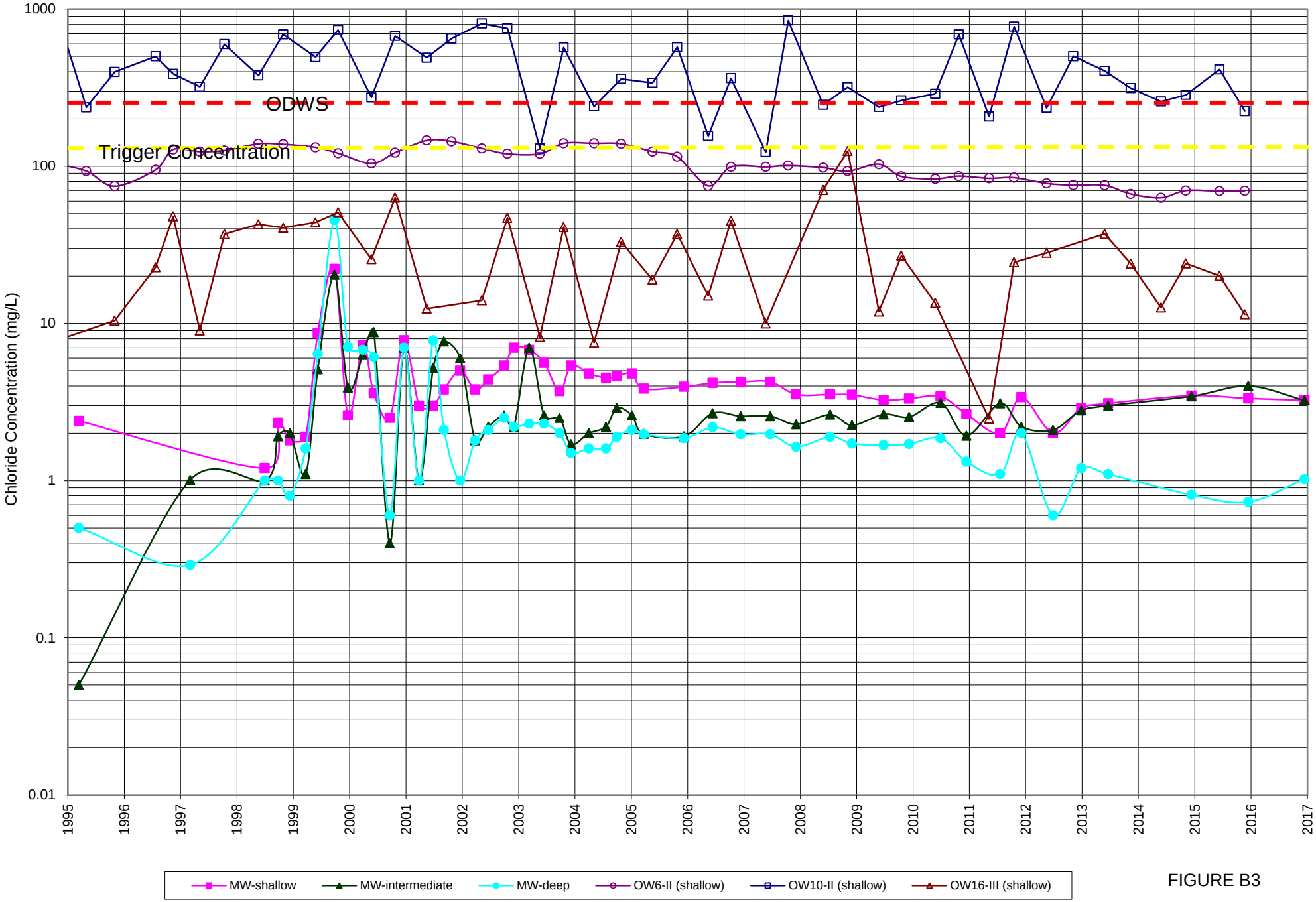

FIGURE B3

GEO KAMP LIMITED

Grafton - Alkalinity

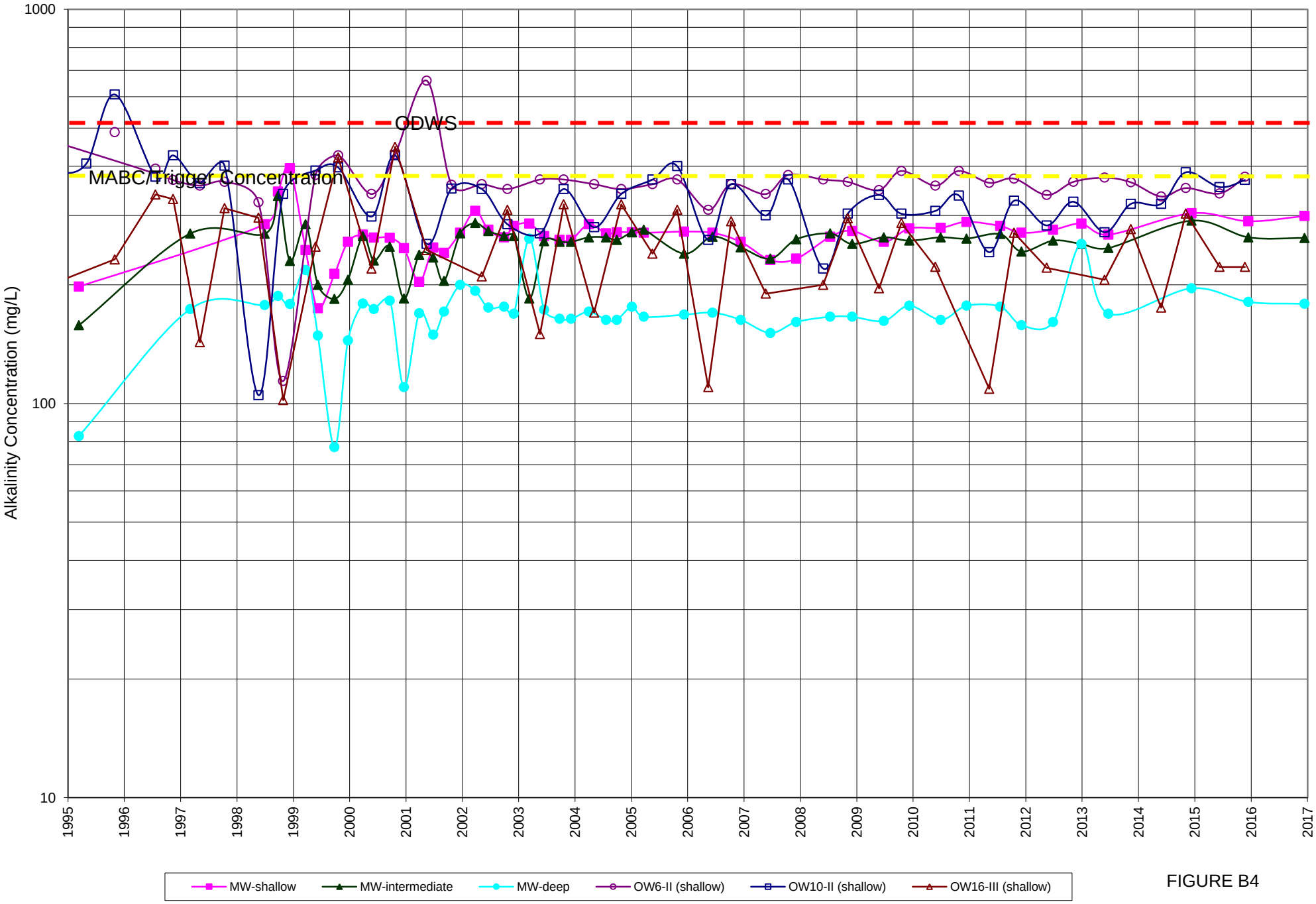

FIGURE B4

Grafton - TDS

GEO KAMP LIMITED

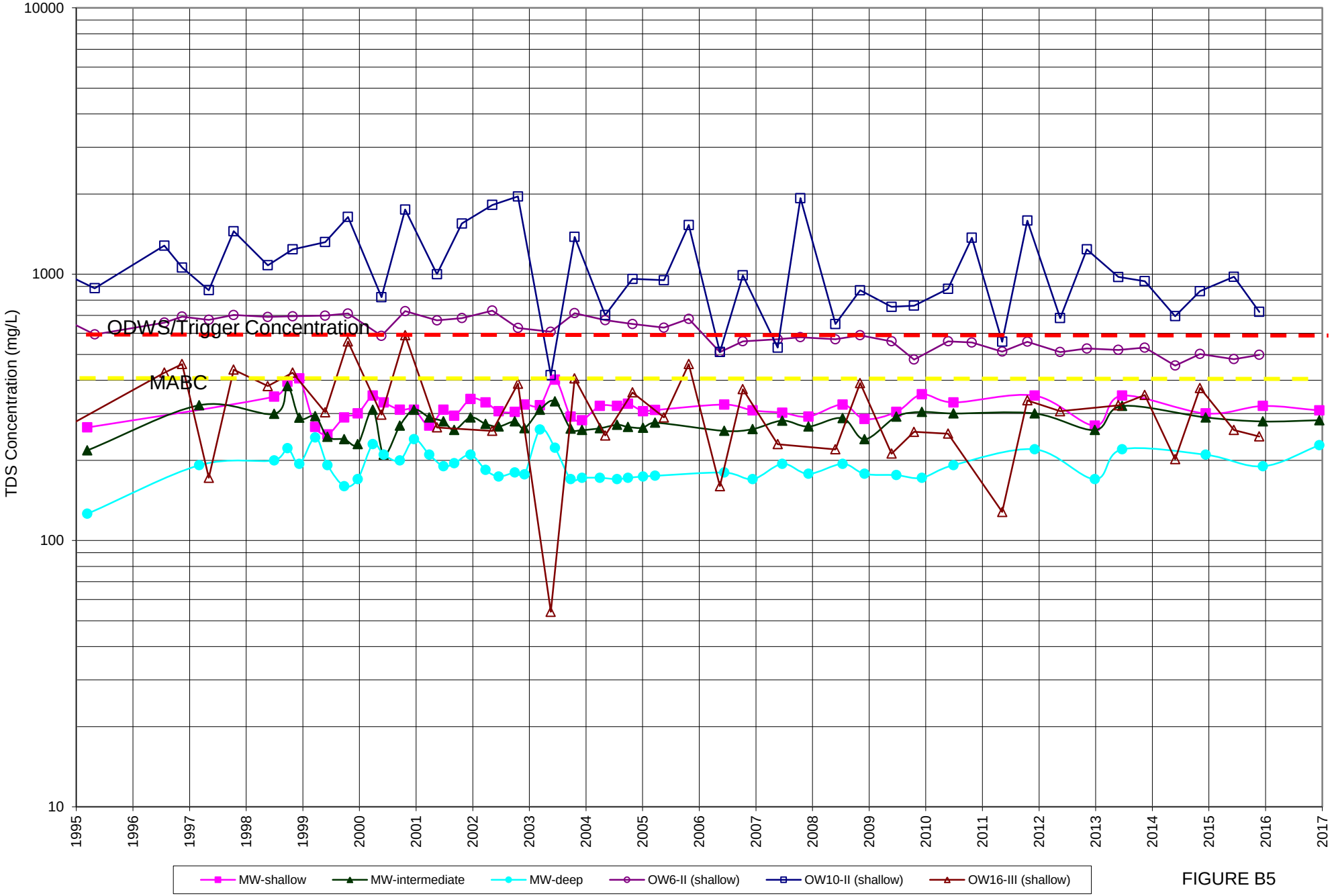

FIGURE B5

GEO KAMP LIMITED
Monitoring Well-SHALLOW

Parameter	Units	ODWS	14-Mar-95 FAL	1-Jul-98 FAL	25-Sep-98 FAL	11-Dec-98 FAL	23-Mar-99 FAL	10-Jun-99 FAL	26-Sep-99 FAL	22-Dec-99 FAL	28-Mar-00 FAL	7-Jun-00 FAL	19-Sep-00 FAL	19-Dec-00 FAL	28-Mar-01 FAL
Calcium	mg/L	NA	-	88.04	99.69	79.001	56.230	65.420	80.350	77.030	98.220	92.210	85.670	81.710	67.820
Sodium	mg/L	200	2.72	6.8	6.85	4.2	3.8	2.8	8.3	8.6	10.7	10.5	8.1	9.6	9.3
Copper	mg/L	1.0	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Manganese	mg/L	0.05	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	mg/L	NA	-	15.94	18.99	52.001	23.790	16.450	14.600	13.760	18.640	17.690	16.320	15.480	16.410
Potassium	mg/L	NA	-	<0.1	1.55	1.3	0.9	0.7	0.9	0.5	1.3	1.0	1.3	1.0	0.9
Iron	mg/L	0.30	<0.05	0.29	**0.33**	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Zinc	mg/L	5.0	<0.05	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aluminum	mg/L	0.10	<0.01	**0.74**	<0.03	**0.21**	<0.03	<0.03	0.04	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Lead	mg/L	0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sulphate	mg/L	500	28.18	38.8	31.61	15.1	18.5	34.7	28.4	27.8	34	29.7	19.6	30.1	37.5
Chloride	mg/L	250	2.4	1.2	2.33	1.8	1.9	8.7	22.2	2.6	7.3	3.6	2.5	7.8	3
Nitrate & Nitrite-N	mg/L	10	<0.05	0.14	0.19	0.31	0.22	<0.05	0.47	1.18	0.6	0.16	0.19	0.27	0.27
Carbonate	mg/L	NA	-	<1.00	0.54	<1.00	<1.00	<1.00	1.81	<1.00	3.21	1.24	2.4	<1.00	<1.00
Bicarbonate	mg/L	NA	-	284.7	344.46	394.4	244.9	174.1	211.3	256.8	264.9	262.2	260.8	246.8	203.3
Ortho Phosphate	mg/L	NA	-	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fluoride	mg/L	1.5	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Alkalinity	mg/L	30-500	198	285	345	395	245.0	174.4	213.1	257.2	268.2	263.5	263.2	247.6	203.5
Ammonia-N	mg/L	NA	-	0.1	0.10	0.15	<0.05	<0.05	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pH	units	6.5-8.5	6.98	7.02	7.22	7.21	6.50	7.27	7.96	7.26	8.11	7.70	7.99	7.55	7.01
Hardness	mg/L	80-100	**280.7**	**286.52**	**328.25**	**414.17**	**239.69**	**232.08**	**261.71**	**249.91**	**323.22**	**304.23**	**282.18**	**268.78**	**237.93**
Turbidity	NTU	5	0.22	**310**	**85.0**	**940.0**	**6.3**	**68.0**	1.8	0.3	<0.1	<0.1	0.2	<0.1	<0.1
Conductivity	us/cm	NA	-	621	710	793.0	499.0	470.0	570.0	560.0	670.0	620.6	572.8	580.0	503.5
Silica	mg/L	NA	-	19.8	20.76	15.9	9.2	11.8	3	4.7	14	12.4	9.7	13.1	11.8
Colour	TCU	5	1.2	2.7	4.00	4.10	2.9	2.8	0.5	0.5	0.5	0.5	0.5	1.0	2.0
TDS	mg/L	500	265.8	347	394.00	406.3	267.0	250.0	290.0	300.0	350.0	330.0	310.0	310.0	270.0
DOC	mg/L	5.0	0.8	-	-	0.6	0.5	1.9	0.6	1.1	1.2	2.5	0.06	0.18	0.06
TOC	mg/L	NA	-	58	-	-	-	-	-	-	-	-	-	-	-
Organic Nitrogen	mg/L	0.15	**0.4**	-	-	-	**1.16**	**6.11**	**1.97**	**2.2**	**2.5**	**2.9**	**0.6**	**0.6**	**0.3**
TKN	mg/L	NA	-	-	-	-	1.2	6.11	2.1	2.2	2.5	2.9	0.6	0.6	0.3
Benzene	mg/L	0.005	<0.001	-	-	nd	-	-	-	nd	-	-	-	nd	-
Ethylbenzene	mg/L	0.002	<0.001	-	-	nd	-	-	-	nd	-	-	-	nd	-
Toluene	mg/L	0.024	<0.001	-	-	nd	-	-	-	nd	-	-	-	nd	-
Xylenes, o-	mg/L	0.30	<0.001	-	-	nd	-	-	-	nd	-	-	-	nd	-
Xylenes, m,p-			<0.001	-	-	nd	-	-	-	nd	-	-	-	nd	-
Xylenes, Total															
Silver	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	mg/L	0.025	-	-	-	-	-	-	-	-	-	-	-	-	-
Boron	mg/L	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	mg/L	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Bismuth	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorous	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulphur	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite-N	mg/L	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate-N	mg/L	10	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromide	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	mg/L	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydroxide	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-
Zirconium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-

mg/L - milligrams per litre
NTU - Nephelometric Turbidity Unit
TCU - True Colour Unit
ND - not detected
NA - no ODWS available
Exceedance to ODWS
us/cm - micro siemens per centimetre
"-" not analyzed/available
FAL - Fine Analysis Laboratories Limited
PSC - PSC Analytical Services
Maxxam - Maxxam Analytics Inc.
Agat - Agat Laboratories
E3 - E3 Laboratories Inc.
ODWS - Ontario Drinking Water Standards

HAMLET OF GRAFTON
PRODUCTION WELL MONITORING PROGRAM

WATER QUALITY SUMMARY
MONITORING WELL SHALLOW
TABLE B1

GEO KAMP LIMITED
Monitoring Well-SHALLOW

Parameter	Units	ODWS	27-Jun-01 FAL	19-Sep-01 FAL	19-Dec-01 FAL	26-Mar-02 PSC	19-Jun-02 PSC	30-Sep-02 PSC	2-Dec-02 PSC	12-Mar-03 PSC	16-Jun-03 PSC	25-Sep-03 PSC	8-Dec-03 PSC	1-Apr-04 PSC	21-Jul-04 PSC
Calcium	mg/L	NA	85.400	76.850	93.100	93.6	88.7	93.8	97.2	90.9	97.4	86.3	93.2	95.6	105
Sodium	mg/L	200	9.2	10.8	9.4	3.9	4.2	4	5.5	4.6	4.4	3.9	4.5	4.1	4.6
Copper	mg/L	1.0	<0.01	<0.01	<0.01	<0.0005	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Manganese	mg/L	0.05	<0.01	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	0.008
Magnesium	mg/L	NA	15.810	14.200	15.000	15.4	15.8	15.6	15.1	15.2	15.8	14.3	14.9	15.4	16
Potassium	mg/L	NA	0.9	1.0	1.2	1	1	2	2	<1	<1	1	<1	<1	<1
Iron	mg/L	0.30	<0.02	<0.02	<0.02	<0.03	<0.03	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	0.02	0.03
Zinc	mg/L	5.0	<0.01	<0.01	<0.01	<0.005	<0.005	0.007	<0.005	<0.005	0.068	<0.005	0.019	0.053	0.108
Aluminum	mg/L	0.10	<0.03	<0.03	<0.03	<0.005	<0.005	0.06	0.05	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05
Lead	mg/L	0.01	<0.01	<0.01	<0.01	<0.0005	<0.0005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sulphate	mg/L	500	31.1	29.5	39	27.2	26	25.1	28.2	32.1	31.6	26.3	29	28.3	26.5
Chloride	mg/L	250	3	3.8	5	3.8	4.4	5.4	7.0	6.8	5.6	3.7	5.4	4.8	4.5
Nitrate & Nitrite-N	mg/L	10	0.16	0.28	0.2	-	-	-	-	-	-	-	-	-	-
Carbonate	mg/L	NA	0.83	<1.00	<1	1	1	1	1	1	1	1	1	1	1
Bicarbonate	mg/L	NA	247.9	240.6	280	373	334	319	341	346	322	315	343	345	327
Ortho Phosphate	mg/L	NA	<0.01	<0.01	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluoride	mg/L	1.5	0.02	<0.01	0.03	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1
Alkalinity	mg/L	30-500	248.7	241.2	281.0	308	276	264	282	286	266	260	283	285	270
Ammonia-N	mg/L	NA	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
pH	units	6.5-8.5	7.55	7.39	7.33	7.72	7.48	7.82	7.71	7.69	7.75	7.87	7.89	7.74	7.95
Hardness	mg/L	80-100	**279.38**	**251.29**	**295.25**	**297.1**	**286.7**	**298.6**	**298.6**	**289.8**	**308.6**	**274.5**	**294.3**	**302.2**	**329.6**
Turbidity	NTU	5	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
Conductivity	us/cm	NA	580.0	544.5	640.0	631.9	592.8	597.3	631.4	622.1	619.2	565.9	615.8	621.3	634.6
Silica	mg/L	NA	12.4	13.2	14.2	5.98	6.09	6.91	6.69	5.83	5.83	6.78	6.62	6.07	6.67
Colour	TCU	5	1.0	1.0	5.0	-	-	-	-	-	-	-	-	-	-
TDS	mg/L	500	310.0	294.0	340.0	330	306	304	324	322	402	292	318	320	320
DOC	mg/L	5.0		0.9	<0.05	0.9	3.6	1.1	1.3	0.8	1.1	1.1	0.8	0.9	0.4
TOC	mg/L	NA	-	-		-	-	-	-	-	-	-	-	-	-
Organic Nitrogen	mg/L	0.15	**0.9**	**0.9**	<0.05	0.07	0.08	0.05	0.12	0.1	0.08	0.04	0.07	**0.37**	**0.17**
TKN	mg/L	NA	0.9	0.9	<0.05	0.07	0.08	0.05	0.12	0.1	0.08	0.04	0.07	0.37	0.17
Benzene	mg/L	0.005	-	-	nd	-	-	-	<0.00002	-	-	-	<0.00002	-	-
Ethylbenzene	mg/L	0.002	-	-	nd	-	-	-	<0.00003	-	-	-	<0.00003	-	-
Toluene	mg/L	0.024	-	-	nd	-	-	-	<0.00004	-	-	-	<0.00004	-	-
Xylenes, o-	mg/L	0.30	-	-	nd	-	-	-	<0.00040	-	-	-	<0.00040	-	-
Xylenes, m,p-			-	-	nd	-	-	-	<0.00020	-	-	-	<0.00020	-	-
Xylenes, Total															
Silver	mg/L	NA	-	-	-	<0.0001	<0.0001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.025	-	-	-	<0.002	<0.002	<0.02	<0.02	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Boron	mg/L	5	-	-	-	0.007	0.011	0.02	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01
Barium	mg/L	1	-	-	-	0.089	0.088	0.092	0.094	0.085	0.089	0.092	0.093	0.091	0.091
Beryllium	mg/L	NA	-	-	-	<0.001	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Bismuth	mg/L	NA	-	-	-	<0.001	<0.001	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	mg/L	0.005	-	-	-	<0.0001	<0.0001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	NA	-	-	-	<0.0001	<0.0001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	mg/L	0.01	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Molybdenum	mg/L	NA	-	-	-	<0.001	<0.001	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Nickel	mg/L	NA	-	-	-	<0.001	<0.001	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Phosphorous	mg/L	NA	-	-	-	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulphur	mg/L	NA	-	-	-	-	-	9.3	10.1	9.8	10.1	8.8	9.5	9.5	9.6
Antimony	mg/L	NA	-	-	-	<0.0005	<0.0005	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Selenium	mg/L	0.01	-	-	-	<0.002	<0.002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Tin	mg/L	NA	-	-	-	<0.005	<0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Strontium	mg/L	NA	-	-	-	0.192	0.188	0.17	0.177	0.18	0.194	0.192	0.197	0.189	0.193
Titanium	mg/L	NA	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Vanadium	mg/L	NA	-	-	-	0.0007	0.0008	0.006	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrite-N	mg/L	1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nitrate-N	mg/L	10	-	-	-	0.2	<0.2	0.3	0.4	0.5	0.3	0.3	0.4	0.2	0.3
Bromide	mg/L	NA	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	mg/L	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydroxide	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-
Zirconium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-

mg/L - milligrams per litre
NTU - Nephelometric Turbidity Unit
TCU - True Colour Unit
ND - not detected
NA - no ODWS available
Exceedance to ODWS
us/cm - micro siemens per centimetre
"-" not analyzed/available
FAL - Fine Analysis Laboratories Limited
PSC - PSC Analytical Services
Maxxam - Maxxam Analytics Inc.
Agat - Agat Laboratories
E3 - E3 Laboratories Inc.
ODWS - Ontario Drinking Water Standards

HAMLET OF GRAFTON
PRODUCTION WELL MONITORING PROGRAM

WATER QUALITY SUMMARY
MONITORING WELL SHALLOW
TABLE B1

GEO KAMP LIMITED
Monitoring Well-SHALLOW

Parameter	Units	ODWS	29-Sep-04 PSC	5-Jan-05 PSC	23-Mar-05 Maxxam	9-Dec-05 Agat	12-Jun-06 Agat	12-Dec-06 Agat	22-Jun-07 Agat	7-Dec-07 Agat	14-Jul-08 Agat	3-Dec-08 Agat	26-Jun-09 Agat	8-Dec-09 Agat	30-Jun-10 Agat
Calcium	mg/L	NA	106	90.6	100	93.3	88.4	89.5	82.9	78.6	93.6	98.5	79.6	98.8	91.0
Sodium	mg/L	200	5.3	4	5	4.65	4.2	4.2	4.13	4.34	4.08	4.41	3.87	4.24	3.96
Copper	mg/L	1.0	<0.005	0.0018	ND	-	<0.003	<0.003	0.006	0.003	<0.003	<0.003	<0.003	-	<0.003
Manganese	mg/L	0.05	0.006	<0.005	ND	-	<0.002	<0.002	<0.002	0.022	<0.002	<0.002	0.003	-	<0.002
Magnesium	mg/L	NA	15.9	14	16	14.1	14.6	14.1	14.6	13.4	14.9	15.4	13.9	15.1	14.3
Potassium	mg/L	NA	2	0.9	0.98	1.09	1.01	1.04	1.19	1.26	1.07	1.22	1.02	1.20	1.08
Iron	mg/L	0.30	0.03	<0.03	ND	0.222	0.285	0.170	0.17	0.131	<0.010	<0.010	<0.010	<0.010	<0.010
Zinc	mg/L	5.0	0.031	<0.005	ND	-	-	<0.004	<0.004	0.585	0.014	<0.005	0.022	-	0.008
Aluminum	mg/L	0.10	<0.05	<0.005	ND	-	0.013	<0.004	0.006	0.348	0.005	0.0006	0.020	-	0.004
Lead	mg/L	0.01	<0.05	<0.0005	ND	-	<0.002	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-	<0.002
Sulphate	mg/L	500	28	28.8	23.8	-	25.5	27.2	23.8	24.0	23.5	-	20.0	-	22.0
Chloride	mg/L	250	4.6	4.8	3.84	3.95	4.18	4.25	2.79	3.53	3.53	3.51	3.25	3.32	3.43
Nitrate & Nitrite-N	mg/L	10	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbonate	mg/L	NA	1	1	ND	-	10	<10	<5	<10	<5	-	<5	-	<5
Bicarbonate	mg/L	NA	329	329	331	-	271	257	231	233	265	-	257	-	279
Ortho Phosphate	mg/L	NA	<1	<1	ND	-	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	-	<0.10
Fluoride	mg/L	1.5	0.2	<0.1	ND	-	<0.05	0.07	0.07	<0.05	0.05	-	<0.05	-	<0.05
Alkalinity	mg/L	30-500	272	272	271	273	271	257	231	231	265	274	257	278	279
Ammonia-N	mg/L	NA	<0.03	<0.03	ND	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02
pH	units	6.5-8.5	8.06	7.92	8.14	8.20	8.12	8.18	7.98	7.96	8.05	7.99	8.04	7.97	8.08
Hardness	mg/L	80-100	**332.4**	**284.1**	**302**	**291**	**281**	**282**	**267**	**251**	**295**	**309**	**256**	**309**	**286**
Turbidity	NTU	5	-	-	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	0.5	-	<0.5
Conductivity	us/cm	NA	645	592.7	528	549	540	550	502	456	515	551	502	536	537
Silica	mg/L	NA	7.31	6.15	6.1	-	11.9	17.1	13.8	13.8	14.2	-	13.1	-	13.5
Colour	TCU	5	-	-	ND	-	<5	<5	<5	<5	<5	-	<5	-	<5
TDS	mg/L	500	326	306	309	-	324	308	302	292	324	286	304	354	330
DOC	mg/L	5.0	1.8	1.4	-	-	-	-	-	-	-	-	-	-	-
TOC	mg/L	NA	-	-	1.1	<1	1.2	1.0	1.0	20.3	1.0	1.0	1.5	1.5	2.9
Organic Nitrogen	mg/L	0.15	0.1	0.05	-	<0.05	<0.05	0.14	<0.10	**0.3**	0.10	0.15	**0.36**	<0.05	**0.29**
TKN	mg/L	NA	0.1	0.05	2	<0.05	<0.05	0.14	<0.10	0.30	0.10	0.15	0.36	<0.10	0.29
Benzene	mg/L	0.005	-	-	ND	<0.00004	-	<0.00004	-	<0.00004	-	<0.00004	-	<0.00020	
Ethylbenzene	mg/L	0.002	-	-	ND	<0.00004	-	<0.00004	-	<0.00004	-	<0.00005	-	<0.00010	
Toluene	mg/L	0.024	-	-	ND	<0.00005	-	<0.00005	-	<0.00005	-	<0.00004	-	<0.00020	
Xylenes, o-	mg/L	0.30	-	-	ND	<0.00004	-	<0.00004	-	<0.00004	-	<0.00004	-	<0.00010	
Xylenes, m,p-			-	-	ND	<0.00010	-	<0.00010	-	<0.00010	-	<0.00004	-	<0.00020	
Xylenes, Total					ND	<0.00004	-	<0.00004	-	<0.00004	-	<0.00004	-	<0.00020	
Silver	mg/L	NA	<0.005	<0.0001	-	-	<0.002	<0.0001	<0.0001	<0.002	<0.002	<0.002	<0.002	-	<0.002
Arsenic	mg/L	0.025	<0.2	<0.002	-	-	<0.003	<0.001	<0.003	<0.003	<0.003	<0.003	<0.003	-	<0.0003
Boron	mg/L	5	<0.01	0.005	-	-	0.032	<0.010	0.032	0.011	<0.010	<0.010	<0.010	-	<0.010
Barium	mg/L	1	0.1	0.088	-	-	0.089	0.086	0.079	0.102	0.083	0.084	0.089	-	0.091
Beryllium	mg/L	NA	<0.0005	<0.001	-	-	-	-	<0.001	-	-	-	-	-	-
Bismuth	mg/L	NA	<0.2	<0.001	-	-	-	-	-	-	-	-	-	-	-
Cadmium	mg/L	0.005	<0.005	<0.0001	-	-	<0.002	<0.0002	<0.0001	<0.002	<0.002	<0.002	<0.002	-	<0.002
Cobalt	mg/L	NA	<0.005	<0.0001	-	-	-	<0.0005	<0.0005	-	-	-	-	-	-
Chromium	mg/L	0.01	<0.005	<0.005	-	-	0.005	<0.001	<0.003	<0.003	<0.003	<0.003	**0.014**	**-**	<0.003
Molybdenum	mg/L	NA	<0.02	<0.001	-	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	<0.002
Nickel	mg/L	NA	<0.02	<0.001	-	-	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	-	<0.003
Phosphorous	mg/L	NA	<0.1	<0.05	-	<0.05	<0.05	<0.05	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	0.06
Sulphur	mg/L	NA	9.6		-	-	-	-	-	-	-	-	-	-	-
Antimony	mg/L	NA	<0.2	<0.0005	-	-	-	<0.002	<0.006	-	-	-	-	-	-
Selenium	mg/L	0.01	<0.2	<0.002	-	-	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	-	<0.004
Tin	mg/L	NA	<0.05	<0.001	-	-	-	-	<0.002	-	-	-	-	-	-
Strontium	mg/L	NA	0.195	0.191	-	-	0.195	0.185	0.166	0.215	0.186	0.202	0.190	-	0.205
Titanium	mg/L	NA	<0.005	<0.005	-	-	0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	<0.002
Vanadium	mg/L	NA	<0.005	0.001	-	-	0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	<0.002
Nitrite-N	mg/L	1	<0.2	<0.2	ND	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate-N	mg/L	10	0.4	0.3	0.3	0.44	0.3	0.33	0.24	0.40	0.31	0.39	0.31	0.36	0.39
Bromide	mg/L	NA	<0.5	<0.5	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05
Thallium	mg/L	NA	-	-	-	-	<0.006	<0.0003	<0.0003	<0.006	<0.006	<0.006	<0.006	-	<0.006
Uranium	mg/L	0.02	-	-	-	-	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	<0.002
Hydroxide	mg/L	NA	-	-	-	-	-	<10	<5	<10	<5	-	<5	-	<5
Mercury	mg/L	0.001	-	-	-	-	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001
Zirconium	mg/L	NA	-	-	-	-	-	-	<0.004	-	-	-	-	-	-

mg/L - milligrams per litre
NTU - Nephelometric Turbidity Unit
TCU - True Colour Unit
ND - not detected
NA - no ODWS available
Exceedance to ODWS
us/cm - micro siemens per centimetre
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HAMLET OF GRAFTON
PRODUCTION WELL MONITORING PROGRAM

WATER QUALITY SUMMARY
MONITORING WELL SHALLOW
TABLE B1

GEO KAMP LIMITED
Monitoring Well-SHALLOW

Parameter	Units	ODWS	14-Dec-10	21-Jul-11	6-Dec-11	28-Jun-12	28-Dec-12	21-Jun-13	11-Dec-13	10-Dec-14	16-Dec-15	30-Dec-16
			E3	E3	E3	E3	E3	E3	E3	E3	E3	ALS
Calcium	mg/L	NA	97.4	95.3	93.5	102	94.7	101		99.1	97.0	89.1
Sodium	mg/L	200	3.6	13.5	4.45	<5.00	4.25	6.50		4.48	4.03	3.78
Copper	mg/L	1.0	-	-	-	-	-	-		-	-	-
Manganese	mg/L	0.05	-	-	-	-	-	-		-	-	-
Magnesium	mg/L	NA	14.5	14.7	15.3	15.2	13.9	15.2		14.6	14.7	13.5
Potassium	mg/L	NA	1.1	1.23	1.35	1.09	1.19	1.27		1.18	1.09	1.09
Iron	mg/L	0.30	<0.0005	0.019	<0.40	<0.02	0.020	<0.020		<0.020	<0.020	<0.050
Zinc	mg/L	5.0	-	-	-	-	-	-		-	-	-
Aluminum	mg/L	0.10	-	-	-	-	-	-		-	-	-
Lead	mg/L	0.01	-	-	-	-	-	-		-	-	-
Sulphate	mg/L	500	-	-	-	-	-	-		-	-	-
Chloride	mg/L	250	2.65	2.00	3.40	2.00	2.90	3.10		3.47	3.33	3.25
Nitrate & Nitrite-N	mg/L	10	-	-	-	-	-	-		-	-	-
Carbonate	mg/L	NA	-	-	-	-	-	-		-	-	-
Bicarbonate	mg/L	NA	-	-	-	-	-	-		-	-	-
Ortho Phosphate	mg/L	NA	-	-	-	-	-	-		-	-	-
Fluoride	mg/L	1.5	-	-	-	-	-	-		-	-	-
Alkalinity	mg/L	30-500	289	282	271	276	286	268		304	290	299
Ammonia-N	mg/L	NA	<0.03	<0.03	<0.03	<0.03	<0.03	0.07		0.04	<0.03	<0.020
pH	units	6.5-8.5	7.01	7.32	7.00	7.04	6.99	6.99		7.18	6.95	7.68
Hardness	mg/L	80-100	**303**	**298**	**296**	**317**	**294**	**315**		**308**	**289**	**278**
Turbidity	NTU	5	-	-	-	-	-	-		-	-	-
Conductivity	us/cm	NA	517	501	506	446	634	435		460	548	564
Silica	mg/L	NA	-	-	-	-	-	-		-	-	-
Colour	TCU	5	-	-	-	-	-	-		-	-	-
TDS	mg/L	500	-	-	350	-	270	350		300	320	308
DOC	mg/L	5.0	-	-	-	-	-	-		-	-	-
TOC	mg/L	NA	1.4	1.1	1.0	1.3	1.8	2.1		1.8	0.6	2.2
Organic Nitrogen	mg/L	0.15	**0.20**	**<0.2**	**<0.2**	**0.17**	**<0.2**	**0.2**		**<0.2**	**<0.2**	<0.15
TKN	mg/L	NA	<0.2	0.2	<0.2	0.2	<0.2	0.3		<0.2	<0.2	<0.15
Benzene	mg/L	0.005	<0.0005	-	<0.0005	-	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.002	<0.0005	-	<0.0005	-	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005
Toluene	mg/L	0.024	<0.0005	-	<0.0005	-	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005
Xylenes, o-	mg/L	0.30	<0.0005	-	<0.0005	-	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005
Xylenes, m,p-			<0.0010	-	<0.0010	-	<0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010
Xylenes, Total			-	-	-	-	-	-		-	-	<0.0011
Silver	mg/L	NA	-	-	-	-	-	-		-	-	-
Arsenic	mg/L	0.025	-	-	-	-	-	-		-	-	-
Boron	mg/L	5	-	-	-	-	-	-		-	-	-
Barium	mg/L	1	-	-	-	-	-	-		-	-	-
Beryllium	mg/L	NA	-	-	-	-	-	-		-	-	-
Bismuth	mg/L	NA	-	-	-	-	-	-		-	-	-
Cadmium	mg/L	0.005	-	-	-	-	-	-		-	-	-
Cobalt	mg/L	NA	-	-	-	-	-	-		-	-	-
Chromium	mg/L	0.01	-	-	-	-	-	-		-	-	-
Molybdenum	mg/L	NA	-	-	-	-	-	-		-	-	-
Nickel	mg/L	NA	-	-	-	-	-	-		-	-	-
Phosphorous	mg/L	NA	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02	0.0053
Sulphur	mg/L	NA	-	-	-	-	-	-		-	-	-
Antimony	mg/L	NA	-	-	-	-	-	-		-	-	-
Selenium	mg/L	0.01	-	-	-	-	-	-		-	-	-
Tin	mg/L	NA	-	-	-	-	-	-		-	-	-
Strontium	mg/L	NA	-	-	-	-	-	-		-	-	-
Titanium	mg/L	NA	-	-	-	-	-	-		-	-	-
Vanadium	mg/L	NA	-	-	-	-	-	-		-	-	-
Nitrite-N	mg/L	1	<0.004	0.005	<0.004	<0.004	<0.004	<0.004		<0.004	0.004	0.105
Nitrate-N	mg/L	10	0.24	0.15	0.16	0.13	0.13	0.11		0.11	0.07	<0.010
Bromide	mg/L	NA	-	-	-	-	-	-		-	-	-
Thallium	mg/L	NA	-	-	-	-	-	-		-	-	-
Uranium	mg/L	0.02	-	-	-	-	-	-		-	-	-
Hydroxide	mg/L	NA	-	-	-	-	-	-		-	-	-
Mercury	mg/L	0.001	-	-	-	-	-	-		-	-	-
Zirconium	mg/L	NA	-	-	-	-	-	-		-	-	-

mg/L - milligrams per litre
NTU - Nephelometric Turbidity Unit
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NA - no ODWS available
Exceedance to ODWS
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HAMLET OF GRAFTON
PRODUCTION WELL MONITORING PROGRAM

WATER QUALITY SUMMARY
MONITORING WELL SHALLOW
TABLE B1

GEO KAMP LIMITED
Monitoring Well-INTERMEDIATE

Parameter	Units	ODWS	14-Mar-95 FAL	5-Mar-97 FAL	1-Jul-98 FAL	25-Sep-98 FAL	11-Dec-98 FAL	23-Mar-99 FAL	10-Jun-99 FAL	26-Sep-99 FAL	22-Dec-99 FAL	28-Mar-00 FAL	7-Jun-00 FAL	19-Sep-00 FAL	19-Dec-00 FAL
Calcium	mg/L	NA	-	91.07	81.49	98.76	70.3	65.210	65.210	67.730	56.020	80.860	75.460	73.130	66.560
Sodium	mg/L	200	5.8	2.80	5.5	5.19	3.1	3.2	2.3	7.3	8.7	10.3	9.2	7.1	9.2
Copper	mg/L	1.0	<0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Manganese	mg/L	0.05	<0.01	<0.01	0.01	0.05	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	mg/L	NA	-	19.08	16.4	19.29	14.52	23.900	16.570	14.440	12.270	17.990	16.720	16.910	15.710
Potassium	mg/L	NA	-	<0.01	<0.1	1.40	1.20	0.90	0.9	0.8	0.4	1.3	0.9	1.1	0.9
Iron	mg/L	0.30	<0.05	<0.02	0.3	**1.83**	0.27	<0.02	<0.02	<0.02	<0.02	0.49	0.6	<0.02	0.42
Zinc	mg/L	5.0	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aluminum	mg/L	0.10	<0.01	<0.03	**0.90**	<0.03	**0.36**	<0.03	0.06	0.10	<0.03	<0.03	<0.03	<0.03	<0.03
Lead	mg/L	0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sulphate	mg/L	500	17.89	30.12	3.2	9.60	34.0	8.4	10.2	10.9	15.1	10.7	11.6	5.8	76.0
Chloride	mg/L	250	<0.05	1.01	<1	1.91	2.0	1.1	5.1	20.4	3.9	6.3	8.8	0.4	7.0
Nitrate & Nitrite-N	mg/L	10	<0.05	2.25	<0.05	<0.05	0.05	0.08	<0.05	<0.05	0.19	0.35	0.32	<0.05	<0.05
Carbonate	mg/L	NA	-	1.08	<1.00	0.67	<1.00	<1.00	1.23	2.15	<1.00	1.64	0.64	3.13	<1.00
Bicarbonate	mg/L	NA	-	268.83	269.0	335.6	229.6	284.9	198.6	182.0	205.1	264.3	229.9	246.6	183.9
Ortho Phosphate	mg/L	NA	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fluoride	mg/L	1.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Alkalinity	mg/L	30-500	157.9	269.93	269.4	336.26	230.0	285.0	199.9	184.2	206.0	266.0	230.5	249.8	184.7
Ammonia-N	mg/L	NA	-	0.16	0.25	0.20	0.15	0.14	0.23	0.26	0.09	<0.05	0.05	<0.05	<0.05
pH	units	6.5-8.5	7.08	7.63	7.14	7.33	7.30	6.50	7.82	8.10	7.65	7.82	7.47	8.13	7.60
Hardness	mg/L	80-100	**238.1**	**307.18**	**272.06**	**327.28**	**236.25**	**262.63**	**232.06**	**229.49**	**191.18**	**277.11**	**258.32**	**253.28**	**231.86**
Turbidity	NTU	5	0.41	0.32	**960**	**98.00**	**660.0**	4.8	**120.0**	2.2	2.4	1.4	1.6	3.0	0.4
Conductivity	us/cm	NA	-	662.17	532.0	662.00	509.0	539.0	447.0	480.0	430.0	570.0	530.0	510.0	550.0
Silica	mg/L	NA	-	10.25	25.6	36.80	20.90	13.9	18.6	3.8	6.1	20.0	16.9	13.1	18.7
Colour	TCU	5	0.5	<0.5	3.20	3.9	3.1	3.2	2.8	1.0	0.5	1.0	1.0	0.5	1.0
TDS	mg/L	500	218	322.17	299.0	380.00	289.0	293.0	245.0	240.0	230.0	310.0	210.0	270.0	310.0
DOC	mg/L	5.0	0.5	-	-	-	3.9	0.5	2.1	0.5	0.9	2.3	1.3	0.06	0.14
TOC	mg/L	NA	-	-	52	-	-	-	-	-	-	-	-	-	-
Organic Nitrogen	mg/L	0.15	0.1	-	-	-	-	**1.3**	**4.98**	**2.74**	**2**	**3.6**	**2.95**	**0.5**	**0.7**
TKN	mg/L	NA	-	-	-	-	-	1.16	5.21	3	2.1	3.6	3.0	0.5	0.7
Benzene	mg/L	0.005	<0.001	-	-	-	nd	-	-	-	nd	-	-	-	nd
Ethylbenzene	mg/L	0.0024	<0.001	-	-	-	nd	-	-	-	nd	-	-	-	nd
Toluene	mg/L	0.024	<0.001	-	-	-	nd	-	-	-	nd	-	-	-	nd
Xylenes, o-	mg/L	0.30	<0.001	-	-	-	nd	-	-	-	nd	-	-	-	nd
Xylenes, m,p-			<0.001	-	-	-	nd	-	-	-	nd	-	-	-	nd
Xylenes, Total															
Silver	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	mg/L	0.025	-	-	-	-	-	-	-	-	-	-	-	-	-
Boron	mg/L	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	mg/L	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Bismuth	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorous	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulphur	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite-N	mg/L	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate-N	mg/L	10	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromide	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	mg/L	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydroxide	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-
Zirconium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-

mg/L - milligrams per litre
NTU - Nephelometric Turbidity Unit
TCU - True Colour Unit
ND - not detected
NA - no ODWS available
Exceedance to ODWS
us/cm - micro siemens per centimetre
"-" not analyzed/available
FAL - Fine Analysis Laboratories Limited
PSC - PSC Analytical Services
Maxxam - Maxxam Analytics Inc.
Agat - Agat Laboratories
E3 - E3 Laboratories Inc.
ODWS - Ontario Drinking Water Standards

HAMLET OF GRAFTON
PRODUCTION WELL MONITORING PROGRAM

WATER QUALITY SUMMARY
MONITORING WELL INTERMEDIATE
TABLE B2

GEO KAMP LIMITED
Monitoring Well-INTERMEDIATE

Parameter	Units	ODWS	28-Mar-01 FAL	27-Jun-01 FAL	19-Sep-01 FAL	19-Dec-01 FAL	26-Mar-02 PSC	19-Jun-02 PSC	30-Sep-02 PSC	2-Dec-02 PSC	7-Jan-03 PSC	12-Mar-03 PSC	16-Jun-03 PSC	25-Sep-03 PSC	8-Dec-03 PSC
Calcium	mg/L	NA	74.680	71.540	69.000	71.000	75.5	75.8	90.3	75.1	-	72.9	76.8	80.3	72.6
Sodium	mg/L	200	9.4	8.8	10.2	8.5	3.1	3.2	3.4	4.7	-	3.9	3.4	3.1	3.1
Copper	mg/L	1.0	<0.01	<0.01	<0.01	<0.01	<0.0005	<0.0005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005
Manganese	mg/L	0.05	<0.01	<0.01	<0.01	<0.01	0.02	0.02	0.028	0.018	-	0.022	0.025	0.03	0.021
Magnesium	mg/L	NA	16.260	15.960	15.260	15.100	15.6	16.1	17.3	16	-	15.4	16	16.1	15.4
Potassium	mg/L	NA	1.1	1.0	0.8	1.1	1	1	<1	1	-	1	<1	<1	<1
Iron	mg/L	0.30	0.15	**0.5**	**0.5**	**0.76**	**1.48**	**1.54**	**1.59**	<0.01	-	<0.01	<0.01	**1.69**	0.01
Zinc	mg/L	5.0	<0.01	0.01	<0.01	<0.01	0.021	<0.005	0.108	0.009	-	<0.005	0.01	0.013	<0.005
Aluminum	mg/L	0.10	<0.03	<0.03	<0.03	<0.03	<0.005	<0.005	0.08	<0.03	-	<0.03	<0.05	<0.05	<0.05
Lead	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.0005	<0.0005	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05
Sulphate	mg/L	500	20.1	12.7	17.4	18	5.2	5.4	5.4	5.2	-	8	7	5.7	6.1
Chloride	mg/L	250	<1.0	5.2	7.7	6.0	1.8	2.2	2.6	2.2	-	2.3	2.6	2.5	1.7
Nitrate & Nitrite-N	mg/L	10	0.05	0.26	0.36	0.16	-	-	-	-	-	-	-	-	-
Carbonate	mg/L	NA	<1.00	0.63	<1.00	<1	1	1	1	1	-	1	1	1	1
Bicarbonate	mg/L	NA	237.4	234.0	204.3	269	348	332	322	322	-	317	312	311	315
Ortho Phosphate	mg/L	NA	<0.01	<0.01	<0.01	<0.01	<1	<1	<1	<1	-	<1	<1	<1	<1
Fluoride	mg/L	1.5	0.03	0.03	0.01	0.06	<0.01	<0.1	<0.1	<0.1	-	0.1	<0.1	<0.1	<0.1
Alkalinity	mg/L	30-500	238.4	234.7	204.7	270	287	274	266	266	-	262	258	257	260
Ammonia-N	mg/L	NA	<0.05	<0.05	0.13	0.14	0.15	0.17	0.14	<0.03	-	0.15	0.15	0.14	0.15
pH	units	6.5-8.5	7.64	7.46	7.29	7.59	7.88	7.66	7.84	7.92	-	7.79	7.91	7.99	8.14
Hardness	mg/L	80-100	**254.45**	**245.35**	**236.08**	**240.67**	**252.7**	**255.7**	**297.1**	**253.7**	-	**245.8**	**258**	**267.3**	**245.2**
Turbidity	NTU	5	<0.1	2.0	0.5	5.4	-	-	-	-	-	-	-	-	-
Conductivity	us/cm	NA	519.1	510.0	490.0	540.0	527.6	520.6	557.4	514.3	-	506	512.7	518.7	497.5
Silica	mg/L	NA	18.1	17.9	17.7	18.9	8.69	8.62	9.45	8.39	-	8.51	8.93	9.58	8.95
Colour	TCU	5	2.0	4.0	1.0	7.0	-	-	-	-	-	-	-	-	-
TDS	mg/L	500	290.0	280.0	260.0	290.0	274	268	280	264	-	261	333	263	256
DOC	mg/L	5.0	0.07	0.70	2.50	<0.05	3.7	4	3.9	3.6	-	3.2	3.8	3.6	3.5
TOC	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Organic Nitrogen	mg/L	0.15	**0.4**	**0.5**	**1.17**	**0.56**	**0.16**	**0.16**	**0.17**	**1.9**	-	0.13	**0.18**	0.12	0.11
TKN	mg/L	NA	0.4	0.5	1.3	0.7	0.31	0.33	0.31	1.9	-	0.28	0.33	0.26	0.26
Benzene	mg/L	0.005	-	-	-	nd	-	-	-	<0.00020	<0.00020	-	-	-	<0.00020
Ethylbenzene	mg/L	0.0024	-	-	-	nd	-	-	-	<0.00020	<0.00020	-	-	-	<0.00020
Toluene	mg/L	0.024	-	-	-	nd	-	-	-	0.00042	<0.00020	-	-	-	<0.00020
Xylenes, o-	mg/L	0.30	-	-	-	nd	-	-	-	0.00028	<0.00020	-	-	-	<0.00020
Xylenes, m,p-			-	-	-	nd	-	-	-	0.00059	<0.00040	-	-	-	<0.00040
Xylenes, Total															
Silver	mg/L	NA	-	-	-	-	<0.0001	<0.0001	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.025	-	-	-	-	<0.002	<0.002	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2
Boron	mg/L	5	-	-	-	-	0.007	0.01	0.01	0.01	-	<0.01	<0.01	<0.01	<0.01
Barium	mg/L	1	-	-	-	-	0.14	0.14	0.146	0.157	-	0.142	0.13	0.14	0.125
Beryllium	mg/L	NA	-	-	-	-	<0.001	<0.001	<0.0005	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005
Bismuth	mg/L	NA	-	-	-	-	<0.001	<0.001	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2
Cadmium	mg/L	0.005	-	-	-	-	<0.0001	<0.0001	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	NA	-	-	-	-	<0.0001	<0.0001	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005
Chromium	mg/L	0.01	-	-	-	-	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005
Molybdenum	mg/L	NA	-	-	-	-	<0.001	<0.001	<0.02	<0.02	-	<0.02	<0.02	<0.02	<0.02
Nickel	mg/L	NA	-	-	-	-	<0.001	<0.001	<0.02	<0.02	-	<0.02	<0.02	<0.02	<0.02
Phosphorous	mg/L	NA	-	-	-	-	<0.05	<0.05	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1
Sulphur	mg/L	NA	-	-	-	-	-	-	2.1	2	-	2.8	2	2.6	2
Antimony	mg/L	NA	-	-	-	-	<0.0005	<0.0005	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2
Selenium	mg/L	0.01	-	-	-	-	<0.002	<0.002	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2
Tin	mg/L	NA	-	-	-	-	<0.005	<0.001	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05
Strontium	mg/L	NA	-	-	-	-	0.205	0.203	0.195	0.186	-	0.186	0.202	2.12	0.2
Titanium	mg/L	NA	-	-	-	-	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005
Vanadium	mg/L	NA	-	-	-	-	<0.0005	<0.0005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005
Nitrite-N	mg/L	1	-	-	-	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2
Nitrate-N	mg/L	10	-	-	-	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2
Bromide	mg/L	NA	-	-	-	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Thallium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	mg/L	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydroxide	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-
Zirconium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-

mg/L - milligrams per litre
NTU - Nephelometric Turbidity Unit
TCU - True Colour Unit
ND - not detected
NA - no ODWS available
Exceedance to ODWS
us/cm - micro siemens per centimetre
"-" not analyzed/available
FAL - Fine Analysis Laboratories Limited
PSC - PSC Analytical Services
Maxxam - Maxxam Analytics Inc.
Agat - Agat Laboratories
E3 - E3 Laboratories Inc.
ODWS - Ontario Drinking Water Standards

GEO KAMP LIMITED
Monitoring Well-INTERMEDIATE

Parameter	Units	ODWS	1-Apr-04 PSC	21-Jul-04 PSC	29-Sep-04 PSC	5-Jan-05 PSC	23-Mar-05 Maxxam	9-Dec-05 Agat	12-Jun-06 Agat	12-Dec-06 Agat	22-Jun-07 Agat	7-Dec-07 Agat	14-Jul-08 Agat	3-Dec-08 Agat	26-Jun-09 Agat
Calcium	mg/L	NA	78.9	84.5	80.8	75.5	88	72.9	75.2	75.2	81.6	76.1	85.0	83.8	77.9
Sodium	mg/L	200	3.2	3.4	3.3	2.9	3.9	3.38	3.17	3.20	3.54	3.35	3.48	3.45	3.35
Copper	mg/L	1.0	<0.005	<0.005	<0.005	0.0006	0.005	-	0.021	<0.003	0.006	0.673	<0.003	<0.003	<0.003
Manganese	mg/L	0.05	0.025	0.025	0.021	0.022	0.027	-	0.03	0.025	0.034	**0.172**	0.022	**0.053**	0.023
Magnesium	mg/L	NA	15.9	17.2	17.2	14.9	17	14.9	15.3	15.4	16.4	15.5	17.2	17.3	16.3
Potassium	mg/L	NA	1	1	2	0.9	1	0.96	0.97	0.94	1.20	1.14	1.01	1.06	0.99
Iron	mg/L	0.30	**1.58**	**1.57**	0.25	**1.47**	**1.6**	**1.73**	**1.73**	**1.65**	**1.81**	**2.45**	**1.36**	**1.95**	**1.34**
Zinc	mg/L	5.0	0.006	0.019	<0.005	<0.005	ND	-	0.011	0.004	0.006	0.653	0.009	<0.005	<0.005
Aluminum	mg/L	0.10	<0.05	<0.05	<0.05	0.014	0.041	-	0.055	0.046	0.082	0.472	0.020	0.128	0.009
Lead	mg/L	0.01	<0.05	<0.05	<0.05	<0.0005	ND	-	<0.002	<0.001	<0.001	**0.019**	<0.002	<0.002	<0.002
Sulphate	mg/L	500	4.8	4.8	5.1	5.3	6	-	5.73	5.78	5.27	4.57	5.78	-	5.65
Chloride	mg/L	250	2	2.2	2.9	2.6	1.98	1.91	2.68	2.57	2.13	2.28	2.63	2.25	2.64
Nitrate & Nitrite-N	mg/L	10	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbonate	mg/L	NA	1	1	1	1	ND	-	10	<10	<5	<10	<5	-	<5
Bicarbonate	mg/L	NA	319	320	315	329	337	-	265	242	233	261	270	-	264
Ortho Phosphate	mg/L	NA	<1	<1	<1	<1	ND	-	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10
Fluoride	mg/L	1.5	<0.1	<0.1	0.3	0.1	ND	-	0.05	0.07	0.07	<0.05	0.06	-	0.06
Alkalinity	mg/L	30-500	264	264	260	272	276	240	265	249	233	261	270	254	264
Ammonia-N	mg/L	NA	0.15	0.18	0.18	0.12	0.19	0.18	0.17	0.13	0.21	0.16	0.21	0.08	0.09
pH	units	6.5-8.5	7.83	8.06	8.19	7.92	8.24	8.26	8.21	8.31	8.09	8.22	8.08	8.15	8.16
Hardness	mg/L	80-100	**262.9**	**282.1**	**273**	**250.3**	**273**	**243**	**251**	**251**	**271**	**254**	**283**	**280**	**262**
Turbidity	NTU	5	-	-	-	-	**11.5**	-	**7.5**	1.4	1.0	**7.0**	3.6	-	4.8
Conductivity	us/cm	NA	518.1	538.4	528.6	513.4	478	477	486	479	471	429	483	480	475
Silica	mg/L	NA	9.37	9.7	9.45	8.69	9.9	-	19.9	21.9	21.0	19.0	18.9	-	23.4
Colour	TCU	5	-	-	-	-	5	-	<5	5	**10**	5	**8**	-	**20**
TDS	mg/L	500	264	274	267	265	277	-	258	262	282	268	288	240	292
DOC	mg/L	5.0	4.1	2.6	4.8	4.1	-	-	-	-	-	-	-	-	-
TOC	mg/L	NA	-	-	-	-	4.1	<1	4	3.9	3.9	6.0	4.3	3.9	4.9
Organic Nitrogen	mg/L	0.15	**0.27**	**0.18**	0.1	**0.19**	**1.81**	0.11	0.14	0.04	**0.21**	0.13	0.14	**0.25**	**0.76**
TKN	mg/L	NA	0.42	0.36	0.28	0.31	2	0.29	0.31	0.04	0.42	0.29	0.35	0.33	0.85
Benzene	mg/L	0.005	-	-	-	-	ND	<0.00004	<0.00004	<0.00004	-	<0.00004	-	<0.00004	<0.00004
Ethylbenzene	mg/L	0.0024	-	-	-	-	ND	<0.00004	<0.00004	<0.00004	-	<0.00004	-	<0.00005	<0.00005
Toluene	mg/L	0.024	-	-	-	-	ND	<0.00005	<0.00005	<0.00005	-	<0.00005	-	<0.00004	<0.00004
Xylenes, o-	mg/L	0.30	-	-	-	-	ND	<0.00004	<0.00004	<0.00004	-	<0.00004	-	<0.00004	<0.00004
Xylenes, m,p-			-	-	-	-	ND	<0.00010	<0.00010	<0.00010	-	<0.00010	-	<0.00004	<0.00004
Xylenes, Total							ND	<0.00004	<0.00004	<0.00004	-	<0.00004	-	<0.00004	<0.00004
Silver	mg/L	NA	<0.005	<0.005	<0.005	<0.0001	-	-	<0.002	<0.0001	<0.0001	<0.002	<0.002	<0.002	<0.002
Arsenic	mg/L	0.025	<0.2	<0.2	<0.2	<0.002	-	-	<0.003	<0.001	<0.003	<0.003	<0.003	<0.003	<0.003
Boron	mg/L	5	<0.01	<0.01	0.01	0.005	-	-	0.032	<0.010	0.028	0.010	<0.010	<0.010	<0.010
Barium	mg/L	1	0.141	0.14	0.127	0.135	-	-	0.138	0.128	0.128	0.166	0.132	0.127	0.136
Beryllium	mg/L	NA	<0.0005	<0.0005	<0.0005	<0.001	-	-	-	-	<0.001	-	-	-	-
Bismuth	mg/L	NA	<0.2	<0.2	<0.2	<0.001	-	-	-	-	-	-	-	-	-
Cadmium	mg/L	0.005	<0.005	<0.005	<0.005	<0.0001	-	-	<0.002	<0.0002	<0.0001	<0.002	<0.002	<0.002	<0.002
Cobalt	mg/L	NA	<0.005	<0.005	<0.005	<0.0001	-	-	-	<0.0005	<0.0005	-	-	-	-
Chromium	mg/L	0.01	<0.005	<0.005	<0.005	<0.005	-	-	0.006	<0.001	<0.003	<0.003	<0.003	<0.003	0.004
Molybdenum	mg/L	NA	<0.02	<0.02	<0.02	<0.001	-	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Nickel	mg/L	NA	<0.02	<0.02	<0.02	<0.001	-	-	<0.003	<0.003	<0.003	0.027	<0.003	<0.003	<0.003
Phosphorous	mg/L	NA	<0.1	<0.1	<0.1	<0.05	-	<0.05	<0.05	<0.05	0.03	0.52	<0.05	0.07	<0.05
Sulphur	mg/L	NA	3.3	2.8	1.9		-	-	-	-	-	-	-	-	-
Antimony	mg/L	NA	<0.2	<0.2	<0.2	<0.0005	-	-	-	<0.002	<0.006	-	-	-	-
Selenium	mg/L	0.01	<0.2	<0.2	<0.2	<0.002	-	-	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Tin	mg/L	NA	<0.05	<0.05	<0.05	<0.001	-	-	-	-	<0.002	-	-	-	-
Strontium	mg/L	NA	0.203	0.207	0.205	0.205	-	-	0.223	0.203	0.193	0.384	0.209	0.237	0.216
Titanium	mg/L	NA	<0.005	<0.005	<0.005	<0.005	-	-	0.004	0.003	0.004	<0.002	<0.002	0.009	<0.002
Vanadium	mg/L	NA	<0.005	<0.005	<0.005	0.0007	-	-	0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Nitrite-N	mg/L	1	<0.2	<0.2	<0.2	<0.2	ND	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate-N	mg/L	10	<0.2	<0.2	<0.2	<0.2	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L	NA	<0.5	<0.5	<0.5	<0.5	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
Thallium	mg/L	NA	-	-	-	-	-	-	<0.006	<0.0003	<0.0003	<0.006	<0.006	<0.006	<0.006
Uranium	mg/L	0.02	-	-	-	-	-	-	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Hydroxide	mg/L	NA	-	-	-	-	-	-	-	<10	<5	<10	<5	-	<5
Mercury	mg/L	0.001	-	-	-	-	-	-	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Zirconium	mg/L	NA	-	-	-	-	-	-	-	-	<0.004	-	-	-	-

mg/L - milligrams per litre
NTU - Nephelometric Turbidity Unit
TCU - True Colour Unit
ND - not detected
NA - no ODWS available
Exceedance to ODWS
us/cm - micro siemens per centimetre
"-" not analyzed/available
FAL - Fine Analysis Laboratories Limited
PSC - PSC Analytical Services
Maxxam - Maxxam Analytics Inc.
Agat - Agat Laboratories
E3 - E3 Laboratories Inc.
ODWS - Ontario Drinking Water Standards

GEO KAMP LIMITED
Monitoring Well-INTERMEDIATE

Parameter	Units	ODWS	8-Dec-09	30-Jun-10	14-Dec-10	21-Jul-11	6-Dec-11	28-Jun-12	28-Dec-12	21-Jun-13	11-Dec-13	10-Dec-14	16-Dec-15	30-Dec-16
			Agat	Agat	E3	E3	E3	E3	E3	E3	E3	E3	E3	ALS
Calcium	mg/L	NA	80.7	80.9	75.1	93.0	76.2	84.5	73.0	85.4		82.8	80.3	73.6
Sodium	mg/L	200	3.37	3.59	3.0	3.2	3.80	<5.00	3.79	7.75		3.82	3.48	3.33
Copper	mg/L	1.0	-	<0.003	-	-	-	-	-	-		-	-	-
Manganese	mg/L	0.05	-	**0.150**	-	-	-	-	-	-		-	-	-
Magnesium	mg/L	NA	16.5	16.6	15.6	17.2	17.0	16.5	15.3	17.1		17.0	16.5	15.3
Potassium	mg/L	NA	1.02	1.01	0.9	1.0	1.30	0.96	1.12	1.29		1.07	0.95	0.893
Iron	mg/L	0.30	**1.58**	**4.05**	1.22	1.34	1.21	1.26	1.17	1.23		0.945	1.16	1.25
Zinc	mg/L	5.0	-	0.019	-	-	-	-	-	-		-	-	-
Aluminum	mg/L	0.10	-	0.464	-	-	-	-	-	-		-	-	-
Lead	mg/L	0.01	-	<0.002	-	-	-	-	-	-		-	-	-
Sulphate	mg/L	500	-	7.75	-	-	-	-	-	-		-	-	-
Chloride	mg/L	250	2.54	3.12	2.65	3.10	2.20	2.10	2.80	3.00		3.44	4.00	3.24
Nitrate & Nitrite-N	mg/L	10	-	-	-	-	-	-	-	-		-	-	-
Carbonate	mg/L	NA	-	<5	-	-	-	-	-	-		-	-	-
Bicarbonate	mg/L	NA	-	264	-	-	-	-	-	-		-	-	-
Ortho Phosphate	mg/L	NA	-	<0.10	-	-	-	-	-	-		-	-	-
Fluoride	mg/L	1.5	-	<0.05	-	-	-	-	-	-		-	-	-
Alkalinity	mg/L	30-500	259	264	289	269	243	259	254	248		291	264	263
Ammonia-N	mg/L	NA	0.06	0.05	<0.03	0.18	0.22	0.20	0.35	0.24		0.18	0.22	0.195
pH	units	6.5-8.5	8.10	8.20	7.01	7.15	7.18	7.08	7.14	7.12		7.26	7.14	7.82
Hardness	mg/L	80-100	**269**	**270**	**303**	**303**	**260**	**279**	**245**	**284**		**276**	**255**	**247**
Turbidity	NTU	5	-	4.7	-	-	-	-	-	-		-	-	-
Conductivity	us/cm	NA	469	481	517	473	442	394	497	397		411	465	474
Silica	mg/L	NA	-	9.65	-	-	-	-	-	-		-	-	-
Colour	TCU	5	-	**15**	-	-	-	-	-	-		-	-	-
TDS	mg/L	500	304	300	-	-	300	-	260	320		290	280	283
DOC	mg/L	5.0	-	-	-	-	-	-	-	-		-	-	-
TOC	mg/L	NA	4.3	5.4	4.1	4.0	3.5	4.2	3.5	4.8		4.0	3.8	4.3
Organic Nitrogen	mg/L	0.15	**0.17**	**0.63**	**0.17**	**0.32**	**0.2**	**0.4**	**<0.2**	**0.5**		**0.2**	**<0.2**	<0.050
TKN	mg/L	NA	0.23	0.68	<0.2	0.5	0.4	0.6	0.4	0.8		0.4	0.3	0.22
Benzene	mg/L	0.005	<0.00020	-	<0.0005	-	<0.0005	-	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.0024	<0.00010	-	<0.0005	-	<0.0005	-	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005
Toluene	mg/L	0.024	<0.00020	-	<0.0005	-	<0.0005	-	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005
Xylenes, o-	mg/L	0.30	<0.00010	-	<0.0005	-	<0.0005	-	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005
Xylenes, m,p-			<0.00020	-	<0.0010	-	<0.0010	-	<0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010
Xylenes, Total			<0.00020	-	-	-	-	-	-	-		-	-	<0.0011
Silver	mg/L	NA	-	<0.002	-	-	-	-	-	-		-	-	-
Arsenic	mg/L	0.025	-	<0.0003	-	-	-	-	-	-		-	-	-
Boron	mg/L	5	-	<0.010	-	-	-	-	-	-		-	-	-
Barium	mg/L	1	-	0.157	-	-	-	-	-	-		-	-	-
Beryllium	mg/L	NA	-	-	-	-	-	-	-	-		-	-	-
Bismuth	mg/L	NA	-	-	-	-	-	-	-	-		-	-	-
Cadmium	mg/L	0.005	-	<0.002	-	-	-	-	-	-		-	-	-
Cobalt	mg/L	NA	-	-	-	-	-	-	-	-		-	-	-
Chromium	mg/L	0.01	-	<0.003	-	-	-	-	-	-		-	-	-
Molybdenum	mg/L	NA	-	<0.002	-	-	-	-	-	-		-	-	-
Nickel	mg/L	NA	-	<0.003	-	-	-	-	-	-		-	-	-
Phosphorous	mg/L	NA	0.06	0.28	<0.02	0.02	<0.02	0.02	<0.02	<0.02		<0.02	<0.02	0.0072
Sulphur	mg/L	NA	-	-	-	-	-	-	-	-		-	-	-
Antimony	mg/L	NA	-	-	-	-	-	-	-	-		-	-	-
Selenium	mg/L	0.01	-	<0.004	-	-	-	-	-	-		-	-	-
Tin	mg/L	NA	-	-	-	-	-	-	-	-		-	-	-
Strontium	mg/L	NA	-	0.336	-	-	-	-	-	-		-	-	-
Titanium	mg/L	NA	-	0.024	-	-	-	-	-	-		-	-	-
Vanadium	mg/L	NA	-	<0.002	-	-	-	-	-	-		-	-	-
Nitrite-N	mg/L	1	<0.05	<0.05	<0.004	0.004	<0.004	<0.004	<0.004	<0.004		<0.004	<0.004	<0.020
Nitrate-N	mg/L	10	<0.05	<0.05	0.23	<0.04	<0.04	<0.04	<0.04	<0.04		<0.04	<0.04	<0.010
Bromide	mg/L	NA	-	<0.05	-	-	-	-	-	-		-	-	-
Thallium	mg/L	NA	-	<0.006	-	-	-	-	-	-		-	-	-
Uranium	mg/L	0.02	-	<0.002	-	-	-	-	-	-		-	-	-
Hydroxide	mg/L	NA	-	<5	-	-	-	-	-	-		-	-	-
Mercury	mg/L	0.001	-	<0.0001	-	-	-	-	-	-		-	-	-
Zirconium	mg/L	NA	-	-	-	-	-	-	-	-		-	-	-

mg/L - milligrams per litre
NTU - Nephelometric Turbidity Unit
TCU - True Colour Unit
ND - not detected
NA - no ODWS available
Exceedance to ODWS
us/cm - micro siemens per centimetre
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FAL - Fine Analysis Laboratories Limited
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HAMLET OF GRAFTON
PRODUCTION WELL MONITORING PROGRAM

WATER QUALITY SUMMARY
MONITORING WELL INTERMEDIATE
TABLE B2

GEO KAMP LIMITED
Monitoring Well-DEEP

Parameter	Units	ODWS	14-Mar-95 FAL	5-Mar-97 FAL	1-Jul-98 FAL	25-Sep-98 FAL	11-Dec-98 FAL	23-Mar-99 FAL	10-Jun-99 FAL	26-Sep-99 FAL	22-Dec-99 FAL	28-Mar-00 FAL	7-Jun-00 FAL	19-Sep-00 FAL	19-Dec-00 FAL	28-Mar-01 FAL	27-Jun-01 FAL	19-Sep-01 FAL	19-Dec-01 FAL	26-Mar-02 PSC	19-Jun-02 PSC
Calcium	mg/L	NA	-	37.75	32.82	37.54	30.99	46.520	34.230	27.600	26.160	35.070	31.480	31.750	28.480	30.180	30.860	27.300	32.400	33.2	31.9
Sodium	mg/L	200	10.67	4.06	16.8	18.23	11.9	12.0	10.5	15.0	17.6	22.0	18.9	16.6	18.4	17.9	17.7	15.9	16.8	10.6	11.4
Copper	mg/L	1.0	<0.05	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0005	<0.0005
Manganese	mg/L	0.05	<0.01	<0.01	<0.01	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.009
Magnesium	mg/L	NA	-	18.15	15.58	18.14	14.84	24.690	17.320	14.020	13.110	18.210	16.110	18.010	17.110	17.440	17.060	15.800	17.000	16.8	17.2
Potassium	mg/L	NA	-	<0.01	<0.1	0.93	1.1	0.8	0.8	0.6	0.4	1.2	0.8	1	0.9	0.9	0.9	0.7	1.0	0.9	0.8
Iron	mg/L	0.30	<0.05	**2.73**	**1.81**	**0.55**	**0.40**	<0.02	0.16	<0.02	<0.02	<0.02	**0.34**	<0.02	<0.02	0.04	0.21	0.2	0.2	**0.36**	**0.33**
Zinc	mg/L	5.0	<0.05	1.49	0.53	0.04	0.05	0.01	0.04	0.06	0.07	<0.01	0.05	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	0.072	0.092
Aluminum	mg/L	0.10	<0.01	<0.03	<0.03	**2.82**	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.005	<0.005
Lead	mg/L	0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0005	<0.0005
Sulphate	mg/L	500	5.05	5.61	4.1	6.68	3.4	5.6	8.6	5.1	10	9.2	7.1	4.7	73.8	14.4	12.4	8.2	13	5.2	5.5
Chloride	mg/L	250	<0.5	0.29	1.0	<1.0	0.8	1.6	6.4	45.5	7.1	6.8	6.1	0.6	7	<1.0	7.8	2.1	<1.0	1.8	2.1
Nitrate & Nitrite-N	mg/L	10	<0.05	1.89	<0.05	<0.05	<0.05	<0.05	0.10	<0.05	0.25	0.41	0.36	<0.05	<0.05	0.07	0.30	0.10	<0.05	-	-
Carbonate	mg/L	NA	-	1.23	<1.00	0.73	<1.00	<1.00	<1.00	1.43	<1.00	4.42	1.07	1.9	1.15	1.25	0.88	<1.00	2	1	1
Bicarbonate	mg/L	NA	-	172.42	177.2	186.66	178.2	218.0	147.9	76.0	144.0	174.7	172.4	180.5	108.8	168.1	148.4	170.5	199	233	211
Ortho Phosphate	mg/L	NA	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	<0.01	0.02	<0.01	0.02	0.02	<0.01	<0.01	<1	<0.05
Fluoride	mg/L	1.5	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.21	0.23	0.17	0.2	0.21	0.19	0.22	0.22	0.23	0.2	<0.1
Alkalinity	mg/L	30-500	82.70	173.69	177.7	187.41	178.9	218.0	148.6	77.5	144.6	179.3	173.5	182.5	110.0	169.4	149.4	171.0	200	193	175
Ammonia-N	mg/L	NA	-	0.34	0.42	0.27	0.20	0.18	0.12	0.26	0.34	<0.05	0.15	<0.05	<0.05	<0.05	<0.05	0.09	<0.05	0.17	0.16
pH	units	6.5-8.5	7.32	7.88	7.43	7.62	7.59	6.50	7.72	8.30	7.63	8.43	7.82	8.05	8.05	7.90	7.80	7.46	7.94	8.1	8
Hardness	mg/L	80-100	**143.4**	**170.00**	**146.97**	**169.43**	**139.33**	**219.16**	**157.74**	**127.42**	**120.03**	**163.55**	**145.83**	**154.42**	**142.49**	**148.12**	**148.23**	**134.08**	**151.83**	**152.5**	**150.7**
Turbidity	NTU	5	0.36	**11.84**	**34**	2.50	1.4	1.4	1.7	0.5	0.6	0.3	1.2	1	<0.1	<0.1	0.7	0.1	0.6	-	-
Conductivity	us/cm	NA	-	386.30	345.0	387.00	332.0	450.0	342.0	340.0	320.0	410.0	370.0	360.0	410.0	360.0	360.0	335.0	385.0	356.6	341.6
Silica	mg/L	NA	-	15.63	17.6	22.90	20.5	15.9	19.8	4.2	7	22.1	17.9	14.9	22.1	20.6	10.3	20.2	21.7	9.52	9.53
Colour	TCU	5	0.5	1.75	2.40	2.60	2.3	2.7	2.4	0.5	0.5	0.5	1	0.5	1	2	3	1	5	-	-
TDS	mg/L	500	126	191.77	200.0	222.00	194.0	244.0	192.0	160.0	170.0	230.0	210.0	200.0	240.0	210.0	190.0	195.0	210.0	184	174
DOC	mg/L	5.0	0.5	-	-	-	4.1	0.5	0.7	0.5	1.3	0.9	0.9	0.05	0.08	0.05	0.5	0.8	<0.05	1.3	1.5
TOC	mg/L	NA	-	-	36.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organic Nitrogen	mg/L	0.15	0.1	-	-	-	-	**0.92**	**1.89**	**3.94**	**2.7**	**2.2**	**2.25**	**0.3**	**0.4**	**0.2**	**0.8**	**0.61**	<0.05	0.08	0.05
TKN	mg/L	NA	-	-	-	-	-	1.1	2.01	4.2	3	2.2	2.4	0.3	0.4	0.2	0.8	0.7	<0.05	0.25	0.21
Benzene	mg/L	0.005	<0.001	-	-	-	nd	-	-	-	nd	-	-	-	nd	-	-	-	nd	-	-
Ethylbenzene	mg/L	0.0024	<0.001	-	-	-	nd	-	-	-	nd	-	-	-	nd	-	-	-	nd	-	-
Toluene	mg/L	0.024	<0.001	-	-	-	nd	-	-	-	nd	-	-	-	nd	-	-	-	nd	-	-
Xylenes, o-	mg/L	0.30	<0.001	-	-	-	nd	-	-	-	nd	-	-	-	nd	-	-	-	nd	-	-
Xylenes, m,p-			<0.001	-	-	-	nd	-	-	-	nd	-	-	-	nd	-	-	-	nd	-	-
Xylenes, Total																					
Silver	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001
Arsenic	mg/L	0.025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.002	<0.002
Boron	mg/L	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.029	0.032
Barium	mg/L	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.143	0.147
Beryllium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001
Bismuth	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001
Cadmium	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001
Cobalt	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001
Chromium	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005
Molybdenum	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001
Nickel	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001
Phosphorous	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05
Sulphur	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005
Selenium	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.002	<0.002
Tin	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.001
Strontium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.381	0.379
Titanium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005
Vanadium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005
Nitrite-N	mg/L	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2	<0.2
Nitrate-N	mg/L	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	<0.2
Bromide	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5
Thallium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	mg/L	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydroxide	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zirconium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

mg/L - milligrams per litre
NTU - Nephelometric Turbidity Unit
TCU - True Colour Unit
ND - not detected
NA - no ODWS available
Exceedance to ODWS
us/cm - micro siemens per centimetre
"-" not analyzed/available
FAL - Fine Analysis Laboratories Limited
PSC - PSC Analytical Services
Maxxam - Maxxam Analytics Inc.
Agat - Agat Laboratories
E3 - E3 Laboratories Inc.
ODWS - Ontario Drinking Water Standards

HAMLET OF GRAFTON
PRODUCTION WELL MONITORING PROGRAM

WATER QUALITY SUMMARY
MONITORING WELL DEEP
TABLE B3

GEO KAMP LIMITED
Monitoring Well-DEEP

Parameter	Units	ODWS	30-Sep-02 PSC	2-Dec-02 PSC	7-Jan-03 PSC	12-Mar-03 PSC	16-Jun-03 PSC	25-Sep-03 PSC	8-Dec-03 PSC	1-Apr-04 PSC	21-Jul-04 PSC	29-Sep-04 PSC	5-Jan-05 PSC	23-Mar-05 Maxxam	9-Dec-05 Agat	12-Jun-06 Agat	12-Dec-06 Agat	22-Jun-07 Agat	7-Dec-07 Agat	14-Jul-08 Agat
Calcium	mg/L	NA	34.9	35.3	-	31.9	32.3	31.9	38.9	32.2	31.7	32.8	31.9	35	32.3	31.3	32.0	33.5	32.0	34.9
Sodium	mg/L	200	11.9	12.5	-	12.2	12.7	12.8	13	12.9	13.6	13.3	12.3	16	13.3	13	12.5	13.0	11.9	13.6
Copper	mg/L	1.0	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0005	ND	-	<0.003	<0.003	<0.002	<0.003	<0.003
Manganese	mg/L	0.05	0.013	0.01	-	0.009	0.009	0.01	0.016	0.01	0.016	0.009	0.009	0.0099	-	0.01	0.009	0.010	0.016	0.011
Magnesium	mg/L	NA	17.9	18.4	-	16.7	16.7	16.6	17.6	16.1	16.9	17	15.3	17	16.2	15.4	15.8	16.2	15.9	16.8
Potassium	mg/L	NA	1	<1	-	<1	<1	<1	<1	1	2	2	0.8	0.89	0.85	0.86	0.85	1.06	1.03	0.92
Iron	mg/L	0.30	**0.92**	0.29	-	<0.01	<0.01	0.27	**0.38**	0.28	**0.48**	0.17	0.26	0.2	**0.325**	**0.452**	**0.311**	**0.314**	0.132	0.214
Zinc	mg/L	5.0	0.343	0.058	-	0.023	0.025	0.05	0.186	0.056	0.196	0.027	0.042	0.05	-	0.101	0.054	<0.004	0.268	0.073
Aluminum	mg/L	0.10	0.04	<0.03	-	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.005	ND	-	<0.004	<0.004	<0.004	0.092	0.012
Lead	mg/L	0.01	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0005	ND	-	<0.002	<0.001	<0.001	<0.002	<0.002
Sulphate	mg/L	500	5.5	5.5	-	5.9	6.2	6.9	6.2	5.7	6	6.6	8.25	6.8	-	5.61	5.56	8.72	5.58	5.89
Chloride	mg/L	250	2.5	2.2	-	2.4	2.3	2	1.5	1.6	1.6	1.9	2.1	1.97	1.86	2.18	1.97	2.31	1.64	1.90
Nitrate & Nitrite-N	mg/L	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbonate	mg/L	NA	1	1	-	1	1	1	1	1	1	1	1	ND	-	10	<10	<5	<10	<5
Bicarbonate	mg/L	NA	212	204	-	216	209	198	207	206	196	196	212	203	-	160	155	148	158	165
Ortho Phosphate	mg/L	NA	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	0.012	-	<0.10	<0.10	<0.10	<0.10	<0.10
Fluoride	mg/L	1.5	<0.1	<0.1	-	0.2	<0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	-	0.17	0.19	0.32	0.16	0.17
Alkalinity	mg/L	30-500	176	169	-	179	173	164	172	171	163	163	176	166	168	170	163	151	161	166
Ammonia-N	mg/L	NA	0.14	0.14	-	0.14	0.13	0.14	0.15	0.13	0.16	0.17	0.16	0.22	0.17	0.17	0.13	0.18	<0.05	0.16
pH	units	6.5-8.5	8.11	8.05	-	7.97	8.08	8.09	8.09	8.1	8.23	8.3	7.92	8.30	8.29	8.32	8.37	8.03	8.29	8.31
Hardness	mg/L	80-100	**161.2**	**164.2**	-	**148.5**	**149.7**	**148.4**	**169.9**	**146.9**	**149**	**152.4**	**142.9**	**153**	**147**	**142**	**145**	**150**	**145**	**156**
Turbidity	NTU	5	-	-	-	-	-	-	-	-	-	-	-	0.6	-	**1.2**	<0.5	<0.5	0.5	0.6
Conductivity	us/cm	NA	355.7	353	-	346	346	335	362	337.5	336.2	340.3	337.6	316	339	339	325	316	297	324
Silica	mg/L	NA	10.4	10.6	-	9.75	10.3	10.5	10.8	10.3	10.2	10.6	9.78	11.2	-	20.7	24.4	22.9	16.7	20.5
Colour	TCU	5	-	-	-	-	-	-	-	-	-	-	-	ND	-	<5	<5	<5	<5	<5
TDS	mg/L	500	180	177	-	177	223	170	181	172	170	172	174	175	-	180	168	194	178	194
DOC	mg/L	5.0	1.5	1.1	-	1.5	1.1	1.3	1.2	1.2	1.7	1.8	0.7	-	-	-	-	-	-	-
TOC	mg/L	NA	-	-	-	-	343.5	343.5	343.5	343.5	343.5	343.5	-	1.2	<1	1.3	1.2	1.2	2.2	1.4
Organic Nitrogen	mg/L	0.15	0.06	0.12	-	0.08	0.11	0.05	0.06	0.05	0.08	0	0.08	0.1	0.07	0.1	0.11	0.18	**0.34**	<0.10
TKN	mg/L	NA	0.2	0.26	-	0.22	0.24	0.19	0.21	0.18	0.24	0.15	0.24	0.1	0.24	0.27	0.24	0.00	0.34	0.23
Benzene	mg/L	0.005	-	<0.00020	<0.00020	-	-	-	<0.00020	-	-	-	-	ND	<0.00004	<0.00004	<0.00004	-	<0.00004	-
Ethylbenzene	mg/L	0.0024	-	<0.00020	<0.00020	-	-	-	<0.00020	-	-	-	-	ND	<0.00004	<0.00004	<0.00004	-	<0.00004	-
Toluene	mg/L	0.024	-	0.00085	<0.00020	-	-	-	<0.00020	-	-	-	-	ND	<0.00005	<0.00005	<0.00005	-	<0.00005	-
Xylenes, o-	mg/L	0.30	-	0.00032	<0.00040	-	-	-	<0.00040	-	-	-	-	ND	<0.00004	<0.00004	<0.00004	-	<0.00004	-
Xylenes, m,p-			-	0.00086	<0.00020	-	-	-	<0.00020	-	-	-	-	ND	<0.00010	<0.00010	<0.00010	-	<0.00010	-
Xylenes, Total														ND	<0.00004	<0.00004	<0.00004	-	<0.00004	-
Silver	mg/L	NA	<0.005	0.006	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0001	-	-	<0.002	<0.0001	<0.0001	<0.002	<0.002
Arsenic	mg/L	0.025	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.002	-	-	<0.003	<0.001	<0.003	<0.003	<0.003
Boron	mg/L	5	0.03	0.02	-	0.03	0.03	0.02	0.02	0.02	0.03	0.03	0.029	-	-	0.063	0.029	0.044	0.029	0.029
Barium	mg/L	1	0.146	0.146	-	0.134	0.136	0.142	0.149	0.142	0.138	0.131	0.141	-	-	0.143	0.128	0.126	0.145	0.138
Beryllium	mg/L	NA	<0.0005	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	-	-	-	-	<0.001	-	-
Bismuth	mg/L	NA	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.001	-	-	-	-	-	-	-
Cadmium	mg/L	0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0001	-	-	<0.002	<0.0002	<0.0001	<0.002	<0.002
Cobalt	mg/L	NA	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0001	-	-	-	<0.0005	<0.0005	-	-
Chromium	mg/L	0.01	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	<0.003	<0.001	<0.003	<0.003	<0.003
Molybdenum	mg/L	NA	<0.02	<0.02	-	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.001	-	-	<0.002	<0.002	<0.002	<0.002	<0.002
Nickel	mg/L	NA	<0.02	<0.02	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.001	-	-	<0.003	<0.003	<0.003	<0.003	<0.003
Phosphorous	mg/L	NA	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05
Sulphur	mg/L	NA	2.7	2.6	-	2.2	2.2	2.2	2.8	2.6	3.2	2.4		-	-	-	-	-	-	-
Antimony	mg/L	NA	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0005	-	-	-	<0.002	<0.006	-	-
Selenium	mg/L	0.01	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.002	-	-	<0.004	<0.004	<0.004	<0.004	<0.004
Tin	mg/L	NA	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.001	-	-	-	-	<0.002	-	-
Strontium	mg/L	NA	0.348	0.359	-	0.361	0.373	0.381	0.404	0.37	0.37	0.375	0.385	-	-	0.393	0.368	0.331	0.400	0.390
Titanium	mg/L	NA	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	<0.001	<0.002	<0.002	<0.002	<0.002
Vanadium	mg/L	NA	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0005	-	-	<0.001	<0.002	<0.002	<0.002	<0.002
Nitrite-N	mg/L	1	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	ND	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate-N	mg/L	10	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L	NA	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.05	<0.05	<0.05	<0.05	<0.05
Thallium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.006	<0.0003	<0.0003	<0.006	<0.006
Uranium	mg/L	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.002	<0.002	<0.002	<0.002
Hydroxide	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	<5	<10	<5
Mercury	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001	<0.0001	<0.0001
Zirconium	mg/L	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.004	<0.004	-	-

mg/L - milligrams per litre
NTU - Nephelometric Turbidity Unit
TCU - True Colour Unit
ND - not detected
NA - no ODWS available
Exceedance to ODWS
us/cm - micro siemens per centimetre
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HAMLET OF GRAFTON
PRODUCTION WELL MONITORING PROGRAM

WATER QUALITY SUMMARY
MONITORING WELL DEEP
TABLE B3

GEO KAMP LIMITED
Monitoring Well-DEEP

Parameter	Units	ODWS	3-Dec-08 Agat	26-Jun-09 Agat	8-Dec-09 Agat	30-Jun-10 Agat	14-Dec-10 E3	21-Jul-11 E3	6-Dec-11 E3	28-Jun-12 E3	28-Dec-12 E3	21-Jun-13 E3	11-Dec-13 E3	10-Dec-14 E3	16-Dec-15 E3	14-Dec-16 ALS
Calcium	mg/L	NA	36.6	32.8	33.8	32.9	97.4	32.8	32.2	35.0	33.1	36.3		37.4	36.9	38.6
Sodium	mg/L	200	13.0	13.4	13.5	13.9	3.6	13.2	13.2	16.4	12.9	22.4		13.7	12.2	11.2
Copper	mg/L	1.0	<0.003	<0.003	-	<0.003	-	-	-	-	-	-		-	-	-
Manganese	mg/L	0.05	0.011	0.010	-	0.016	-	-	-	-	-	-		-	-	-
Magnesium	mg/L	NA	17.3	15.3	15.8	15.0	14.5	16.0	16.3	15.8	15.1	16.4		16.8	17.0	15.9
Potassium	mg/L	NA	1.00	0.89	1	0.86	1.1	0.9	0.9	0.90	1.18	1.16		1.02	0.92	0.809
Iron	mg/L	0.30	0.271	0.220	0.2	0.299	<0.0005	0.204	0.339	0.27	0.292	0.32		0.309	0.344	0.986
Zinc	mg/L	5.0	0.064	0.064	-	0.159	-	-	-	-	-	-		-	-	-
Aluminum	mg/L	0.10	<0.004	0.008	-	0.024	-	-	-	-	-	-		-	-	-
Lead	mg/L	0.01	<0.002	<0.002	-	<0.002	-	-	-	-	-	-		-	-	-
Sulphate	mg/L	500	-	5.73	-	7.13	-	-	-	-	-	-		-	-	-
Chloride	mg/L	250	1.72	1.68	1.71	1.86	1.32	1.10	2.00	0.60	1.20	1.10		0.81	0.73	1.02
Nitrate & Nitrite-N	mg/L	10	-	-	-	-	-	-	-	-	-	-		-	-	-
Carbonate	mg/L	NA	-	<5	-	<5	-	-	-	-	-	-		-	-	-
Bicarbonate	mg/L	NA	-	162	-	163	-	-	-	-	-	-		-	-	-
Ortho Phosphate	mg/L	NA	-	<0.10	-	<0.10	-	-	-	-	-	-		-	-	-
Fluoride	mg/L	1.5	-	0.23	-	<0.05	-	-	-	-	-	-		-	-	-
Alkalinity	mg/L	30-500	166	162	177	163	177	176	158	161	181	169		196	181	179
Ammonia-N	mg/L	NA	0.15	0.15	0.06	0.08	0.22	0.08	0.19	0.17	0.13	0.22		0.19	0.22	0.179
pH	units	6.5-8.5	8.29	0.08	8.19	8.28	7.01	7.57	7.57	7.25	7.33	7.51		7.56	7.59	7.93
Hardness	mg/L	80-100	**163**	**145**	**149**	**144**	**145**	**148**	**148**	**152**	**145**	**158**		**163**	**154**	**162**
Turbidity	NTU	5	-	0.5	-	0.7	-	-	-	-	-	-		-	-	-
Conductivity	us/cm	NA	324	310	308	309	312	312	310	272	392	282		284	337	347
Silica	mg/L	NA	-	28.3	-	10.7	-	-	-	-	-	-		-	-	-
Colour	TCU	5	-	<5	-	5	-	-	-	-	-	-		-	-	-
TDS	mg/L	500	178	176	172	192	-	-	220	-	170	220		210	190	228
DOC	mg/L	5.0	-	-	-	-	-	-	-	-	-	-		-	-	-
TOC	mg/L	NA	1.3	1.2	1.3	1.2	1.3	1.1	1.1	1.3	1.6	4.7		1.4	0.6	1.5
Organic Nitrogen	mg/L	0.15	**0.20**	**0.31**	<0.05	**0.16**	**0.28**	**0.22**	**0.22**	0.03	**0.60**	0.18		**<0.2**	**<0.2**	0.133
TKN	mg/L	NA	0.35	0.39	<0.10	0.24	0.5	0.3	0.3	0.2	0.7	0.4		<0.2	0.23	0.31
Benzene	mg/L	0.005	0.0002	0.0002	<0.00020	-	<0.0005	-	<0.0005	-	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.0024	<0.00004	<0.00004	<0.00010	-	<0.0005	-	<0.0005	-	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005
Toluene	mg/L	0.024	0.00067	0.00067	0.00045	-	<0.0005	-	<0.0005	-	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005
Xylenes, o-	mg/L	0.30	0.00023	0.00023	<0.00010	-	<0.0005	-	<0.0005	-	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005
Xylenes, m,p-			0.00021	0.00021	<0.00020	-	<0.0010	-	<0.0010	-	<0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010
Xylenes, Total			0.00044	0.00044	<0.00020	-	-	-	-	-	-	-		-	-	<0.0011
Silver	mg/L	NA	<0.002	<0.002	-	<0.002	-	-	-	-	-	-		-	-	-
Arsenic	mg/L	0.025	<0.003	<0.003	-	<0.0003	-	-	-	-	-	-		-	-	-
Boron	mg/L	5	0.031	0.027	-	0.029	-	-	-	-	-	-		-	-	-
Barium	mg/L	1	0.130	0.138	-	0.138	-	-	-	-	-	-		-	-	-
Beryllium	mg/L	NA	-	-	-	-	-	-	-	-	-	-		-	-	-
Bismuth	mg/L	NA	-	-	-	-	-	-	-	-	-	-		-	-	-
Cadmium	mg/L	0.005	<0.002	<0.002	-	<0.002	-	-	-	-	-	-		-	-	-
Cobalt	mg/L	NA	-	-	-	-	-	-	-	-	-	-		-	-	-
Chromium	mg/L	0.01	<0.003	<0.003	-	<0.003	-	-	-	-	-	-		-	-	-
Molybdenum	mg/L	NA	<0.002	<0.002	-	<0.002	-	-	-	-	-	-		-	-	-
Nickel	mg/L	NA	<0.003	<0.003	-	<0.003	-	-	-	-	-	-		-	-	-
Phosphorous	mg/L	NA	<0.05	<0.05	<0.05	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02	0.0131
Sulphur	mg/L	NA	-	-	-	-	-	-	-	-	-	-		-	-	-
Antimony	mg/L	NA	-	-	-	-	-	-	-	-	-	-		-	-	-
Selenium	mg/L	0.01	<0.004	<0.004	-	<0.004	-	-	-	-	-	-		-	-	-
Tin	mg/L	NA	-	-	-	-	-	-	-	-	-	-		-	-	-
Strontium	mg/L	NA	0.414	0.384	-	0.400	-	-	-	-	-	-		-	-	-
Titanium	mg/L	NA	<0.002	<0.002	-	<0.002	-	-	-	-	-	-		-	-	-
Vanadium	mg/L	NA	<0.002	<0.002	-	<0.002	-	-	-	-	-	-		-	-	-
Nitrite-N	mg/L	1	<0.05	<0.05	<0.05	<0.05	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004		<0.004	<0.004	<0.020
Nitrate-N	mg/L	10	<0.05	<0.05	<0.05	<0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04		<0.04	<0.04	<0.020
Bromide	mg/L	NA	-	<0.05	-	<0.05	-	-	-	-	-	-		-	-	-
Thallium	mg/L	NA	<0.006	<0.006	-	<0.006	-	-	-	-	-	-		-	-	-
Uranium	mg/L	0.02	<0.002	<0.002	-	<0.002	-	-	-	-	-	-		-	-	-
Hydroxide	mg/L	NA	-	<5	-	<5	-	-	-	-	-	-		-	-	-
Mercury	mg/L	0.001	<0.0001	<0.0001	-	<0.0001	-	-	-	-	-	-		-	-	-
Zirconium	mg/L	NA	-	-	-	-	-	-	-	-	-	-		-	-	-

mg/L - milligrams per litre
NTU - Nephelometric Turbidity Unit
TCU - True Colour Unit
ND - not detected
NA - no ODWS available
Exceedance to ODWS
us/cm - micro siemens per centimetre
"-" not analyzed/available
FAL - Fine Analysis Laboratories Limited
PSC - PSC Analytical Services
Maxxam - Maxxam Analytics Inc.
Agat - Agat Laboratories
E3 - E3 Laboratories Inc.
ODWS - Ontario Drinking Water Standards

HAMLET OF GRAFTON
PRODUCTION WELL MONITORING PROGRAM

WATER QUALITY SUMMARY
MONITORING WELL DEEP
TABLE B3