

**Appendix 4. Median, Minimum, and Maximum Values for Selected Variables By
Irrigation District and Site Type**

Appendix 4.1 Median, minimums and maximums for nutrient, bacteria, physical and ionic variables for the Aetna Irrigation District Primary site samples (n=8) and Return Flow site samples (n=8).

Variable	Units	-----Primary-----			-----Secondary-----			-----Return-----		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
TP	mg L ⁻¹	0.025	bd0.02	0.04				0.02	bd0.02	0.03
DRP	mg L ⁻¹	bd0.01	bd0.01	bd0.01				bd0.01	bd0.01	0.01
NO ₃ -N	mg L ⁻¹	bd0.05	bd0.05	bd0.05				bd0.05	bd0.05	0.06
NO ₂ -N	mg L ⁻¹	bd0.05	bd0.05	bd0.05				bd0.05	bd0.05	bd0.05
NH ₃ -N	mg L ⁻¹	bd0.05	bd0.05	bd0.05				bd0.05	bd0.05	bd0.05
TKN	mg L ⁻¹	0.3	0.1	0.6				0.3	0.2	0.4
TN	mg L ⁻¹	0.3	0.1	0.6				0.35	0.2	0.46
TDS	mg L ⁻¹	116	99	141				123.5	104	143
Electrical Conductivity	µS cm ⁻¹	207	195	229				216.5	204	237
SAR		0.194	0.105	0.345				0.241	0.124	0.339
Hardness	mg L ⁻¹	104	92	119				106.5	95	153
Cl ⁻	mg L ⁻¹	0.4	0.2	0.5				0.4	0.2	1.3
Total Na ⁺	mg L ⁻¹	4	2	6				4	2	6
Total K ⁺	mg L ⁻¹	0.75	0.5	0.9				0.8	0.4	1
Total Ca ²⁺	mg L ⁻¹	22.05	17.5	23.9				22.25	18.5	24.1
Total Mg ²⁺	mg L ⁻¹	12.8	10.4	14.1				12.8	10.3	14.6
Alkalinity	mg L ⁻¹	116	101	136				121	106	133
HCO ₃ ⁻	mg L ⁻¹	127	97	141				139.5	97	151
SO ₄ ⁻²	mg L ⁻¹	4.75	4.5	5.6				4.95	4.5	7.9
Total coliforms	MPN 100mL ⁻¹	1390	201	>2420				1160	201	>2420
<i>E. coli</i>	MPN 100mL ⁻¹	99	40	272				103.5	19	219
Total Suspended Solids	mg L ⁻¹	10.5	bd3	22				3	bd3	4

Appendix 4.1 Median, minimums and maximums for nutrient, bacteria, physical and ionic variables for the Bow River Irrigation District Primary site samples (n=16), Secondary site samples (n=40) and Return Flow site samples (n=44).

Variable	Units	-----Primary-----			-----Secondary-----			-----Return Flow-----		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
TP	mg L ⁻¹	bd0.02	bd0.02	0.13	bd0.02	bd0.02	0.29	0.05	bd0.02	0.15
DRP	mg L ⁻¹	bd0.01	bd0.01	0.08	bd0.01	bd0.01	0.17	0.01	bd0.01	0.1
NO₃-N	mg L ⁻¹	bd0.05	bd0.05	0.91	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	0.5
NO₂-N	mg L ⁻¹	bd0.05	bd0.05	0.06	bd0.05	bd0.05	0.08	bd0.05	bd0.05	bd0.05
NH₃-N	mg L ⁻¹	bd0.05	bd0.05	0.07	bd0.05	bd0.05	0.05	bd0.05	bd0.05	0.29
TKN	mg L ⁻¹	0.3	bd0.1	0.6	0.5	bd0.1	5.3	0.6	0.3	1.8
TN	mg L ⁻¹	0.51	0.3	1.11	0.5	bd0.1	5.38	0.6	0.3	2.3
TDS	mg L ⁻¹	368	170	424	388	285	558	409	343	607
Electrical Conductivity	µS cm ⁻¹	616	303	699	623.5	487	797	650	555	945
SAR		1.61	0.26	2.63	1.88	0.93	2.99	1.95	1.73	2.68
Hardness	mg L ⁻¹	190	140	231	189.5	164	251	203	166	272
Cl⁻	mg L ⁻¹	11.60	5.2	17.3	12.9	7.4	20.7	14.2	10.5	20.7
Total Na⁺	mg L ⁻¹	49.5	6	67	51.5	27.9	89.1	54.85	42	91
Total K⁺	mg L ⁻¹	3.3	1.1	4.2	4.0	1.87	10.3	4.55	3.28	7.2
Total Ca²⁺	mg L ⁻¹	42.6	37.1	49	36.75	21.8	47.2	35.95	22.7	53.6
Total Mg²⁺	mg L ⁻¹	22.1	11.9	27.1	24.3	18.5	36.3	26.1	19.5	38.8
Alkalinity	mg L ⁻¹	154	119	181	144	98	178	153	103	197
HCO₃⁻	mg L ⁻¹	178	137	206	156	44	206	173.5	81	231
SO₄⁻²	mg L ⁻¹	142	32.8	167	151.5	104	301	165.5	130	305
Total coliforms	MPN 100mL ⁻¹	796	99	>2420	841	50	>2420	>2420	201	>2420
<i>E. coli</i>	MPN 100mL ⁻¹	15	1	687	9.5	<1	248	111.5	3	980
Total Suspended Solids	mg L ⁻¹	bd3	bd3	14	3	bd3	17	3.5	bd3	31

Appendix 4.1 Median, minimums and maximums for nutrient, bacteria, physical and ionic variables for the Eastern Irrigation District Primary site samples (n=8), Secondary site samples (n=48) and Return Flow site samples (n=40).

Variable	Units	-----Primary-----			-----Secondary-----			-----Return Flow-----		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
TP	mg L ⁻¹	bd0.02	bd0.02	0.1	bd0.02	bd0.02	0.17	bd0.02	bd0.02	0.11
DRP	mg L ⁻¹	bd0.01	bd0.01	0.01	bd0.01	bd0.01	0.07	bd0.01	bd0.01	0.03
NO₃-N	mg L ⁻¹	0.365	0.19	0.56	bd0.05	bd0.05	0.52	bd0.05	bd0.05	0.07
NO₂-N	mg L ⁻¹	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05
NH₃-N	mg L ⁻¹	bd0.05	bd0.05	0.09	bd0.05	bd0.05	0.31	bd0.05	bd0.05	0.11
TKN	mg L ⁻¹	0.15	0.1	2.5	0.3	0.1	2.1	0.3	0.1	0.7
TN	mg L ⁻¹	0.66	0.29	2.77	0.365	0.1	2.1	0.3	0.1	0.7
TDS	mg L ⁻¹	203.5	186	226	207	168	246	219.5	169	301
Electrical Conductivity	µS cm ⁻¹	348	330	363	360	269	391	361.5	205	488
SAR		0.477	0.348	0.676	0.653	0.330	1.031	0.685	0.403	1.541
Hardness	mg L ⁻¹	156	142	165	149	120	169	149	113	189
Cl⁻	mg L ⁻¹	6.9	4.7	9.3	8.65	4.7	12.5	8.7	0.4	10.5
Total Na⁺	mg L ⁻¹	11.5	10	13	14	9	24	16	11	33
Total K⁺	mg L ⁻¹	1.6	1.1	2.3	1.9	1.1	2.8	1.9	1.2	2.9
Total Ca²⁺	mg L ⁻¹	37.85	35.6	45.2	32.35	19.8	40.4	31.55	19.1	43.8
Total Mg²⁺	mg L ⁻¹	13.9	12.6	14.3	15.9	12.3	19.7	16.05	13.5	18.9
Alkalinity	mg L ⁻¹	131	121	167	122	98	150	120	84	166
HCO₃⁻	mg L ⁻¹	151.5	135	203	140	106	183	141	78	202
SO₄⁻²	mg L ⁻¹	46.3	38.3	51	53.2	35.9	80.1	54.5	41.3	114
Total coliforms	MPN 100mL ⁻¹	507	240	>2420	596	68	>2420	1990	201	>2420
<i>E. coli</i>	MPN 100mL ⁻¹	15	5	196	6	0.5	197	57.5	4	>2420
Total Suspended Solids	mg L ⁻¹	3.5	bd3	11	bd3	bd3	12	bd3	bd3	11

Appendix 4.1 Median, minimums and maximums for nutrient, bacteria, physical and ionic variables for the Lethbridge Northern Irrigation District Primary site samples (n=8), Secondary site samples (n=40) and Return Flow site samples (n=16).

Variable	Units	-----Primary-----			-----Secondary-----			-----Return Flow-----		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
TP	mg L ⁻¹	bd0.02	bd0.02	bd0.02	bd0.02	bd0.02	0.05	0.075	0.03	0.19
DRP	mg L ⁻¹	bd0.01	bd0.01	bd0.01	bd0.01	bd0.01	0.01	0.01	bd0.01	0.04
NO₃-N	mg L ⁻¹	0.065	bd0.05	0.14	bd0.05	bd0.05	0.1	bd0.05	bd0.05	bd0.05
NO₂-N	mg L ⁻¹	bd0.05	bd0.05	0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05
NH₃-N	mg L ⁻¹	bd0.05	bd0.05	0.06	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05
TKN	mg L ⁻¹	0.1	0.1	0.1	0.3	0.1	0.7	0.55	0.3	0.9
TN	mg L ⁻¹	0.135	0.1	0.29	0.3	0.1	0.7	0.55	0.3	0.9
TDS	mg L ⁻¹	149.5	119	179	167.5	120	203	187	159	213
Electrical Conductivity	µS cm ⁻¹	274	237	284	279	224	346	322.5	282	369
SAR		0.217	0.119	0.329	0.463	0.121	1.053	0.704	0.366	0.969
Hardness	mg L ⁻¹	132.5	119	139	125	98	149	134.5	118	172
Cl⁻	mg L ⁻¹	0.7	0.3	1	1	0.3	2.1	1.55	1	2.1
Total Na⁺	mg L ⁻¹	4.5	3	5	9	3	19	15.5	8.8	19
Total K⁺	mg L ⁻¹	0.75	0.59	0.9	0.9	0.4	1.8	1.45	0.89	3.5
Total Ca²⁺	mg L ⁻¹	34.75	31.7	36.7	29.65	18.8	37.4	30.15	25	39.5
Total Mg²⁺	mg L ⁻¹	10.2	9.2	10.7	12	9.4	15.4	14.65	12.3	17.9
Alkalinity	mg L ⁻¹	131.5	100	152	126	92	151	128.5	104	148
HCO₃⁻	mg L ⁻¹	149.5	108	171	136	73	169	146.5	97	162
SO₄⁻²	mg L ⁻¹	17.05	13.4	19.5	31	15.9	62	42.65	30.1	60.4
Total coliforms	MPN 100mL ⁻¹	437.5	99	1120	728.5	111	>2420	>2420	201	>2420
<i>E. coli</i>	MPN 100mL ⁻¹	22	4	161	16	0.5	261	195	70	>2420
Total Suspended Solids	mg L ⁻¹	4	bd3	9	4	bd3	56	18	5	164

Appendix 4.1 Median, minimums and maximums for nutrient, bacteria, physical and ionic variables for the Magrath Irrigation District Primary site samples including AEP-P1 (n=24), Secondary site samples including AEP-S1 and AEP-S2 (n=16) and Return Flow site samples (n=8).

Variable	Units	Primary			Secondary			Return Flow		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
TP	mg L ⁻¹	0.01	bd0.02	0.13	bd0.02	bd0.02	bd0.02	0.05	0.03	0.1
DRP	mg L ⁻¹	bd0.01	bd0.01	0.04	bd0.01	bd0.01	bd0.01	0.02	0.01	0.04
NO₃-N	mg L ⁻¹	bd0.05	bd0.05	0.28	bd0.05	bd0.05	0.09	0.1075	bd0.05	0.46
NO₂-N	mg L ⁻¹	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	0.06	bd0.05	bd0.05	bd0.05
NH₃-N	mg L ⁻¹	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05
TKN	mg L ⁻¹	0.10	0.1	0.9	0.1	0.1	0.1	0.3	0.1	0.7
TN	mg L ⁻¹	0.19	0.1	0.9	0.1	0.1	0.23	0.445	0.1	1.16
TDS	mg L ⁻¹	124	89	161	108	89	137	272.5	165	555
Electrical Conductivity	µS cm ⁻¹	219	172	275	199.5	177	211	435.5	297	821
SAR		0.174	0.045	0.492	0.124	0.045	0.21	2.010	0.664	3.012
Hardness	mg L ⁻¹	104	89	129	98.8	90	120	163	129	252
Cl⁻	mg L ⁻¹	0.4	0.2	1.2	0.3	bd0.1	0.5	1.15	0.7	2.3
Total Na⁺	mg L ⁻¹	4.0	1	11	2	1	3	40	16.4	88
Total K⁺	mg L ⁻¹	0.6	0.30	2.2	0.5	0.3	0.6	1.4	0.8	3.9
Total Ca²⁺	mg L ⁻¹	24.8	20.8	31.1	24.1	21.3	25.5	37.5	28.5	52.3
Total Mg²⁺	mg L ⁻¹	9.6	7.0	11.9	8.7	7.4	9.6	17.5	14.2	34.1
Alkalinity	mg L ⁻¹	109	85	137	103	84	125	144.5	116	175
HCO₃⁻	mg L ⁻¹	121	75	153	116	77	141	166.5	115	193
SO₄⁻²	mg L ⁻¹	11.2	5.4	24.2	7.6	5.8	8.6	87.25	33.6	292
Total coliforms	MPN 100mL ⁻¹	524	21	>2420	310	112	>2420	>2420	201	>2420
<i>E. coli</i>	MPN 100mL ⁻¹	6	bd1	921	17.5	2	124	116	14	816
Total Suspended Solids	mg L ⁻¹	bd3	bd3	8	3	bd3	6	11	bd3	69

Appendix 4.1 Median, minimums and maximums for nutrient, bacteria, physical and ionic variables for the Mountain View Irrigation District Primary site samples (n=8) and Return Flow site samples (n=8).

Variable	Units	Primary			Secondary	Return Flow		
		Median	Min	Max		Median	Min	Max
TP	mg L ⁻¹	0.03	bd0.02	0.04		0.03	bd0.02	0.07
DRP	mg L ⁻¹	bd0.01	bd0.01	0.01		bd0.01	bd0.01	0.01
NO ₃ -N	mg L ⁻¹	bd0.05	bd0.05	bd0.05		bd0.05	bd0.05	0.06
NO ₂ -N	mg L ⁻¹	bd0.05	bd0.05	bd0.05		bd0.05	bd0.05	0.09
NH ₃ -N	mg L ⁻¹	bd0.05	bd0.05	bd0.05		bd0.05	bd0.05	bd0.05
TKN	mg L ⁻¹	0.45	0.3	0.9		0.5	0.3	0.9
TN	mg L ⁻¹	0.45	0.3	0.9		0.5	0.3	0.9
TDS	mg L ⁻¹	112.5	89	154		115	102	355
Electrical Conductivity	µS cm ⁻¹	211.5	177	259		217.5	193	546
SAR		0.169	0.083	0.296		0.203	0.102	0.376
Hardness	mg L ⁻¹	105.5	85	180		115	96	279
Cl ⁻	mg L ⁻¹	0.3	0.2	0.6		0.45	0.2	1.8
Total Na ⁺	mg L ⁻¹	3	2	5		4	2	7
Total K ⁺	mg L ⁻¹	0.5	bd0.5	1		0.7	bd0.5	3.4
Total Ca ²⁺	mg L ⁻¹	22.25	14.8	34.3		21.05	17.2	54.2
Total Mg ²⁺	mg L ⁻¹	11.55	9.6	13.2		13.55	11.6	32.1
Alkalinity	mg L ⁻¹	112.5	91	137		117	101	312
HCO ₃ ⁻	mg L ⁻¹	118	95	167		132.5	121	381
SO ₄ ⁻²	mg L ⁻¹	4.55	4.1	5.7		4.1	3.4	9.8
Total coliforms	MPN 100mL ⁻¹	674.5	201	2420		1985	145	>2420
<i>E. coli</i>	MPN 100mL ⁻¹	0.75	<1	4		137	62	517
Total Suspended Solids	mg L ⁻¹	3	bd3	6		6	bd3	23

Appendix 4.1 Median, minimums and maximums for nutrient, bacteria, physical and ionic variables for the Raymond Irrigation District Primary site samples (n=8) and Return Flow site samples (n=16).

Variable	Units	-----Primary-----			-----Secondary-----			-----Return Flow-----		
		Median	Min	Max				Median	Min	Max
TP	mg L ⁻¹	bd0.02	bd0.02	0.03				0.085	0.05	0.27
DRP	mg L ⁻¹	bd0.01	bd0.01	bd0.01				0.035	0.01	0.2
NO₃-N	mg L ⁻¹	0.0375	bd0.05	0.54				bd0.05	bd0.05	0.08
NO₂-N	mg L ⁻¹	bd0.05	bd0.05	0.1				bd0.05	bd0.05	0.06
NH₃-N	mg L ⁻¹	bd0.05	bd0.05	bd0.05				bd0.05	bd0.05	0.09
TKN	mg L ⁻¹	0.1	0.1	0.3				0.3	0.2	0.9
TN	mg L ⁻¹	0.15	0.1	0.74				0.35	0.2	0.9
TDS	mg L ⁻¹	140.5	123	157				187.5	139	318
Electrical Conductivity	µS cm ⁻¹	232.5	224	280				325.5	264	514
SAR		0.291	0.179	0.618				0.808	0.317	2.384
Hardness	mg L ⁻¹	115	100	129				136.5	110	177
Cl⁻	mg L ⁻¹	0.55	0.4	1.9				1.6	0.6	3.2
Total Na⁺	mg L ⁻¹	5	3.4	10				15	7	40
Total K⁺	mg L ⁻¹	0.9	0.7	1.4				1.75	0.97	3.6
Total Ca²⁺	mg L ⁻¹	26.7	22.1	29.4				30.25	24.4	36.2
Total Mg²⁺	mg L ⁻¹	10.1	9.3	11.8				13.85	11.1	19
Alkalinity	mg L ⁻¹	113	101	133				126	110	157
HCO₃⁻	mg L ⁻¹	128.5	88	142				147.5	104	175
SO₄⁻²	mg L ⁻¹	18.05	12	30.5				45.55	20.8	128
Total coliforms	MPN 100mL ⁻¹	786	118	1730				2420	201	>2420
<i>E. coli</i>	MPN 100mL ⁻¹	15.5	5	36				266	77	1990
Total Suspended Solids	mg L ⁻¹	4.5	bd3	9				19.5	4	40

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Appendix 4.1. Median, minimum and maximum values for nutrient, bacteria, physical and ionic variables for the St. Mary River Irrigation District Primary site samples (n=24), secondary site samples (n=39) and Return Flow site samples (n=55).

Variable	Units	-----Primary-----			-----Secondary-----			-----Return Flow-----		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
TP	mg L ⁻¹	bd0.02	bd0.02	0.11	0.02	bd0.02	0.18	0.03	bd0.02	0.54
DRP	mg L ⁻¹	bd0.01	bd0.01	0.01	bd0.01	bd0.01	0.05	bd0.01	bd0.01	0.11
NO₃-N	mg L ⁻¹	bd0.05	bd0.05	0.25	bd0.05	bd0.05	0.26	bd0.05	bd0.05	0.14
NO₂-N	mg L ⁻¹	bd0.05	bd0.05	0.06	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	0.06
NH₃-N	mg L ⁻¹	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	0.05	bd0.05	bd0.05	0.16
TKN	mg L ⁻¹	0.25	0.1	1.4	0.4	0.1	1.4	0.5	0.1	5
TN	mg L ⁻¹	0.25	0.1	1.4	0.4	0.1	1.4	0.5	0.1	5
TDS	mg L ⁻¹	169	120	213	201	124	270	217.5	97	356
Electrical Conductivity	µS cm ⁻¹	278.5	216	352	330	217	425	354	183	525
Sodium Adsorption Ratio		0.568	0.134	1.017	0.749	0.130	1.214	0.810	0.136	1.909
Hardness	mg L ⁻¹	124	104	174	138	103	200	145	86	215
Cl⁻	mg L ⁻¹	1	0.4	2.3	2	0.4	4.5	2.3	0.4	6.6
Total Na⁺	mg L ⁻¹	10	3	19	16	3	24	20	3	42
Total K⁺	mg L ⁻¹	1.25	0.7	2.6	1.9	0.7	3.7	2.7	0.7	5.8
Total Ca²⁺	mg L ⁻¹	27.25	21.1	34.9	29.3	20.8	35.3	27.8	17.3	35.4
Total Mg²⁺	mg L ⁻¹	11.95	9.4	16.8	14.4	9.4	19.8	16.7	9.8	25.8
Alkalinity	mg L ⁻¹	120.5	100	143	127	100	163	130	75	165
HCO₃⁻	mg L ⁻¹	136	114	175	145	74	199	136	59	200
SO₄²⁻	mg L ⁻¹	32	11.1	63.3	49.3	11.1	88.9	58.3	12.6	140
Total coliforms	MPN 100mL ⁻¹	668	210	>2420	866	148	>2420	>2420	56	>2420
<i>E. coli</i>	MPN 100mL ⁻¹	8.5	<1	68	12	<1	326	84	<1	>2420
Total Suspended Solids	mg L ⁻¹	4.5	bd3	22	6	bd3	32	8	bd3	67

Appendix 4.1. Median, minimum and maximum values for nutrient, bacteria, physical and ionic variables for the Taber Irrigation District Primary site samples (n=8), secondary site samples (n=24) and Return Flow site samples (n=16).

Variable	Units	-----Primary-----			-----Secondary-----			-----Return Flow-----		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
TP	mg L ⁻¹	bd0.02	bd0.02	bd0.02	0.025	bd0.02	0.1	0.04	bd0.02	0.07
DRP	mg L ⁻¹	bd0.01	bd0.01	bd0.01	bd0.01	bd0.01	0.03	bd0.01	bd0.01	0.03
NO₃+NO₂-N	mg L ⁻¹	0.03	0.025	0.035	0.03	0.025	0.035	0.03	0.025	0.035
NO₃-N	mg L ⁻¹	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05
NO₂-N	mg L ⁻¹	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05
NH₃-N	mg L ⁻¹	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	0.05	bd0.05	bd0.05	0.07
TKN	mg L ⁻¹	0.1	0.1	0.3	0.6	0.1	1.1	0.6	0.4	0.9
TN	mg L ⁻¹	0.1	0.1	0.3	0.6	0.1	1.1	0.6	0.4	0.9
TDS	mg L ⁻¹	173	144	218	193.5	145	396	208	176	421
Electrical Conductivity	µS cm ⁻¹	281	258	348	298	197	600	329	198	643
Sodium Adsorption Ratio		0.522	0.276	0.905	0.846	0.281	2.407	1.282	0.574	2.464
Hardness	mg L ⁻¹	127.5	115	178	126	92.8	182	128	104	198
Cl⁻	mg L ⁻¹	0.95	0.7	2.2	1.85	0.7	6.4	2.85	1.5	6.8
Total Na⁺	mg L ⁻¹	9.5	7	17	18	7	57	23.5	14	62
Total K⁺	mg L ⁻¹	1.2	1	1.8	2.05	1	3.4	2.35	1.5	3.4
Total Ca²⁺	mg L ⁻¹	29.8	27.5	34.3	23	14	34.4	22	16.3	30.5
Total Mg²⁺	mg L ⁻¹	11.8	10.7	14.9	14.85	11.1	25.7	16.7	14.1	31.7
Alkalinity	mg L ⁻¹	125.5	110	135	117	81	146	113	90	150
HCO₃⁻	mg L ⁻¹	145	130	163	136	55	162	116	76	170
SO₄²⁻	mg L ⁻¹	30.3	23.2	67.2	53.35	23	207	73.55	41.5	222
Total coliforms	MPN 100mL ⁻¹	1113	99	>2420	1640	154	>2420	>2420	201	>2420
<i>E. coli</i>	MPN 100mL ⁻¹	108.5	1	649	42	4	770	33	7	179
Total Suspended Solids	mg L ⁻¹	bd3	bd3	5	3	bd3	9	3	bd3	6

Appendix 4.1. Median, minimum and maximum values for nutrient, bacteria, physical and ionic variables for the United Irrigation District Primary site samples (n=8), secondary site samples (n=8) and Return Flow site samples (n=16).

Variable	Units	-----Primary-----			-----Secondary-----			-----Return Flow-----		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
TP	mg L ⁻¹	bd0.02	bd0.02	bd0.02	bd0.02	bd0.02	0.03	0.06	0.03	0.13
DRP	mg L ⁻¹	bd0.01	bd0.01	bd0.01	bd0.01	bd0.01	0.01	0.02	0.01	0.03
NO₃-N	mg L ⁻¹	bd0.05	bd0.05	0.1	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05
NO₂-N	mg L ⁻¹	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	0.07
NH₃-N	mg L ⁻¹	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	0.1	bd0.05	bd0.05	bd0.05
TKN	mg L ⁻¹	0.1	0.1	0.1	0.15	0.1	0.3	0.3	0.2	0.5
TN	mg L ⁻¹	0.1	0.1	0.2	0.15	0.1	0.3	0.3	0.2	0.57
TDS	mg L ⁻¹	116.5	91	151	110.5	93	130	126.5	104	152
Electrical Conductivity	µS cm ⁻¹	215.5	177	236	199.5	180	214	228.5	198	274
Sodium Adsorption Ratio		0.073	0.045	0.136	0.113	0.083	0.195	0.159	0.086	0.292
Hardness	mg L ⁻¹	111.5	90	116	101.5	93	124	113	104	131
Cl⁻	mg L ⁻¹	0.25	bd0.1	0.4	0.25	bd0.1	0.3	0.35	bd0.1	0.6
Total Na⁺	mg L ⁻¹	1.5	1	2	2	1	3	3	2	5
Total K⁺	mg L ⁻¹	0.4	bd0.5	0.5	0.5	bd0.5	0.9	1.25	0.7	2.5
Total Ca²⁺	mg L ⁻¹	25.55	20.8	27.3	22.75	20.7	24.5	26.45	23.7	35.9
Total Mg²⁺	mg L ⁻¹	9.9	7.9	10.9	9.75	8.2	10.8	12.05	9.7	14.5
Alkalinity	mg L ⁻¹	115.5	90	139	107.5	89	124	117.5	98	139
HCO₃⁻	mg L ⁻¹	123	96	163	118	73	135	120.5	73	151
SO₄²⁻	mg L ⁻¹	6.1	4.5	7.1	7.7	5.7	10.6	11.55	6.8	17
Total coliforms	MPN 100mL ⁻¹	169.5	51	579	430	120	>2420	>2420	201	>2420
<i>E. coli</i>	MPN 100mL ⁻¹	37.5	4	141	3.5	0.5	9	90	16	579
Total Suspended Solids	mg L ⁻¹	bd3	bd3	3	bd3	bd3	4	25.5	bd3	109

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Appendix 4.1. Median, minimum and maximum values for nutrient, bacteria, physical and ionic variables for the Western Irrigation District Primary site samples (n=16), secondary site samples (n=32) and Return Flow site samples (n=8).

Variable	Units	-----Primary-----			-----Secondary-----			-----Return Flow-----		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
TP	mg L ⁻¹	0.02	bd0.02	0.33	0.03	bd0.02	0.49	0.09	bd0.02	0.31
DRP	mg L ⁻¹	bd0.01	bd0.01	0.24	bd0.01	bd0.01	0.31	bd0.01	bd0.01	0.14
NO₃-N	mg L ⁻¹	bd0.05	bd0.05	0.40	bd0.05	bd0.05	2.78	bd0.05	bd0.05	0.56
NO₂-N	mg L ⁻¹	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	bd0.05	0.05
NH₃-N	mg L ⁻¹	bd0.05	bd0.05	0.07	bd0.05	bd0.05	0.11	bd0.05	bd0.05	bd0.05
TKN	mg L ⁻¹	0.30	0.10	1.7	0.4	0.2	2.0	0.55	0.1	1.3
TN	mg L ⁻¹	0.30	0.10	2.1	0.4	0.2	4.0	0.63	0.4	1.7
TDS	mg L ⁻¹	238.5	185	691	248	177	977	359.5	191	909
Electrical Conductivity	µS cm ⁻¹	379.5	197	1070	420	199	1480	543.5	336	1430
Sodium Adsorption Ratio		0.84	0.32	3.87	1.18	0.42	5.23	2.51	0.46	4.30
Hardness	mg L ⁻¹	155	137	307	154.5	127	342	183.5	159	345
Cl-	mg L ⁻¹	9.7	5.0	65	12.9	5.2	60.5	12.7	7.5	56.5
Total Na⁺	mg L ⁻¹	19.5	8	132	26	8	211	57.5	9	182
Total K⁺	mg L ⁻¹	1.35	0.8	7.4	1.6	0.8	12.9	3.1	1.2	8
Total Ca²⁺	mg L ⁻¹	36.35	25.4	53	33.1	24.2	59.7	38.4	36.3	66.2
Total Mg²⁺	mg L ⁻¹	15.45	13.3	39.9	16.6	13.4	37.2	19.7	13.1	41.3
Alkalinity	mg L ⁻¹	126	96	352	119	67	238	162.5	119	245
HCO₃⁻	mg L ⁻¹	143	97	375	136.5	82	278	189	145	270
SO₄⁻²	mg L ⁻¹	63.6	41.4	268	77.4	41.2	467	137	39.8	425
Total coliforms	MPN 100mL ⁻¹	1550	387	>2420	1300	201	>2420	>2420	201	>2420
<i>E. coli</i>	MPN 100mL ⁻¹	15	<1	161	91	23	>2420	141	70	687
Total Suspended Solids	mg L ⁻¹	5	bd3	70	6	bd3	23	13	bd3	47

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Appendix 4.2. Median, minimums and maximums for metal and pesticide variables for the Aetna Irrigation District Primary (n=8) and Return Flow sites (n=8).

Variable	Units	----- Primary -----			----- Secondary -----			----- Return Flow -----		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
Aluminum	mg L ⁻¹	0.97	0.32	1.43				0.45	0.24	0.83
Arsenic	mg L ⁻¹	0.0013	0.0012	0.0017				0.0014	0.0014	0.0018
Boron	mg L ⁻¹	bd0.05	bd0.05	0.15				bd0.05	bd0.05	0.15
Copper	mg L ⁻¹	0.001	bd0.001	0.002				0.00075	bd0.001	0.002
Iron	mg L ⁻¹	0.6385	0.249	0.973				0.2965	0.167	0.481
Lead	mg L ⁻¹	0.00035	0.0002	0.0006				0.0002	0.0001	0.0003
Lithium	mg L ⁻¹	bd0.01	bd0.01	bd0.01				bd0.01	bd0.01	bd0.01
Manganese	mg L ⁻¹	0.0255	0.014	0.032				0.0115	0.005	0.017
Nickel	mg L ⁻¹	bd0.002	bd0.002	bd0.002				bd0.002	bd0.002	bd0.002
Selenium	mg L ⁻¹	0.0003	bd0.0004	0.0009				0.00035	bd0.0004	0.0008
Thallium	mg L ⁻¹	bd0.0001	bd0.0001	bd0.0001				bd0.0001	bd0.0001	0.0001
Titanium	mg L ⁻¹	0.0195	0.006	0.067				0.0125	0.005	0.05
Uranium	mg L ⁻¹	0.0004	0.0003	0.0005				0.0004	0.0003	0.0006
Vanadium	mg L ⁻¹	0.003	0.001	0.004				0.002	bd0.001	0.003
Zinc	mg L ⁻¹	0.007	0.004	0.023				0.0125	0.005	0.016
2,4-D	µg L ⁻¹	0.082	0	0.216				0.084	0	0.212
Bromoxynil	µg L ⁻¹	0	0	0				0	0	0
Clopyralid	µg L ⁻¹	0	0	0				0	0	0
Dicamba	µg L ⁻¹	0.021	0	0.087				0.029	0	0.064
Mecoprop	µg L ⁻¹	0	0	0				0	0	0
MCPA	µg L ⁻¹	0	0	0				0	0	0
Dichlorprop	µg L ⁻¹	0	0	0				0	0	0

Appendix 4.2. Median, minimums and maximums for selected metal and pesticide variables for the Bow River Irrigation District Primary (n=16), Secondary (n=48) and Return Flow sites (n=44), including AEP-P3 and AEP-S2.

Variable	Units	----- Primary -----			----- Secondary -----			----- Return Flow -----		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
Aluminum	mg L ⁻¹	0.07	bd0.01	2.74	0.09	bd0.01	0.40	0.085	bd0.01	1.53
Arsenic	mg L ⁻¹	0.0011	bd0.0004	0.0032	0.0014	bd0.0004	0.0091	0.0019	bd0.0004	0.0032
Boron	mg L ⁻¹	bd0.05	bd0.05	0.21	bd0.05	bd0.05	0.21	bd0.05	bd0.05	0.19
Copper	mg L ⁻¹	0.001	bd0.001	0.003	0.001	bd0.001	0.003	0.0015	bd0.001	0.003
Iron	mg L ⁻¹	0.048	0.015	0.196	0.083	0.018	0.354	0.115	0.019	1.610
Lead	mg L ⁻¹	bd0.0001	bd0.0001	0.0002	bd0.0001	bd0.0001	0.0007	0.0001	bd0.0001	0.0009
Lithium	mg L ⁻¹	0.01	bd0.01	0.02	0.01	bd0.01	0.05	0.02	0.01	0.04
Manganese	mg L ⁻¹	0.006	0.002	0.047	0.015	0.002	0.056	0.025	0.004	0.084
Nickel	mg L ⁻¹	bd0.002	bd0.002	0.003	bd0.002	bd0.002	0.003	bd0.002	bd0.002	0.005
Selenium	mg L ⁻¹	0.0007	bd0.0004	0.01	0.0008	bd0.0004	0.0017	0.0008	bd0.0004	0.0018
Thallium	mg L ⁻¹	bd0.0001	bd0.0001	0.0001	bd0.0001	bd0.0001	0.0003	bd0.0001	bd0.0001	0.0001
Titanium	mg L ⁻¹	0.002	bd0.001	0.054	0.003	0.0005	0.039	0.0075	bd0.001	0.056
Uranium	mg L ⁻¹	0.0015	bd0.001	0.0019	0.0016	0.0009	0.0020	0.0016	0.0006	0.0027
Vanadium	mg L ⁻¹	bd0.001	bd0.001	0.006	bd0.001	bd0.001	0.005	bd0.001	bd0.001	0.005
Zinc	mg L ⁻¹	0.007	bd0.004	0.036	0.006	bd0.004	0.016	0.008	bd0.004	0.030
2,4-D	µg L ⁻¹	0.069	0	0.148	0.044	0	0.526	0.120	0.034	1.284
Bromoxynil	µg L ⁻¹	0	0	0	0	0	0	0	0	0.234
Clopyralid	µg L ⁻¹	0	0	0	0	0	0.039	0	0	0.060
Dicamba	µg L ⁻¹	0	0	0.016	0	0	0.123	0.022	0	0.283
Mecoprop	µg L ⁻¹	0	0	0	0	0	0.016	0	0	0.098
MCPA	µg L ⁻¹	0	0	0.074	0.035	0	0.072	0	0	0.288
Dichlorprop	µg L ⁻¹	0	0	0	0	0	0.042	0	0	0.076

Appendix 4.2. Median, minimums and maximums for selected metal and pesticide variables for the Eastern Irrigation District Primary (n=8), Secondary (n=48) and Return Flow sites (n=40).

Variable	Units	----- Primary -----			----- Secondary -----			----- Return Flow -----		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
Aluminum	mg L ⁻¹	0.305	0.13	2.71	0.075	bd0.01	0.32	0.05	bd0.01	0.74
Arsenic	mg L ⁻¹	0.0006	0.0005	0.013	0.0012	0.0005	0.0065	0.0012	0.0008	0.0027
Boron	mg L ⁻¹	bd0.05	bd0.05	0.15	bd0.05	bd0.05	0.15	bd0.05	bd0.05	0.16
Copper	mg L ⁻¹	bd0.001	bd0.001	0.006	bd0.001	bd0.001	0.021	bd0.001	bd0.001	0.008
Iron	mg L ⁻¹	0.253	0.101	2.22	0.062	0.017	0.262	0.064	0.013	0.711
Lead	mg L ⁻¹	0.0002	0.0001	0.0014	bd0.0001	bd0.0001	0.0003	bd0.0001	bd0.0001	0.0022
Lithium	mg L ⁻¹	bd0.01	bd0.01	bd0.01	bd0.01	bd0.01	0.01	bd0.01	bd0.01	0.03
Manganese	mg L ⁻¹	0.0145	0.008	0.045	0.015	0.008	0.191	0.015	0.005	0.072
Nickel	mg L ⁻¹	bd0.002	bd0.002	0.004	bd0.002	bd0.002	0.005	bd0.002	bd0.002	0.004
Selenium	mg L ⁻¹	0.0008	bd0.0004	0.0012	0.0006	bd0.0004	0.0012	0.0006	bd0.0004	0.0013
Thallium	mg L ⁻¹	bd0.0001	bd0.0001	0.0006	bd0.0001	bd0.0001	0.0021	bd0.0001	bd0.0001	0.0003
Titanium	mg L ⁻¹	0.008	0.003	0.038	0.002	bd0.001	0.032	0.0015	bd0.001	0.042
Uranium	mg L ⁻¹	0.0007	0.0006	0.0009	0.0007	0.0006	0.0009	0.0008	0.0006	0.0014
Vanadium	mg L ⁻¹	bd0.001	bd0.001	0.007	bd0.001	bd0.001	0.004	bd0.001	bd0.001	0.002
Zinc	mg L ⁻¹	0.012	bd0.004	0.031	0.007	bd0.004	0.022	0.008	bd0.004	0.043
2,4-D	µg L ⁻¹	0.044	0	0.203	0.048	0	0.369	0.054	0	0.819
Bromoxynil	µg L ⁻¹	0	0	0	0	0	0	0	0	0.024
Clopyralid	µg L ⁻¹	0	0	0	0	0	0.010	0	0	0.006
Dicamba	µg L ⁻¹	0	0	0.325	0	0	0.130	0.042	0	2.070
Mecoprop	µg L ⁻¹	0	0	0.071	0	0	0.114	0	0	0.056
MCPA	µg L ⁻¹	0	0	0	0	0	0.046	0	0	0.054
Dichlorprop	µg L ⁻¹	0	0	0	0	0	0	0	0	0.022

Appendix 4.2. Median, minimums and maximums for selected metal and pesticide variables for the Lethbridge Northern Irrigation District Primary site samples (n=8), Secondary site samples (n=40) and Return Flow site samples (n=16).

Variable	Units	----- Primary -----			----- Secondary -----			----- Return Flow -----		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
Aluminum	mg L ⁻¹	0.23	0.13	0.54	0.18	0.04	2.99	0.80	0.23	7.42
Arsenic	mg L ⁻¹	0.0002	bd0.0004	0.0004	0.0015	bd0.0004	0.0038	0.0025	0.0018	0.0038
Boron	mg L ⁻¹	bd0.05	bd0.05	0.16	bd0.05	bd0.05	0.18	bd0.05	bd0.05	0.24
Copper	mg L ⁻¹	bd0.001	bd0.001	0.002	0.001	bd0.001	0.004	0.003	0.001	0.007
Iron	mg L ⁻¹	0.134	0.072	0.347	0.128	0.038	2.82	0.718	0.226	6.32
Lead	mg L ⁻¹	0.0001	bd0.0001	0.0002	0.0001	bd0.0001	0.0014	0.0004	0.0001	0.0033
Lithium	mg L ⁻¹	bd0.01	bd0.01	bd0.01	bd0.01	bd0.01	0.05	bd0.01	bd0.01	0.02
Manganese	mg L ⁻¹	0.004	0.003	0.008	0.016	0.004	0.055	0.040	0.019	0.17
Nickel	mg L ⁻¹	bd0.002	bd0.002	bd0.002	bd0.002	bd0.002	0.005	bd0.002	bd0.002	0.009
Selenium	mg L ⁻¹	0.0007	bd0.0004	0.0019	0.0007	bd0.0004	0.010	0.0007	bd0.0004	0.0014
Thallium	mg L ⁻¹	bd0.0001	bd0.0001	bd0.0001	bd0.0001	bd0.0001	0.0010	bd0.0001	bd0.0001	0.0001
Titanium	mg L ⁻¹	0.005	0.003	0.040	0.008	0.001	0.062	0.046	0.006	0.141
Uranium	mg L ⁻¹	0.0004	0.0003	0.0004	0.0006	0.0003	0.0010	0.0009	0.0006	0.0015
Vanadium	mg L ⁻¹	bd0.001	bd0.001	0.002	0.001	bd0.001	0.010	0.004	0.001	0.018
Zinc	mg L ⁻¹	0.006	bd0.004	0.022	0.008	bd0.004	0.050	0.0115	bd0.004	0.056
2,4-D	µg L ⁻¹	0	0	0.024	0.046	0	0.263	0.082	0.023	0.354
Bromoxynil	µg L ⁻¹	0	0	0	0	0	0	0	0	0.025
Clopyralid	µg L ⁻¹	0	0	0	0	0	0	0	0	0
Dicamba	µg L ⁻¹	0	0	0	0	0	0.058	0	0	0.043
Mecoprop	µg L ⁻¹	0	0	0.012	0	0	0	0	0	0
MCPA	µg L ⁻¹	0	0	0	0	0	0.075	0	0	0.036
Dichlorprop	µg L ⁻¹	0	0	0	0	0	0	0	0	0

Appendix 4.2 Median, minimums and maximums for selected metal and pesticide variables for the Magrath Irrigation District Primary site samples (n=24), Secondary sites (n=16) and Return Flow site samples (n=8), including sites AEP-P1, AEP-S1 and AEP-S2.

Variable	Units	Primary			Secondary			Return		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
Aluminum	mg L ⁻¹	0.14	0.03	1.00	0.15	0.04	0.52	0.57	0.02	3.62
Arsenic	mg L ⁻¹	0.0006	bd0.0004	0.002	0.0005	bd0.0004	0.0006	0.0007	bd0.0004	0.0010
Boron	mg L ⁻¹	bd0.05	bd0.05	0.21	bd0.05	bd0.05	0.19	bd0.05	bd0.05	0.49
Copper	mg L ⁻¹	0.001	bd0.001	0.083	bd0.001	bd0.001	0.002	0.002	bd0.001	0.004
Iron	mg L ⁻¹	0.103	bd0.05	0.838	0.109	0.034	0.305	0.615	0.148	2.850
Lead	mg L ⁻¹	0.0001	bd0.0001	0.0013	bd0.0001	bd0.0001	0.0002	0.0002	bd0.0001	0.0017
Lithium	mg L ⁻¹	bd0.01	bd0.01	bd0.01	bd0.01	bd0.01	bd0.01	bd0.01	bd0.01	0.02
Manganese	mg L ⁻¹	0.003	0.001	0.037	0.005	0.002	0.01	0.016	0.009	0.107
Nickel	mg L ⁻¹	bd0.002	bd0.002	0.002	0.001	bd0.002	bd0.002	bd0.002	bd0.002	0.004
Selenium	mg L ⁻¹	0.0004	bd0.0004	0.0011	bd0.0004	bd0.0004	0.0009	0.0017	bd0.0004	0.0031
Thallium	mg L ⁻¹	bd0.0001	bd0.0001	0.0006	bd0.0001	bd0.0001	bd0.0001	bd0.0001	bd0.0001	0.0001
Titanium	mg L ⁻¹	0.005	bd0.001	0.042	bd0.001	bd0.001	0.04	0.018	bd0.001	0.094
Uranium	mg L ⁻¹	0.0004	0.0002	0.0009	0.0003	0.0002	0.0004	0.0017	0.0009	0.0041
Vanadium	mg L ⁻¹	bd0.001	bd0.001	0.004	bd0.001	bd0.001	0.001	0.002	bd0.001	0.009
Zinc	mg L ⁻¹	0.008	bd0.004	0.118	0.008	bd0.004	0.026	0.011	bd0.004	0.025
2,4-D	µg L ⁻¹	0.025	0	0.126	0	0	0.526	0.045	0	0.090
Bromoxynil	µg L ⁻¹	0	0	0	0	0	0	0	0	0.061
Clopyralid	µg L ⁻¹	0	0	0	0	0	0	0	0	0
Dicamba	µg L ⁻¹	0	0	0	0	0	0.136	0	0	0.184
Mecoprop	µg L ⁻¹	0	0	0	0	0	0.024	0	0	0
MCPA	µg L ⁻¹	0	0	0.050	0	0	0	0	0	0.121
Dichlorprop	µg L ⁻¹	0	0	0	0	0	0	0	0	0.015

Appendix 4.2 Median, minimums and maximums for metals variables for the Mountain View Irrigation District Primary site samples (n=8) and Return Flow site samples (n=8).

Variable	Units	Primary			Secondary			Return		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
Aluminum	mg L ⁻¹	0.09	0.03	0.11				0.42	0.08	1.71
Arsenic	mg L ⁻¹	0.0011	0.0009	0.0014				0.0013	0.0010	0.0023
Boron	mg L ⁻¹	bd0.05	bd0.05	0.14				bd0.05	bd0.05	0.19
Copper	mg L ⁻¹	bd0.001	bd0.001	bd0.001				0.0008	bd0.001	0.002
Iron	mg L ⁻¹	0.112	0.061	0.174				0.492	0.19	1.23
Lead	mg L ⁻¹	bd0.0001	bd0.0001	0.0001				0.0002	bd0.0001	0.0007
Lithium	mg L ⁻¹	bd0.01	bd0.01	bd0.01				bd0.01	bd0.01	0.01
Manganese	mg L ⁻¹	0.042	0.03	0.144				0.012	0.006	0.107
Nickel	mg L ⁻¹	bd0.002	bd0.002	bd0.002				bd0.002	bd0.002	0.002
Selenium	mg L ⁻¹	bd0.0004	bd0.0004	0.0009				0.0004	bd0.0004	0.0008
Thallium	mg L ⁻¹	bd0.0001	bd0.0001	bd0.0001				bd0.0001	bd0.0001	bd0.0001
Titanium	mg L ⁻¹	0.003	0.001	0.033				0.009	0.003	0.055
Uranium	mg L ⁻¹	0.0003	0.0002	0.0004				0.0004	0.0003	0.0014
Vanadium	mg L ⁻¹	bd0.001	bd0.001	bd0.001				0.0015	bd0.001	0.005
Zinc	mg L ⁻¹	0.012	bd0.004	0.021				0.0105	0.005	0.018
2,4-D	µg L ⁻¹	0.023	0	0.062				0.042	0	0.048
Bromoxynil	µg L ⁻¹	0	0	0				0	0	0
Clopyralid	µg L ⁻¹	0	0	0				0	0	0
Dicamba	µg L ⁻¹	0	0	0.013				0	0	0
Mecoprop	µg L ⁻¹	0	0	0				0	0	0
MCPA	µg L ⁻¹	0	0	0				0	0	0
Dichlorprop	µg L ⁻¹	0	0	0				0	0	0

Appendix 4.2 Median, minimums and maximums for selected metal and pesticide variables for the Raymond Irrigation District Primary site samples (n=8) and Return Flow site samples (n=16).

Variable	Units	----- Primary -----			----- Secondary -----			----- Return Flow -----		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
Aluminum	mg L ⁻¹	0.18	0.13	0.31				1.35	0.45	2.55
Arsenic	mg L ⁻¹	0.0008	0.0006	0.0008				0.0016	0.0010	0.0025
Boron	mg L ⁻¹	bd0.05	bd0.05	0.17				bd0.05	bd0.05	0.20
Copper	mg L ⁻¹	bd0.001	bd0.001	0.002				0.002	0.001	0.004
Iron	mg L ⁻¹	0.139	0.098	0.241				1.050	0.454	2.040
Lead	mg L ⁻¹	0.0001	bd0.0001	0.0002				0.0006	0.0003	0.0012
Lithium	mg L ⁻¹	bd0.01	bd0.01	bd0.01				bd0.01	bd0.01	0.01
Manganese	mg L ⁻¹	0.009	0.008	0.012				0.035	0.017	0.093
Nickel	mg L ⁻¹	bd0.002	bd0.002	bd0.002				bd0.002	bd0.002	0.003
Selenium	mg L ⁻¹	0.0006	0.0004	0.0015				0.0008	0.0005	0.0091
Thallium	mg L ⁻¹	bd0.0001	bd0.0001	bd0.0001				bd0.0001	bd0.0001	0.0004
Titanium	mg L ⁻¹	0.005	0.003	0.039				0.034	0.016	0.074
Uranium	mg L ⁻¹	0.0005	0.0003	0.0008				0.0010	0.0006	0.0016
Vanadium	mg L ⁻¹	bd0.001	bd0.001	0.002				0.004	0.003	0.006
Zinc	mg L ⁻¹	0.007	bd0.004	0.016				0.010	bd0.004	0.022
2,4-D	µg L ⁻¹	0.057	0.025	0.164				0.125	0	0.634
Bromoxynil	µg L ⁻¹	0	0	0				0	0	0
Clopyralid	µg L ⁻¹	0	0	0				0	0	0
Dicamba	µg L ⁻¹	0	0	0.027				0	0	0.056
Mecoprop	µg L ⁻¹	0	0	0				0	0	0
MCPA	µg L ⁻¹	0	0	0.049				0	0	0.070
Dichlorprop	µg L ⁻¹	0	0	0				0	0	0.023

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Appendix 4.2. Median, minimum and maximum values for selected metal and pesticide variables for the St. Mary River Irrigation District Primary site samples (n=24), Secondary site samples (n=39) and Return Flow site samples (n=55).

Variable	Units	----- Primary -----			----- Secondary -----			----- Return Flow -----		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
Aluminum	mg L ⁻¹	0.19	0.05	0.72	0.21	0.02	1.67	0.22	0.01	2.84
Arsenic	mg L ⁻¹	0.0009	0.0005	0.0032	0.0014	0.0005	0.030	0.0017	0.0006	0.080
Boron	mg L ⁻¹	bd0.05	bd0.05	0.25	bd0.05	bd0.05	0.15	bd0.05	bd0.05	0.17
Copper	mg L ⁻¹	bd0.001	bd0.001	0.002	0.001	bd0.001	0.003	0.001	bd0.001	0.004
Iron	mg L ⁻¹	0.146	0.047	0.649	0.189	0.019	1.11	0.197	0.026	2.440
Lead	mg L ⁻¹	0.0001	bd0.0001	0.0004	0.0001	bd0.0001	0.0006	0.0001	bd0.0001	0.0015
Lithium	mg L ⁻¹	bd0.01	bd0.01	0.01	bd0.01	bd0.01	0.01	0.01	bd0.01	0.02
Manganese	mg L ⁻¹	0.014	0.008	0.104	0.019	0.009	0.221	0.024	0.009	0.205
Nickel	mg L ⁻¹	bd0.002	bd0.002	0.009	bd0.002	bd0.002	0.002	bd0.002	bd0.002	0.003
Selenium	mg L ⁻¹	0.0004	bd0.0004	0.0012	0.0004	bd0.0004	0.0013	0.0004	bd0.0004	0.0012
Thallium	mg L ⁻¹	bd0.0001	bd0.0001	bd0.0001	bd0.0001	bd0.0001	0.0004	bd0.0001	bd0.0001	0.0001
Titanium	mg L ⁻¹	0.005	0.002	0.036	0.006	bd0.001	0.055	0.007	bd0.001	0.059
Uranium	mg L ⁻¹	0.0008	0.0004	0.0012	0.0009	0.0005	0.0013	0.0009	0.0005	0.0014
Vanadium	mg L ⁻¹	bd0.001	bd0.001	0.003	bd0.001	bd0.001	0.007	0.001	bd0.001	0.007
Zn	mg L ⁻¹	0.007	bd0.004	0.022	0.006	bd0.004	0.029	0.007	bd0.004	0.025
2,4-D	µg L ⁻¹	0.116	0.036	0.789	0.093	0.028	1.765	0.125	0.030	37.384
Bromoxynil	µg L ⁻¹	0	0	0.015	0	0	0.030	0	0	0.017
Clopyralid	µg L ⁻¹	0	0	0	0	0	0	0	0	0
Dicamba	µg L ⁻¹	0.008	0	0.098	0	0	0.117	0	0	0.460
Mecoprop	µg L ⁻¹	0	0	0	0	0	0.042	0	0	0
MCPA	µg L ⁻¹	0.047	0	0.590	0.047	0	0.618	0.043	0	1.391
Dichlorprop	µg L ⁻¹	0	0	0.037	0	0	0.055	0	0	0.090

Appendix 4.2. Median, minimum and maximum values for selected metal and pesticide variables for the Taber Irrigation District Primary site samples (n=8), secondary site samples (n=24) and Return Flow site samples (n=16).

Variable	Units	----- Primary -----			----- Secondary -----			----- Return Flow -----		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
Aluminum	mg L ⁻¹	0.12	0.06	0.19	0.06	0.01	0.53	0.12	0.03	0.45
Arsenic	mg L ⁻¹	0.0008	0.0006	0.0015	0.0018	0.0006	0.0025	0.0020	0.0011	0.0026
Boron	mg L ⁻¹	bd0.05	bd0.05	0.15	bd0.05	bd0.05	0.22	bd0.05	bd0.05	0.24
Copper	mg L ⁻¹	bd0.001	bd0.001	0.002	bd0.001	bd0.001	0.003	0.001	bd0.001	0.002
Iron	mg L ⁻¹	0.079	0.059	0.145	0.067	0.013	0.333	0.130	0.039	0.559
Lead	mg L ⁻¹	bd0.0001	bd0.0001	bd0.0001	bd0.0001	bd0.0001	0.0002	0.0001	bd0.0001	0.0003
Lithium	mg L ⁻¹	bd0.01	bd0.01	0.01	bd0.01	bd0.01	0.02	bd0.01	bd0.01	0.02
Manganese	mg L ⁻¹	0.010	0.007	0.017	0.020	0.008	0.056	0.028	0.013	0.05
Nickel	mg L ⁻¹	bd0.002	bd0.002	bd0.002	bd0.002	bd0.002	0.004	bd0.002	bd0.002	bd0.002
Selenium	mg L ⁻¹	0.0006	bd0.0004	0.0008	0.0005	bd0.0004	0.0014	0.0006	bd0.0004	0.0011
Thallium	mg L ⁻¹	bd0.0001	bd0.0001	0.0002	bd0.0001	bd0.0001	0.0001	bd0.0001	bd0.0001	bd0.0001
Titanium	mg L ⁻¹	0.003	0.002	0.029	0.002	bd0.001	0.034	0.003	bd0.001	0.027
Uranium	mg L ⁻¹	0.0008	0.0006	0.0012	0.0008	0.0006	0.0014	0.0010	0.0007	0.0020
Vanadium	mg L ⁻¹	bd0.001	bd0.001	0.001	bd0.001	bd0.001	0.002	0.001	bd0.001	0.002
Zinc	mg L ⁻¹	0.006	bd0.004	0.012	0.006	bd0.004	0.065	0.008	bd0.004	0.044
2,4-D	µg L ⁻¹	0.104	0.059	0.195	0.199	0	0.795	0.335	0.103	0.756
Bromoxynil	µg L ⁻¹	0	0	0	0	0	0	0	0	0
Clopyralid	µg L ⁻¹	0	0	0	0	0	0.014	0	0	0
Dicamba	µg L ⁻¹	0.011	0	0.047	0.028	0	0.117	0.047	0	0.136
Mecoprop	µg L ⁻¹	0	0	0	0	0	0.111	0	0	0.046
MCPA	µg L ⁻¹	0.035	0	0.137	0.050	0	0.384	0.060	0	0.237
Dichlorprop	µg L ⁻¹	0	0	0.037	0	0	0.076	0	0	0.082

Appendix 4.2. Median, minimum and maximum values for selected metal and pesticide variables for the United Irrigation District Primary site samples (n=8), secondary site samples (n=8) and Return Flow site samples (n=16).

Variable	Units	Primary			Secondary			Return Flow		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
Aluminum	mg L ⁻¹	0.05	0.02	0.19	0.08	0.04	0.13	1.74	0.27	6.17
Arsenic	mg L ⁻¹	0.0002	bd0.0004	0.0004	0.0005	0.0004	0.0006	0.0012	0.0008	0.0022
Boron	mg L ⁻¹	bd0.05	bd0.05	0.13	bd0.05	bd0.05	0.17	bd0.05	bd0.05	0.19
Copper	mg L ⁻¹	bd0.001	bd0.001	bd0.001	bd0.001	bd0.001	bd0.001	0.002	bd0.001	0.005
Iron	mg L ⁻¹	0.042	0.025	0.125	0.066	0.033	0.085	1.165	0.132	4.830
Lead	mg L ⁻¹	bd0.0001	bd0.0001	0.0001	bd0.0001	bd0.0001	0.0004	0.0006	0.0001	0.0028
Lithium	mg L ⁻¹	bd0.01	bd0.01	bd0.01	bd0.01	bd0.01	bd0.01	bd0.01	bd0.01	0.01
Manganese	mg L ⁻¹	0.002	0.002	0.004	0.012	0.008	0.052	0.030	0.006	0.125
Nickel	mg L ⁻¹	bd0.002	bd0.002	bd0.002	bd0.002	bd0.002	bd0.002	0.002	bd0.002	0.005
Selenium	mg L ⁻¹	bd0.0004	bd0.0004	0.0007	0.0003	bd0.0004	0.0013	0.0004	bd0.0004	0.0007
Thallium	mg L ⁻¹	bd0.0001	bd0.0001	bd0.0001	bd0.0001	bd0.0001	bd0.0001	bd0.0001	bd0.0001	bd0.0001
Titanium	mg L ⁻¹	0.002	bd0.001	0.024	0.002	0.001	0.035	0.044	0.005	0.126
Uranium	mg L ⁻¹	0.0003	0.0002	0.0003	0.0003	0.0003	0.0004	0.0006	0.0004	0.0007
Vanadium	mg L ⁻¹	bd0.001	bd0.001	bd0.001	bd0.001	bd0.001	bd0.001	0.004	0.001	0.014
Zinc	mg L ⁻¹	0.006	0.004	0.016	0.008	0.002	0.034	0.013	0.005	0.037
2,4-D	µg L ⁻¹	0	0	0	0.024	0	0.316	0.093	0	0.618
Bromoxynil	µg L ⁻¹	0	0	0	0	0	0	0	0	0
Clopyralid	µg L ⁻¹	0	0	0	0	0	0	0	0	0
Dicamba	µg L ⁻¹	0	0	0	0.011	0	0.114	0.042	0	0.226
Mecoprop	µg L ⁻¹	0	0	0	0	0	0	0	0	0.007
MCPA	µg L ⁻¹	0	0	0	0	0	0	0	0	0.008
Dichlorprop	µg L ⁻¹	0	0	0	0	0	0	0	0	0.004

Appendix 4.2. Median, minimum and maximum values for selected metal and pesticide variables for the Western Irrigation District Primary site samples (n=24), secondary site samples (n=32) and Return Flow site samples (n=8), including AEP-P2.

Variable	Units	----- Primary -----			----- Secondary -----			----- Return Flow -----		
		Median	Min	Max	Median	Min	Max	Median	Min	Max
Aluminum	mg L ⁻¹	0.14	0.06	0.54	0.30	0.09	1.6	0.94	0.06	3.01
Arsenic	mg L ⁻¹	0.0010	bd0.0004	0.0072	0.0011	0.0005	0.0021	0.0023	bd0.0004	0.0047
Boron	mg L ⁻¹	bd0.05	bd0.05	0.13	bd0.05	bd0.05	0.15	bd0.05	bd0.05	0.18
Copper	mg L ⁻¹	0.001	bd0.001	0.002	0.001	bd0.001	0.013	0.003	bd0.001	0.008
Iron	mg L ⁻¹	0.125	0.061	0.446	0.2625	0.094	1.23	0.736	0.069	2.06
Lead	mg L ⁻¹	0.00015	bd0.0001	0.0004	0.0002	bd0.0001	0.0011	0.0004	0.0001	0.001
Lithium	mg L ⁻¹	bd0.01	bd0.01	0.03	bd0.01	bd0.01	0.02	0.015	bd0.01	0.05
Manganese	mg L ⁻¹	0.018	0.011	0.039	0.019	0.01	0.05	0.044	0.004	0.14
Nickel	mg L ⁻¹	bd0.002	bd0.002	0.003	bd0.002	bd0.002	0.004	0.004	bd0.002	0.007
Selenium	mg L ⁻¹	0.0010	0.0005	0.0015	0.0009	0.0004	0.0015	0.0010	bd0.0004	0.0015
Thallium	mg L ⁻¹	bd0.0001	bd0.0001	bd0.0001	bd0.0001	bd0.0001	0.0002	bd0.0001	bd0.0001	0.0015
Titanium	mg L ⁻¹	0.004	0.002	0.037	0.008	0.002	0.046	0.024	0.001	0.062
Uranium	mg L ⁻¹	0.0012	0.0007	0.0024	0.0012	0.0007	0.004	0.0016	0.0006	0.0052
Vanadium	mg L ⁻¹	bd0.001	bd0.001	0.006	0.002	bd0.001	0.004	0.004	bd0.001	0.009
Zinc	mg L ⁻¹	0.004	bd0.004	0.062	0.005	bd0.004	0.204	0.011	0.004	0.048
2,4-D	µg L ⁻¹	0.255	0.025	1.756	0.388	0.081	18.616	0.210	0.054	1.282
Bromoxynil	µg L ⁻¹	0	0	0.037	0	0	0.092	0	0	0.067
Clopyralid	µg L ⁻¹	0	0	0.025	0	0	0.051	0	0	0.021
Dicamba	µg L ⁻¹	0.044	0	0.464	0.056	0	6.733	0.064	0	0.419
Mecoprop	µg L ⁻¹	0.093	0	2.331	0.093	0	0.429	0.019	0	0.098
MCPA	µg L ⁻¹	0	0	0.121	0	0	1.766	0	0	0.156
Dichlorprop	µg L ⁻¹	0	0	0.050	0	0	0.040	0	0	0.020