

**Anvil Range Mine, Rose Creek Tailings Facility**

**2005 Groundwater Field Summary**

**-Final Report -**

# **Appendix B**

## **Quality Assurance (QA/QC of Samples)**

## Appendix B. Summary of QA/QC

May 2005 Sampling

ALS Report ID	V7867	V7867		V7867	V7867		V7867	V7867		V7867	V7867		V7867	V7867		V7902
Date submitted	5/6/2005	5/6/2005		5/6/2005	5/6/2005		5/6/2005	5/6/2005		5/6/2005	5/6/2005		5/6/2005	5/6/2005		5/9/2005
Date of report	5/26/2005	5/26/2005		5/26/2005	5/26/2005		5/26/2005	5/26/2005		5/26/2005	5/26/2005		5/26/2005	5/26/2005		5/26/2005
RESULTS OF ANALYSIS																
	sample	replicate	RPD (%)	sample	split	RPD (%)	sample	replicate	RPD (%)	sample	replicate	RPD (%)	sample	replicate	RPD (%)	sample
Sample ID	P03- 04- 02	P03- 04- 02D		P03- 05- 05	P03- 05- 05S		X17B	X17BR		X16B	X16BR		P96- 9A	P96- 9AR		SRK04- 04-03A
Date Sampled	5/3/2005	5/3/2005		5/4/2005	5/4/2005		5/4/2005	5/4/2005		5/4/2005	5/4/2005		5/3/2005	5/3/2005		5/5/2005
Time Sampled	14:30	14:35		11:15	11:20		9:52	9:52		13:26	13:26		15:37	15:37		10:48
ALS Sample ID	10	13		28	32		42	43		46	47		58	59		7
Physical Tests																
Conductivity (uS/cm)	1380	1370	0.7	1560	1570	0.6	1100	1120	1.8	391	389	0.5	2210	2210	0.0	3970
Hardness CaCO3	725	681	6.3	690	747	7.9	577	564	2.3	236	238	0.8	1480	1480	0.0	5.87
pH	7.22	7.23	0.1	6.25	6.18	1.1	7.93	7.96	0.4	8.29	8.32	0.4	7.85	7.89	0.5	
Dissolved Anions																
Alkalinity-Total CaCO3	111	107	3.7	48.3	58.2	18.6	428	427	0.2	210	202	3.9	412	421	2.2	91.0
Bromide Br	-	-		<0.50	<0.50		-	-		-	-		-	-		-
Sulphate SO4	745	693	7.2	993	916	8.1	215	245	13.0	27.5	27.0	1.8	994	987	0.7	5480
Dissolved Metals																
Aluminum D-Al	<0.10	<0.10		<0.050	<0.050		<0.020	<0.020		<0.010	<0.010		<0.050	<0.050		<1.0
Antimony D-Sb	<0.0050	<0.0050		<0.0025	<0.0025		<0.0010	<0.0010		<0.00050	<0.00050		<0.0025	<0.0025		<0.050
Arsenic D-As	<0.010	<0.010		0.0092	0.0101	9.3	<0.0020	<0.0020		<0.0010	<0.0010		<0.0050	<0.0050		<0.10
Barium D-Ba	<0.020	<0.020		0.031	0.034	9.2	0.241	0.233	3.4	0.144	0.145	0.7	0.063	0.061	3.2	<0.040
Beryllium D-Be	<0.0050	<0.0050		<0.0050	<0.0050		<0.0050	<0.0050		<0.0050	<0.0050		<0.0050	<0.0050		<0.010
Boron D-B	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10		<0.10	<0.10		<0.10	<0.10		<0.20
Cadmium D-Cd	0.00060	0.00065	8.0	<0.00025	<0.00025		<0.00010	<0.00010		<0.000050	<0.000050		0.00077	0.00076	1.3	0.0066
Calcium D-Ca	209	195	6.9	172	187	8.4	161	157	2.5	64.7	65.5	1.2	297	300	1.0	454
Chromium D-Cr	<0.0050	<0.0050		<0.0025	<0.0025		<0.0010	<0.0010		<0.00050	<0.00050		<0.0025	<0.0025		<0.050
Cobalt D-Co	0.0808	0.0843	4.2	0.0080	0.0088	9.5	<0.0010	<0.0010		<0.00050	<0.00050		0.0036	0.0036	0.0	0.349
Copper D-Cu	<0.010	<0.010		<0.0050	<0.0050		<0.0020	<0.0020		<0.0010	<0.0010		<0.0050	<0.0050		<0.10
Iron D-Fe	0.205	0.206	0.5	191	210	9.5	3.48	3.43	1.4	<0.030	<0.030		0.071	0.096	29.9	693
Lead D-Pb	<0.010	<0.010		<0.0050	<0.0050		<0.0020	<0.0020		<0.0010	<0.0010		<0.0050	<0.0050		<0.10
Lithium D-Li	<0.050	<0.050		<0.050	<0.050		<0.050	<0.050		<0.050	<0.050		<0.050	<0.050		<0.10
Magnesium D-Mg	49.6	46.9	5.6	63.2	68.1	7.5	42.6	41.9	1.7	18.1	18.1	0.0	180	177	1.7	690
Manganese D-Mn	26.4	25.2	4.7	17.3	19.0	9.4	0.567	0.558	1.6	<0.010	<0.010		0.885	0.880	0.6	49.7
Mercury D-Hg	<0.00020	<0.00020		<0.00020	<0.00020		<0.00020	<0.00020		<0.00020	<0.00020		<0.00020	<0.00020		<0.00020
Molybdenum D-Mo	<0.010	<0.010		<0.0050	<0.0050		<0.0020	<0.0020		0.0018	0.0019	5.4	<0.0050	<0.0050		<0.10
Nickel D-Ni	0.120	0.127	5.7	<0.025	<0.025		<0.010	<0.010		<0.0050	<0.0050		<0.025	<0.025		0.60
Selenium D-Se	<0.010	<0.010		<0.0050	<0.0050		<0.0020	<0.0020		0.0020	0.0020	0.0	<0.0050	<0.0050		<0.10
Silver D-Ag	<0.00050	<0.00050		<0.00025	<0.00025		<0.00010	<0.00010		<0.000050	<0.000050		<0.00025	<0.00025		<0.0050
Sodium D-Na	36.1	32.0	12.0	46.0	47.3	2.8	37.4	36.0	3.8	<2.0	<2.0		12.2	12.0	1.7	58.8
Thallium D-Tl	<0.0020	<0.0020		<0.0010	<0.0010		<0.00040	<0.00040		<0.00020	<0.00020		<0.0010	<0.0010		<0.020
Titanium D-Ti	<0.050	<0.050		<0.050	<0.050		<0.050	<0.050		<0.050	<0.050		<0.050	<0.050		<0.10
Uranium D-U	<0.0020	<0.0020		0.0013	0.0014	7.4	0.00176	0.00169	4.1	0.00211	0.00207	1.9	0.0232	0.0226	2.6	<0.020
Vanadium D-V	0.047	0.057	19.2	0.100	0.115	14.0	<0.030	<0.030		<0.030	<0.030		<0.030	0.043		0.507
Zinc D-Zn	0.0459	0.0424	7.9	0.0081	<0.0050		0.0102	0.0109	6.6	0.0051	<0.0050		0.0192	0.0242	23.0	233

Appendix B. Summary of QA/QC

May 2005 Sampling

ALS Report ID	V7902		V7902	V7902		V7902	V7902		V7902	V7902		V7902	V7902		V7959	V7959
Date submitted	5/9/2005		5/9/2005	5/9/2005		5/9/2005	5/9/2005		5/9/2005	5/9/2005		5/9/2005	5/9/2005		5/10/2005	5/10/2005
Date of report	5/26/2005		5/26/2005	5/26/2005		5/26/2005	5/26/2005		5/26/2005	5/26/2005		5/26/2005	5/26/2005		5/24/2005	5/24/2005
<b>RESULTS OF ANALYSIS</b>																
	replicate	RPD (%)	sample	split	RPD (%)	sample	replicate	RPD (%)	sample	replicate	RPD (%)	sample	replicate	RPD (%)	sample	replicate
Sample ID	SRK04- 04-03AR		BH14B	BH14B-S		P03- 08-06	P03-08- 06D		P96-6	P96-6R		P03-03- 05	P03-03- 05D		BH12A	BH 12 A R
Date Sampled	5/5/2005		5/5/2005	5/5/2005		5/5/2005	5/5/2005		5/5/2005	5/5/2005		5/5/2005	5/5/2005			
Time Sampled	10:48		18:00			15:20	15:20		16:30							
ALS Sample ID	8		17	15		23	25		14	27		30	34		1	2
<b>Physical Tests</b>																
Conductivity (uS/cm)	3940	0.8	2200	2230	1.4	850	1030	19.1	640	720	11.8	451	471	4.3	1290	1290
Hardness CaCO3	5.95	1.4	7.81	7.79	0.3	7.39	-		6.71	6.66	0.7	7.01	6.86	2.2	742	737
pH															7.94	8.03
<b>Dissolved Anions</b>																
Alkalinity-Total CaCO3	96.7	6.1	343	341	0.6	44.1	-		341	351	2.9	100	104	3.9	200	67.3
Bromide Br	-		-	-		-	-		-	-		<0.050	<0.050			
Sulphate SO4	5410	1.3	20.0	1570	195.0	1490	-		286	278	2.8	437	435	0.5	475	469
<b>Dissolved Metals</b>																
Aluminum D-Al	0.50		<0.050	<0.10		<0.050	<0.050		<0.020	<0.020		<0.10	<0.10		<0.020	<0.020
Antimony D-Sb	<0.025		<0.0025	<0.0050		0.0108	0.0071	41.3	<0.0010	<0.0010		<0.0050	<0.0050		<0.0010	<0.0010
Arsenic D-As	<0.050		<0.0050	<0.010		<0.0050	<0.0050		<0.0020	<0.0020		0.011	<0.010		<0.0020	<0.0020
Barium D-Ba	<0.040		<0.040	<0.040		<0.020	<0.020		<0.040	0.028		0.141	0.152	7.5	0.044	0.045
Beryllium D-Be	<0.010		<0.010	<0.010		<0.0050	<0.0050		<0.010	<0.0050		<0.0050	<0.0050		<0.0050	<0.0050
Boron D-B	<0.20		<0.20	<0.20		<0.10	<0.10		<0.20	<0.10		<0.10	<0.10		<0.10	<0.10
Cadmium D-Cd	0.0072	8.7	<0.00025	<0.00050		<0.00025	<0.00025		0.00022	0.00024	8.7	<0.00050	<0.00050		0.00029	0.00029
Calcium D-Ca	448	1.3	564	571	1.2	324	390	18.5	169	185	9.0	136	142	4.3	160	160
Chromium D-Cr	<0.025		<0.0025	<0.0050		<0.0025	<0.0025		<0.0010	<0.0010		<0.0050	<0.0050		<0.0010	<0.0010
Cobalt D-Co	0.337	3.5	<0.0025	<0.0050		0.0035	0.0032	9.0	<0.0010	<0.0010		0.0331	0.0325	1.8	<0.0010	<0.0010
Copper D-Cu	<0.050		<0.0050	<0.010		<0.0050	<0.0050		<0.0020	<0.0020		<0.010	<0.010		<0.0040	<0.0040
Iron D-Fe	677	2.3	<0.060	<0.060		0.346	0.513	38.9	0.068	0.069	1.5	21.1	22.0	4.2	<0.030	<0.030
Lead D-Pb	<0.050		<0.0050	<0.010		0.0227	0.0098	79.4	<0.0020	<0.0020		<0.010	<0.010		<0.0020	<0.0020
Lithium D-Li	<0.10		<0.10	<0.10		<0.050	<0.050		<0.10	<0.050		<0.050	<0.050		<0.050	<0.050
Magnesium D-Mg	686	0.6	192	196	2.1	10.1	13.5	28.8	53.2	62.5	16.1	26.7	28.1	5.1	83.1	82.3
Manganese D-Mn	48.9	1.6	<0.020	<0.020		0.597	0.709	17.2	0.068	0.077	12.4	31.5	32.4	2.8	<0.010	<0.010
Mercury D-Hg	<0.00020		<0.00020	<0.00020		<0.00020	<0.00020		<0.00020	<0.00020		<0.00020	<0.00020		<0.00020	<0.00020
Molybdenum D-Mo	<0.050		<0.0050	<0.010		0.0067	0.0070	4.4	<0.0020	<0.0020		<0.010	<0.010		<0.0020	<0.0020
Nickel D-Ni	0.60	0.0	<0.025	<0.050		<0.025	<0.025		0.018	0.020	10.5	<0.050	<0.050		0.011	0.011
Selenium D-Se	<0.050		<0.0050	<0.010		<0.0050	<0.0050		<0.0020	<0.0020		<0.010	<0.010		0.0027	0.0029
Silver D-Ag	<0.0025		<0.00025	<0.00050		<0.00025	<0.00025		<0.00010	<0.00010		<0.00050	<0.00050		<0.00010	<0.00010
Sodium D-Na	57.3	2.6	15.9	16.1	1.3	91.5	125	30.9	9.2	10.3	11.3	36.2	38.6	6.4	6.6	7.0
Thallium D-Tl	<0.010		<0.0010	<0.0020		<0.0010	<0.0010		<0.00040	<0.00040		<0.0020	<0.0020		<0.00040	<0.00040
Titanium D-Ti	<0.10		<0.10	<0.10		<0.050	<0.050		<0.10	<0.050		<0.050	<0.050		<0.050	<0.050
Uranium D-U	<0.010		0.125	0.137	9.2	<0.0010	<0.0010		0.0120	0.0129	7.2	<0.0020	<0.0020		0.00643	0.00624
Vanadium D-V	0.467	8.2	<0.060	<0.060		<0.030	<0.030		<0.060	<0.030		<0.030	<0.030		<0.030	<0.030
Zinc D-Zn	230	1.3	0.037	0.042	12.7	0.0244	0.0236	3.3	0.727	0.768	5.5	0.0778	0.0808	3.8	0.171	0.175

Appendix B. Summary of QA/QC

May 2005 Sampling

ALS Report ID	V8129	V8129		V8143	V8143		
Date submitted	5/13/2005	5/13/2005		5/13/2005	5/13/2005		
Date of report	5/26/2005	5/26/2005		5/27/2005	5/27/2005		
<b>RESULTS OF ANALYSIS</b>							
	RPD (%)	sample	replicate	RPD (%)	sample	replicate	RPD (%)
Sample ID		X21B	X21B-R		P03-03- 02	P03-03- 02R	
Date Sampled		5/10/2005	5/10/2005		5/11/2005	5/11/2005	
Time Sampled		16:10	16:15		12:20	12:20	
ALS Sample ID		11	13		14	3	
<b>Physical Tests</b>							
Conductivity (uS/cm)	0.0	1280	1290	0.8	2380	2390	0.4
Hardness CaCO3	0.7	602	606	0.7	524	524	0.0
pH	1.1	7.63	7.85	2.8	4.38	4.61	5.1
<b>Dissolved Anions</b>							
Alkalinity-Total CaCO3	99.3	165	161	2.5	4.4	4.5	2.2
Bromide Br					<0.050	<5.0	
Sulphate SO4	1.3	520	544	4.5	17.1	1630	195.8
<b>Dissolved Metals</b>							
Aluminum D-Al		<0.050	<0.020		2.52	2.87	13.0
Antimony D-Sb		<0.0025	<0.0010		<0.025	<0.010	
Arsenic D-As		<0.0050	0.0049		<0.050	<0.020	
Barium D-Ba	2.2	<0.060	<0.060		<0.060	<0.060	
Beryllium D-Be		<0.015	<0.015		<0.015	<0.015	
Boron D-B		<0.30	<0.30		<0.30	<0.30	
Cadmium D-Cd	0.0	<0.00025	<0.00010		0.0155	0.0174	11.6
Calcium D-Ca	0.0	179	180	0.6	126	126	0.0
Chromium D-Cr		<0.0025	<0.0010		<0.025	<0.010	
Cobalt D-Co		0.0074	0.0073	1.4	0.189	0.210	10.5
Copper D-Cu		<0.0050	<0.0020		0.057	0.060	5.1
Iron D-Fe		31.9	31.4	1.6	523	520	0.6
Lead D-Pb		<0.0050	<0.0020		<0.050	<0.020	
Lithium D-Li		<0.15	<0.15		<0.15	<0.15	
Magnesium D-Mg	1.0	37.6	37.6	0.0	50.7	50.7	0.0
Manganese D-Mn		13.4	13.6	1.5	17.4	17.4	0.0
Mercury D-Hg		<0.00020	<0.00020		<0.00020	<0.00020	
Molybdenum D-Mo		<0.0050	<0.0020		<0.050	<0.020	
Nickel D-Ni	0.0	<0.025	<0.010		<0.25	0.27	
Selenium D-Se	7.1	<0.0050	<0.0020		<0.050	<0.020	
Silver D-Ag		<0.00025	<0.00010		<0.0025	<0.0010	
Sodium D-Na	5.9	65.0	64.2	1.2	13.0	12.9	0.8
Thallium D-Tl		<0.0010	<0.00040		<0.010	<0.0040	
Titanium D-Ti		<0.15	<0.15		<0.15	<0.15	
Uranium D-U	3.0	0.0029	0.00305	5.0	<0.010	<0.0040	
Vanadium D-V		<0.090	<0.090		<0.090	<0.090	
Zinc D-Zn	2.3	0.164	0.166	1.2	134	132	1.5

Appendix B. Summary of QA/QC

July 2005 Sampling

ALS Report ID	W2122	W2122		W2122	W2122		W2123	W2123	
Date submitted	7/26/2005	7/26/2005		7/26/2005	7/26/2005		7/26/2005	7/26/2005	
Date of report	8/12/2005	8/12/2005		8/12/2005	8/12/2005		8/26/2005	8/26/2005	
<b>RESULTS OF ANALYSIS</b>									
	Sample	Replicate	RPD (%)	Sample	Replicate	RPD (%)	Sample	Replicate	RPD (%)
Sample ID	P03-08-3	P03-08- 03D		X25A	X25A-D		P03-03- 01	P03-03- 01D	
Date Sampled	7/23/2005	7/23/2005		7/21/2005	7/21/2005		7/22/2005	7/22/2005	
Time Sampled	11:44	11:44		18:22	18:22		18:15	18:15	
ALS Sample ID	6	9		18	20		1	15	
<b>Physical Tests</b>									
Conductivity (uS/cm)	769	769	0.0	950	950	0.0	2190	2200	0.5
Hardness CaCO3	416	397	4.7	508	489	3.8	422	427	1.2
pH	7.76	7.81	0.6	7.88	7.90	0.3	4.79	4.57	4.7
<b>Dissolved Anions</b>									
Alkalinity-Total CaCO3	255	260	1.9	229	234	2.2	<2.0	<2.0	
Bromide Br							<1.0	<1.0	
Chloride Cl							<50	<50	
Fluoride F							<2.0	<2.0	
Sulphate SO4	144	156	8.0	292	291	0.3	1560	1510	3.3
<b>Nutrients</b>									
Nitrate Nitrogen N							<10	<10	
Nitrite Nitrogen N							<10	<10	
<b>Dissolved Metals</b>									
Aluminum D-Al	0.036	<0.020		<0.020	<0.020		2.01	2.04	1.5
Antimony D-Sb	<0.0010	<0.0010		<0.0010	<0.0010		0.043	<0.025	
Arsenic D-As	<0.0020	<0.0020		<0.0020	<0.0020		<0.050	<0.050	
Barium D-Ba	0.141	0.131	7.4	0.044	0.042	4.7	<0.020	<0.020	
Beryllium D-Be	<0.0050	<0.0050		<0.0050	<0.0050		<0.0050	<0.0050	
Boron D-B	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	
Cadmium D-Cd	0.00050	0.00029	53.2	0.00035	0.00035	0.0	0.0134	0.0148	9.9
Calcium D-Ca	117	113	3.5	144	140	2.8	100	102	2.0
Chromium D-Cr	<0.0010	<0.0010		<0.0010	<0.0010		<0.025	<0.025	
Cobalt D-Co	<0.0010	<0.0010		0.0076	0.0077	1.3	0.158	0.160	1.3
Copper D-Cu	0.0042	0.0038	10.0	0.0024	0.0022	8.7	<0.050	<0.050	
Iron D-Fe	0.055	0.053	3.7	<0.030	<0.030		482	487	1.0
Lead D-Pb	0.0094	0.0065	36.5	<0.0020	<0.0020		<0.050	<0.050	
Lithium D-Li	<0.050	<0.050		<0.050	<0.050		<0.050	<0.050	
Magnesium D-Mg	30.2	27.9	7.9	35.7	34.2	4.3	41.6	41.9	0.7
Manganese D-Mn	7.52	6.47	15.0	5.44	5.21	4.3	14.4	14.4	0.0
Mercury D-Hg	<0.00020	<0.00020		<0.00020	<0.00020		<0.00020	<0.00020	
Molybdenum D-Mo	0.0053	0.0049	7.8	<0.0020	<0.0020		<0.050	<0.050	
Nickel D-Ni	0.028	0.028	0.0	0.011	0.012	8.7	<0.25	<0.25	
Selenium D-Se	<0.0020	<0.0020		<0.0020	<0.0020		<0.050	<0.050	
Silver D-Ag	<0.00010	<0.00010		<0.00010	<0.00010		<0.0025	<0.0025	
Sodium D-Na	13.4	12.5	6.9	30.0	28.8	4.1	13.5	13.5	0.0
Thallium D-Tl	<0.00040	<0.00040		<0.00040	<0.00040		<0.010	<0.010	
Titanium D-Ti	<0.050	<0.050		<0.050	<0.050		<0.050	<0.050	
Uranium D-U	0.00442	0.00432	2.3	0.00877	0.00894	1.9	<0.010	<0.010	
Vanadium D-V	<0.030	<0.030		<0.030	<0.030		<0.030	<0.030	
Zinc D-Zn	<0.0050	0.0070		0.0067	0.0052	25.2	109	109	0.0

Appendix B. Summary of QA/QC

September 2005 Sampling

ALS Report ID	W4421	W4421		W4421	W4421		W4420	W4420		W4419r	W4419r		W4400	W4400		W4400	W4400		W4427
Date submitted	9/13/2005	9/13/2005		9/13/2005	9/13/2005		9/13/2005	9/13/2005		9/13/2005	9/13/2005		9/13/2005	9/13/2005		9/13/2005	9/13/2005		9/14/2005
Date of report	9/26/2005	9/26/2005		9/26/2005	9/26/2005		9/27/2005	9/27/2005		10/14/2005	10/14/2005		9/28/2005	9/28/2005		9/28/2005	9/28/2005		9/28/2005
<b>RESULTS OF ANALYSIS</b>																			
	sample	replicate	RPD (%)	sample	replicate	RPD (%)	sample	replicate	RPD (%)	sample	replicate	RPD (%)	sample	replicate	RPD (%)	sample	replicate	RPD (%)	sample
Sample ID	P96-8A	P96-8A-R		X17A	X17A-R		P03-02-04	P03-02-04-R		V37	V37-R		P03-08-05	P03-08-05R		P03-04-03	P03-04-03R		SP3A
Date Sampled	9/10/2005	9/10/2005		9/10/2005	9/10/2005		9/8/2005	9/8/2005		9/8/2005	9/8/2005		9/9/2005	9/9/2005		9/10/2005	9/10/2005		9/12/2005
Time Sampled	16:55	16:55		10:48	10:48		14:04	14:04		15:51	15:51		15:54	16:02		11:25	11:29		11:37
ALS Sample ID	14	13		19	20		13	14		3	5		20	1		12	13		1
<b>Physical Tests</b>																			
Conductivity (uS/cm)	6370	6390	0.3	448	457	2.0	542	558	2.9	850	844	0.7	2360	2360	0.0	1410	1410	0.0	947
Hardness CaCO3	4240	4440	4.6	298	313	4.9	250	263	5.1	389	413	6.0	1240	1150	7.5	653	694	6.1	512
pH	6.50	6.46	0.6	8.12	8.20	1.0	6.76	6.74	0.3	8.29	8.28	0.1	7.35	7.32	0.4	6.92	6.90	0.3	6.60
<b>Dissolved Anions</b>																			
Alkalinity-Total CaCO3	108	106	1.9	230	239	3.8	57.3	51.7	10.3	428	427	0.2	246	249	1.2	93.9	90.6	3.6	282
Bromide Br										-	-								
Chloride Cl										-	-								
Fluoride F										-	-								
Sulphate SO4	5040	4920	2.4	20.1	20.8	3.4	212	230	8.1	74.6	76.1	2.0	1160	1220	5.0	715	711	0.6	245
<b>Nutrients</b>																			
Nitrate Nitrogen N										-	-								
Nitrite Nitrogen N										-	-								
<b>Dissolved Metals</b>																			
Aluminum D-Al	<1.0	<1.0		<0.010	<0.010		<0.050	<0.050		<0.010	<0.010		0.071	<0.050		<0.050	<0.050		0.058
Antimony D-Sb	<0.050	<0.050		<0.00050	<0.00050		<0.0025	<0.0025		<0.00050	<0.00050		<0.0025	<0.0025		<0.0025	<0.0025		<0.0010
Arsenic D-As	<0.10	<0.10		<0.0010	<0.0010		<0.0050	<0.0050		0.0012	0.0012	0.0	<0.0050	<0.0050		<0.0050	<0.0050		<0.0020
Barium D-Ba	<0.040	<0.040		0.170	0.175	2.9	0.049	0.050	2.0	0.138	0.148	7.0	<0.020	<0.020		<0.020	<0.020		0.040
Beryllium D-Be	<0.010	<0.010		<0.0050	<0.0050		<0.0050	<0.0050		<0.0050	<0.0050		<0.0050	<0.0050		<0.0050	<0.0050		<0.0050
Boron D-B	<0.20	<0.20		<0.10	<0.10		<0.10	<0.10		<0.10	<0.10		<0.10	<0.10		<0.10	<0.10		<0.10
Cadmium D-Cd	0.220	0.233	5.7	<0.000050	<0.000050		<0.00025	<0.00025		<0.000050	<0.000050		<0.00025	<0.00025		0.00055	0.00063	13.6	<0.00010
Calcium D-Ca	456	477	4.5	83.5	88.2	5.5	79.2	83.8	5.6	49.6	52.6	5.9	357	326	9.1	194	204	5.0	123
Chromium D-Cr	<0.050	<0.050		<0.00050	<0.00050		<0.0025	<0.0025		<0.00050	<0.00050		0.0028	<0.0025		<0.0025	<0.0025		<0.0010
Cobalt D-Co	0.312	0.313	0.3	<0.00050	<0.00050		0.0038	0.0039	2.6	<0.00050	<0.00050		<0.0025	<0.0025		0.0636	0.0632	0.6	0.0052
Copper D-Cu	<0.10	<0.10		<0.0010	<0.0010		<0.0050	<0.0050		<0.0010	<0.0010		<0.0050	<0.0050		<0.0050	<0.0050		<0.0020
Iron D-Fe	0.061	0.082	29.4	0.047	0.046	2.2	0.574	0.578	0.7	0.863	0.917	6.1	60.4	57.6	4.7	0.371	0.393	5.8	24.7
Lead D-Pb	<0.10	<0.10		<0.0010	0.0054		<0.0050	<0.0050		<0.0010	<0.0010		0.0104	0.0069	40.5	<0.0050	<0.0050		<0.0020
Lithium D-Li	0.26	0.28	7.4	<0.050	<0.050		0.064	0.063	1.6	<0.050	<0.050		<0.050	<0.050		<0.050	<0.050		0.066
Magnesium D-Mg	752	788	4.7	21.7	22.6	4.1	12.7	13.1	3.1	64.4	68.3	5.9	84.2	82.2	2.4	41.1	45.0	9.1	50.0
Manganese D-Mn	98.7	101	2.3	<0.010	<0.010		9.10	9.57	5.0	0.072	0.076	5.4	7.07	6.44	9.3	25.7	28.0	8.6	1.00
Mercury D-Hg	<0.00020	<0.00020		<0.00020	<0.00020		<0.00020	<0.00020		<0.00020	<0.00020		<0.00020	<0.00020		<0.00020	<0.00020		<0.00020
Molybdenum D-Mo	<0.10	<0.10		<0.0010	<0.0010		<0.0050	<0.0050		0.0202	0.0198	2.0	<0.0050	<0.0050		<0.0050	<0.0050		<0.0020
Nickel D-Ni	1.70	1.67	1.8	<0.0050	<0.0050		0.091	0.097	6.4	<0.0050	<0.0050		<0.025	<0.025		0.103	0.102	1.0	0.014
Selenium D-Se	<0.10	<0.10		<0.0010	<0.0010		<0.0050	<0.0050		<0.0010	<0.0010		<0.0050	<0.0050		<0.0050	<0.0050		<0.0020
Silver D-Ag	<0.0050	<0.0050		<0.000050	<0.000050		<0.00025	<0.00025		<0.000050	<0.000050		<0.00025	<0.00025		<0.00025	<0.00025		<0.00010
Sodium D-Na	54.9	56.8	3.4	3.0	3.1	3.3	7.2	7.3	1.4	18.4	19.7	6.8	158	132	17.9	23.3	25.8	10.2	13.5
Thallium D-Tl	<0.020	<0.020		<0.00020	<0.00020		<0.0010	<0.0010		<0.00020	<0.00020		<0.0010	<0.0010		<0.0010	<0.0010		<0.00040
Titanium D-Ti	<0.10	<0.10		<0.050	<0.050		<0.050	<0.050		<0.050	<0.050		<0.050	<0.050		<0.050	<0.050		<0.050
Uranium D-U	<0.020	<0.020		0.00241	0.00256	6.0	<0.0010	<0.0010		0.00037	0.00034	8.5	0.0017	0.0020	16.2	<0.0010	<0.0010		0.00154
Vanadium D-V	0.078	0.077	1.3	<0.030	<0.030		<0.030	<0.030		<0.030	<0.030		<0.050	0.053		<0.040	<0.030		<0.030
Zinc D-Zn	604	618	2.3	0.0091	0.0088	3.4	0.246	0.272	10.0	0.0054	0.0065	18.5	0.0224	0.0119	61.2	0.0487	0.0528	8.1	1.04

Appendix B. Summary of QA/QC

September 2005 Sampling

ALS Report ID	W4427		W4427	W4427		W4413	W4413	
Date submitted	9/14/2005		9/14/2005	9/14/2005		9/13/2005	9/13/2005	
Date of report	9/28/2005		9/28/2005	9/28/2005		9/27/2005	9/27/2005	
<b>RESULTS OF ANALYSIS</b>								
	replicate	RPD (%)	sample	split	RPD (%)	sample	replicate	RPD (%)
Sample ID	SP3A-R		SP1-A	SP-1A-S		P03-05- 05	P03-05- 05-R	
Date Sampled	9/12/2005		9/12/2005	9/12/2005		9/10/2005	9/10/2005	
Time Sampled	11:38		15:45	15:50		15:40	15:41	
ALS Sample ID	3		12	14		5	6	
<b>Physical Tests</b>								
Conductivity (uS/cm)	950	0.3	1130	1140	0.9	1780	1780	0.0
Hardness CaCO3	535	4.4	625	617	1.3	762	832	8.8
pH	6.62	0.3	6.43	6.49	0.9	6.48	6.46	0.3
<b>Dissolved Anions</b>								
Alkalinity-Total CaCO3	287	1.8	251	251	0.0	29.1	23.9	19.6
Bromide Br						<0.010	<0.010	
Chloride Cl						<5.0	<5.0	
Fluoride F						0.28	0.28	0.0
Sulphate SO4	235	4.2	383	367	4.3	1030	1030	0.0
<b>Nutrients</b>								
Nitrate Nitrogen N						<0.050	<0.050	
Nitrite Nitrogen N						<0.010	<0.010	
<b>Dissolved Metals</b>								
Aluminum D-Al	0.066	12.9	0.093	0.091	2.2	<0.050	<0.050	
Antimony D-Sb	<0.0010		<0.0010	<0.0010		<0.0025	<0.0025	
Arsenic D-As	<0.0020		0.0048	0.0049	2.1	0.0097	0.0100	3.0
Barium D-Ba	0.042	4.9	<0.040	<0.040		0.037	0.038	2.7
Beryllium D-Be	<0.0050		<0.010	<0.010		<0.0050	<0.0050	
Boron D-B	<0.10		<0.20	<0.20		<0.10	<0.10	
Cadmium D-Cd	<0.00010		<0.00010	<0.00010		<0.00025	<0.00025	
Calcium D-Ca	128	4.0	153	152	0.7	198	214	7.8
Chromium D-Cr	<0.0010		<0.0010	<0.0010		<0.0025	<0.0025	
Cobalt D-Co	0.0050	3.9	0.0057	0.0056	1.8	0.0098	0.0098	0.0
Copper D-Cu	<0.0020		<0.0020	<0.0020		<0.0050	<0.0050	
Iron D-Fe	25.5	3.2	46.4	45.7	1.5	194	195	0.5
Lead D-Pb	<0.0020		<0.0020	<0.0020		<0.0050	<0.0050	
Lithium D-Li	0.061	7.9	<0.10	<0.10		<0.050	<0.050	
Magnesium D-Mg	52.5	4.9	58.6	57.8	1.4	65.1	72.2	10.3
Manganese D-Mn	1.05	4.9	1.74	1.71	1.7	19.0	19.4	2.1
Mercury D-Hg	<0.00020		<0.00020	<0.00020		<0.00020	<0.00020	
Molybdenum D-Mo	<0.0020		<0.0020	<0.0020		<0.0050	<0.0050	
Nickel D-Ni	0.013	7.4	0.018	0.017	5.7	<0.025	<0.025	
Selenium D-Se	<0.0020		<0.0020	<0.0020		<0.0050	<0.0050	
Silver D-Ag	<0.00010		<0.00010	<0.00010		<0.00025	<0.00025	
Sodium D-Na	14.2	5.1	15.0	14.8	1.3	41.0	43.6	6.1
Thallium D-Tl	<0.00040		<0.00040	<0.00040		<0.0010	<0.0010	
Titanium D-Ti	<0.050		<0.10	<0.10		<0.050	<0.050	
Uranium D-U	0.00156	1.3	<0.00040	<0.00040		0.0015	0.0015	0.0
Vanadium D-V	<0.030		<0.060	<0.060		<0.15	<0.15	
Zinc D-Zn	1.08	3.8	1.63	1.62	0.6	0.0081	0.0064	23.4

Appendix B. Summary of QA/QC

November 2005 Sampling

ALS Report ID	W7054	W7054		W7054	W7054		W7054	W7054	
Date submitted	11/4/2005	11/4/2005		11/4/2005	11/4/2005		11/4/2005	11/4/2005	
Date of report	11/16/2005	11/16/2005		11/16/2005	11/16/2005		11/16/2005	11/16/2005	
<b>RESULTS OF ANALYSIS</b>									
	sample	replicate	RPD (%)	replicate	sample	RPD (%)	sample	replicate	RPD (%)
Sample ID	X25A	X25A-R		P03-09- 07-R	P03-09- 07		P03-08- 04	P03-08- 04-R	
Date Sampled	10/31/2005	10/31/2005	0.0	11/1/2005	11/1/2005	0.0	11/1/2005	11/1/2005	0.0
Time Sampled	13:26	13:26	0.0	13:25	13:26	0.1	15:30	15:31	0.1
ALS Sample ID									
<b>Physical Tests</b>									
Conductivity (uS/cm)	943	942	0.1	1290	1280	0.8	1400	1410	0.7
Hardness CaCO3	481	474	1.5	654	620	5.3	691	726	4.9
pH	7.73	7.74	0.1	7.70	7.71	0.1	7.58	7.73	2.0
<b>Dissolved Anions</b>									
Alkalinity-Total CaCO3	248	253	2.0	263	274	4.1	312	310	0.6
Sulphate SO4	288	287	0.3	437	427	2.3	461	477	3.4
<b>Nutrients</b>									
Nitrate Nitrogen N									
Nitrite Nitrogen N									
<b>Dissolved Metals</b>									
Aluminum D-Al	<0.20	<0.20		<0.20	<0.20		<0.20	<0.20	
Antimony D-Sb	<0.20	<0.20		<0.20	<0.20		<0.20	<0.20	
Arsenic D-As	<0.20	<0.20		<0.20	<0.20		<0.20	<0.20	
Barium D-Ba	0.036	0.036	0.0	0.062	0.060	3.3	0.029	0.031	6.7
Beryllium D-Be	<0.0050	<0.0050		<0.0050	<0.0050		<0.0050	<0.0050	
Bismuth D-Bi	<0.20	<0.20		<0.20	<0.20		<0.20	<0.20	
Boron D-B	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	
Cadmium D-Cd	<0.010	<0.010		<0.010	<0.010		<0.010	<0.010	
Calcium D-Ca	140	138	1.4	200	189	5.7	200	211	5.4
Chromium D-Cr	<0.010	<0.010		<0.010	<0.010		<0.010	<0.010	
Cobalt D-Co	<0.010	<0.010		<0.010	<0.010		<0.010	<0.010	
Copper D-Cu	<0.010	<0.010		<0.010	<0.010		<0.010	<0.010	
Iron D-Fe	<0.030	<0.030		0.439	0.133	107.0	31.7	31.3	1.3
Lead D-Pb	<0.050	<0.050		<0.050	<0.050		<0.050	<0.050	
Lithium D-Li	<0.010	<0.010		0.021	0.024	13.3	0.015	0.019	23.5
Magnesium D-Mg	31.6	31.4	0.6	37.7	36.2	4.1	46.7	48.7	4.2
Manganese D-Mn	4.33	4.35	0.5	6.75	6.31	6.7	2.79	2.91	4.2
Molybdenum D-Mo	<0.030	<0.030		<0.030	<0.030		<0.030	<0.030	
Nickel D-Ni	<0.050	<0.050		<0.050	<0.050		<0.050	<0.050	
Phosphorus D-P	<0.30	<0.30		<0.30	<0.30		<0.30	<0.30	
Potassium D-K	4.0	3.9	2.5	4.1	4.0	2.5	3.8	3.9	2.6
Selenium D-Se	<0.20	<0.20		<0.20	<0.20		<0.20	<0.20	
Silicon D-Si	6.18	6.12	1.0	6.25	6.26	0.2	5.68	5.89	3.6
Silver D-Ag	<0.010	<0.010		<0.010	<0.010		<0.010	<0.010	
Sodium D-Na	25.2	25.0	0.8	31.8	31.3	1.6	41.8	43.9	4.9
Strontium D-Sr	0.355	0.353	0.6	0.520	0.502	3.5	0.470	0.488	3.8
Thallium D-Tl	<0.20	<0.20		<0.20	<0.20		<0.20	<0.20	
Tin D-Sn	<0.030	<0.030		<0.030	<0.030		<0.030	<0.030	
Titanium D-Ti	<0.010	<0.010		<0.010	<0.010		<0.010	<0.010	
Vanadium D-V	<0.030	<0.030		<0.030	<0.030		<0.030	<0.030	
Zinc D-Zn	0.0160	0.0150	6.5	<0.0050	<0.0050		0.0123	0.0164	28.6

Results are expressed as milligrams per litre except where noted.  
 < = Less than the detection limit indicated.