Appendix 5

GROUNDWATER MONITORING DATA

Site ID	Piezometer / Water Bore	Date	Time	Depth to Ground - mbgl	Depth to Stand - mbtoc	Field Parameters			NEPM Suite														Major Cations					Major Anions										
						pH - Field	EC - Field - µs/cm	Temp - Field - °C	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Maganese (Mn) - mg/L	Nickel (Ni) - mg/L	Lead (Pb) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L	Mercury (Hg) - mg/L	EC - Lab - µs/cm	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Total Cations - meq/L	Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L	Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Total Iron (Fe)	Total Dissolved Solids
P1	NG1	1-Nov-07	1450	52.02	53.00																																	
		17-Dec-07		50.02	51.00																																	
		23-Jan-08	1145	47.43	48.42																																	
		3-Mar-08	1230	46.53	47.51																																	
		2-Apr-08	1040	45.51	46.50																																	
		9-May-08	826	44.25	45.23																																	
		2-Jun-08	1200	43.25	44.24																																	
		1-Jul-08	1150	42.00	42.98																																	
		11-Aug-08	1350	40.24	41.22																																	
		14-Aug-08	1047	40.15	41.13																																	
		19-Aug-08	925	39.96	40.94																																	
		9-Sep-08	830	42.82	43.80	7.6	470	20.8	0.008	0.684	0.003	0.0008	0.094	0.041	0.128	2.33	0.154	0.516	0.11	0.250	0.0001	3710	26	25	933	24	44.6	641	43	<1	<1	1190	1190	42.7	2.06	1.62	56.7	2380
		14-Nov-08	956	45.86	46.84																																	
		3-Dec-08	1505	45.18	46.16																																	
		16-Feb-09	1255	42.24	43.22																																	
P2	NG2	1-Nov-07	1420	30.58	31.50																																	
		17-Dec-07		29.58	30.50																																	
		23-Jan-08	1120	28.97	29.90																																	
		3-Mar-08	1655	29.48	30.40																																	
		2-Apr-08	1100	29.46	30.38																																	
		9-May-08	846	29.45	30.38																																	
		2-Jun-08	1224	29.46	30.39																																	
		1-Jul-08	1215	29.43	30.35																																	
		11-Aug-08	1435	29.44	30.36																																	
		14-Aug-08	1105	29.45	30.37																																	
		19-Aug-08	1055	29.45	30.37																																	
		9-Sep-08	1030	29.88	30.80	7.2	15.7	20.8	0.010	1.40	0.004	0.0006	0.024	0.029	0.057	2.96	0.048	0.091	0.06	0.093	<0.0001	17100	189	453	4060	126	227	5650	366	<1	<1	2550	2550	218	1.97	4.52	33.4	12900
		14-Nov-08	1012	29.64	30.56																																	
		16-Feb-09	1329	29.32	30.23																																	
P3	NG3	01/Nov/07	1530	9.92	10.85																																	
		17/Dec/07		10.07	11.00																																	
		23/Jan/08	1400	9.32	10.25																																	
		03/Mar/08	1640	9.87	10.80																																	
		02/Apr/08	1200	9.89	10.83																																	
		09/May/08	1002	9.90	10.83																																	
		02/Jun/08	1353	9.90	10.84																																	
		01/Jul/08	1345	9.91	10.84																																	
		11/Aug/08	1610	9.92	10.85																																	
		09/Sep/08	1300	9.77	10.70	7.07	1340	20.2	0.005	0.092	0.002	0.0002	0.004	0.006	0.002	0.496	0.014	0.030	<0.01	0.014	<0.0001	15800	331	504	3190	60	198	5250	1230	<1	<1	1310	1310	200	0.44	0.94	0.76	11700
		14/Nov/08	930	9.89	10.83																																	
		01/Dec/08	1120	9.86	10.80																																	
		12/Jan/09	1223	9.86	10.80																																	
P4	NG4	1-Nov-07	1610	18.49	19.40																																	
		11-Dec-07		18.09	19.00																																	
		17-Dec-07		18.09	19.00																																	
		23-Jan-08	1225	17.82	18.73																																	
		3-Mar-08	1505	18.3	19.21																																	
		2-Apr-08	1305	18.29	19.20																																	
		9-May-08	1110	18.26	19.17																																	
		2-Jun-08	1505	18.275	19.19																																	
		1-Jul-08	1448	18.24	19.15																																	
		11-Aug-08	1703	18.19	19.10																																	
		9-Sep-08	1400	17.99	18.9	6.7	1560	21.2	0.008	0.265	0.003	<0.0001	0.005	0.033	0.006	6.20	0.024	0.027	<0.01	0.013	<0.0001	17700	355	699	4550	124	276	7650	1700	<1	<1	1840	1840	288	2.10	1.70	3.93	16800
		14-Nov-08	920	18.16	19.06																																	
		1-Dec-08	1315	18.12	19.02																																	
		12-Jan-09	1239	18.10	19.00																																	
		23-Feb-09	1045	18.06	18.96																																	
P5	NG5	1-Nov-07	1620	29.06	30.00																																	
		11-Dec-07		29.06	30.00																																	
		17-Dec-07		29.06	30.00																																	
		23-Jan-08	1240	28.36	29.30																																	
		3-Mar-08	1455	27.97	28.91																																	
		2-Apr-08	1315	27.475	28.42																																	
		9-May-08	1120	26.92	27.86																																	
		2-Jun-08	1516	26.605	27.55																																	
		1-Jul-08	1500	26.26	27.20																																	
		14-Aug-08	1515	25.78	26.72																																	
		12-Sep-08	1015	26.56	27.5	7	1050	20.8	0.007	0.368	0.003	0.0002	0.004	0.019	0.007	1.92	0.051	0.081	<0.01	0.031	<0.0001	24600	456	494	3960	71	238	7300	719	<1	<1	1860	1860	258	4.16	2.03	2.01	12700
		14-Nov-08	908	27.06	28																																	
		1-Dec-08	1109	26.81	27.75																																	
		12-Jan-09	1249	26.41	27.35																																	
		16-Feb-09	1356	25.79	26.72																																	
P6	NG6	1-Nov-07	1640	90.21	91.10																																	
		11-Dec-07		90.11	91.00																																	
		17-Dec-07		90.11	91.00																																	
		23-Jan-08	1315	89.37	90.26																																	
		3-Mar-08	1440	89.91	90.80																																	
		2-Apr-08	1330	89.93	90.82																																	
		9-May-08	1145	89.91	90.80																																	
		2-Jun-08	1533	89.92	90.81																																	
		1-Jul-08	1519	89.92	90.81																																	
		12-Aug-08	1055	89.86	90.75																																	
		10-Sep-08		89.11	90.00				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14-Nov-08	1204	89.04	90.02																																	
		3-Dec-08	1336	89.05	90.03																																	
		23-Feb-09	1214	89.17	90.05																																	
P7	NG7	1-Nov-07	1700	62.87	63.80																																	
		11-Dec-07		62.07	63.00																																	
		17-Dec-07		62.07	63.00																																	
		23-Jan-08	1335	90.47	91.40																																	
		3-Mar-08	1425	90.00	90.93																																	
		2-Apr-08	1400	91.07	92.00																																	
		9-May-08	1202	89.52	90.45																																	
		2-Jun-08	1553	92.07	93.00																																	
		1-Jul-08	1544	92.07	93.00																																	
		12-Aug-08	1135	91.07	92.00																																	
		10-Sep-08	1115	62.87	63.80	7.95	1170	20.5	<0.001	0.031	<0.001	<0.0001	0.005	0.003	0.006	0.095	0.005	0.117	<0.01	0.033	<0.0001	149	1	1	25	3	1.33	26	4	<1	<1	19	19	1.20		0.55	0.79	101
		14-Nov-08	1213	91.08	92.00																																	
		3-Dec-08	1350	91.08	92.00																																	
		23-Feb-09	1240	89.17	90.10																																	
P8	NC-110S	3-Mar-08	1345	62.23	63.00																																	
		2-Apr-08	1415	50.52	51.29																																	
		9-May-08	1220	50.59	51.36																																	

		12-Sep-08	830	50.53	51.30	7.85	1120	21.2	<0.001	0.057	<0.001	<0.0001	<0.001	<0.001	0.001	0.037	<0.001	0.004	<0.01	0.007	<0.0001	805	33	10	121	9	7.96	64	20	<1	<1	276	276	7.74	1.35	0.14	0.09	455
		14-Nov-08	1247	50.55	51.33																																		
		3-Dec-08	1414	50.44	51.22																																		
		23-Feb-09	1326	50.48	51.30																																		
P9	GWB5S	3-Mar-08	1105	19.88	20.52																																		
		2-Apr-08	1135	19.88	20.52																																		
		9-May-08	929	19.87	20.51																																		
		2-Jun-08	1300	19.89	20.53																																		
		1-Jul-08	1255	19.86	20.50																																		
		14-Aug-08	1217	19.90	20.54																																		
		12-Sep-08	1230	19.66	20.30	6.8	1210	22.1	0.002	0.059	<0.001	0.0001	0.004	0.003	0.014	0.037	0.012	0.036	<0.01	0.042	<0.0001	451	30	12	43	5	4.51	42	24	<1	<1	139	139	4.46	0.52	0.13	1.32	295
		14-Nov-08	1103	19.80	20.44																																		
		01-Dec-08	1219	19.77	20.41																																		
		12-Jan-09	930	19.79	20.43																																		
		23-Feb-09	938	19.80	20.45																																		
P10	NC-030D	3-Mar-08	1315	15.56	16.53																																		
		2-Apr-08	1425	15.64	16.61																																		
		9-May-08	1230	15.88	16.85																																		
		2-Jun-08	1623	16.03	17.00																																		
		1-Jul-08	1610	15.13	16.10																																		
		14-Aug-08	1635	16.31	17.28																																		
		9-Sep-08	1700	20.03	21.00	7.92	1130	20.8	0.002	1.59	0.001	<0.0001	0.006	0.002	0.004	2.13	0.005	0.024	<0.01	0.023	<0.0001	6800	155	80	1490	30	79.9	2410	188	<1	<1	546	546	82.9	1.88	1.73	0.92	4170
		14-Nov-08	1301	53.36	54.33																																		
		3-Dec-08	1432	51.73	52.70																																		
		12-Jan-09	1130	47.89	48.86																																		
		23-Feb-09	1355	43.72	44.68																																		
P11	NC-030S	3-Mar-08	1320	22.18	23.17																																		
		2-Apr-08	1430	22.14	23.13																																		
		9-May-08	1232	22.26	23.25																																		
		2-Jun-08	1620	22.30	23.29																																		
		1-Jul-08	1612	22.33	23.32																																		
		12-Aug-08	1248	22.39	23.38																																		
		12-Sep-08	730	22.91	23.90	8.23	980	17.6	0.004	0.162	<0.001	<0.0001	<0.001	0.089	0.004	2.98	0.159	0.006	<0.01	0.016	<0.0001	2490	89	40	341	4	22.7	581	16	<1	<1	248	248	21.7	2.24	0.04	0.81	1330
		14-Nov-08	1258	23.02	24.01																																		
		3-Dec-08	1430	23.01	24.00																																		
		12-Jan-09	1125	23.01	24.00																																		
		23-Feb-09	1400	22.98	23.95																																		
P12	NC-098D	3-Mar-08	1135	36.70	37.51																																		
		2-Apr-08	1145	37.72	38.53																																		
		9-May-08	937	36.75	37.56																																		
		2-Jun-08	1312	36.78	37.59																																		
		1-Jul-08	1300	36.79	37.60																																		
		11-Aug-08		36.54	37.35																																		
		12-Sep-08	1130	36.49	37.30	6.8	1020	21.5	0.007	0.022	<0.001	<0.0001	0.002	0.008	0.002	0.053	0.002	0.132	<0.01	0.189	<0.0001	367	30	10	28	5	3.62	24	16	<1	<1	131	131	3.63	0.14	0.08	0.67	226
		14-Nov-08	1047	36.72	37.61																																		
		01-Dec-08	1200	36.67	37.56																																		
		12-Jan-09	915	36.66	37.57																																		
		18-Feb-09	1233	36.72	37.52																																		
P13	NC-098S	3-Mar-08	1140	8.51	9.38																																		
		2-Apr-08	1147	8.62	9.49																																		
		9-May-08	939	8.88	9.75																																		
		2-Jun-08	1308	9.00	9.88																																		
		1-Jul-08	1303	9.18	10.05																																		
		11-Aug-08		9.34	10.21																																		
		12-Sep-08	1045	9.43	10.30	7.1	1180	20.1	<0.001	0.153	<0.001	<0.0001	0.001	<0.001	0.001	0.134	0.002	0.007	<0.01	0.023	<0.0001	2040	50	89	253	7	21.0	279	30	<1	<1	556	556	19.6	3.47	0.24	0.11	1040
		14-Nov-08	1045	8.35	9.21																																		
		01-Dec-08	1202	8.48	9.34																																		
		12-Jan-09	920	7.53	8.39																																		
		18-Feb-09	1241	7.35	8.23																																		
P14	NC-100D	3-Mar-08																																					
		2-Apr-08																																					
		9-May-08																																					
		2-Jun-08																																					
		1-Jul-08																																					
		11-Aug-08																																					
		12-Sep-08							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14-Nov-08																																					
		3-Dec-08																																					
		12-Jan-09	945	58.42	58.77																																		
P15	NC-100S	3-Mar-08																																					
		2-Apr-08																																					
		9-May-08																																					
		2-Jun-08																																					
		1-Jul-08																																					
		11-Aug-08																																					
		12-Sep-08							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14-Nov-08																																					
		3-Dec-08																																					
		12-Jan-09	950	16.21	16.56																																		
P16	NC-119D	3-Mar-08	1410	51.25	52.03																																		
		2-Apr-08	1345	51.24	52.02																																		
		9-May-08	1152	51.21	51.99																																		
		2-Jun-08	1542	51.20	51.98																																		
		1-Jul-08	1525	51.12	51.90																																		
		12-Aug-08	1145	51.08	51.86																																		
		12-Sep-08	930	50.52	51.30	7.45	1085	20.5	0.001	0.029	<0.001	<0.0001	0.002	<0.001	0.002	0.070	0.036	0.394	<0.01	0.204	<0.0001	132	5	1	14	3	1.05	22	<1	<1	<1	25	25	1.12		2.00	4.43	109
		14-Nov-08	1227	56.22	57.00																																		
		3-Dec-08	1400	55.22	56.00																																		
		12-Jan-09	1055	48.67	49.45																																		
		23-Feb-09	1250	48.45	49.24																																		
P17	NC-119S	3-Mar-08	1405	55.96	56.56																																		
		2-Apr-08	1350	59.40	60.00																																		
		9-May-08	1157	59.05	59.65																																		
		2-Jun-08	1539	59.40	60.00																																		
		1-Jul-08	1527	43.40	44.00																																		
		12-Aug-08	1150	58.40	59.00																																		
		12-Sep-08		57.30	57.90				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14-Nov-08	1233	57.39	58.00																																		
		3-Dec-08	1404	57.39	58.00																																		
		12-Jan-09	1100	58.40	59.00																																		
		23-Feb-09	1258	48.88	49.50																																		
P18	NC-122	3-Mar-08	1530	13.40	14.24																																		
		2-Apr-08	1225	13.40	14.24																																		
		9-May-08	1027	13.45	14.29																																		
		2-Jun-08	1425	13.53	14.37																																		
		1-Jul-08	1414	13.56	14.40																																		
		11-Aug-08	1650	13.66	14.50																																		
		11-Sep-08	1030	13.16	14.00	6.75	1410	22.9	0.003	0.817	<0.001	<0.0001	0.008	0.032	0.007	0.137	0.059	0.046	0.03	0.022	<0.0001	3650	30	27	824	38	40.6	80	38	<1	<1	1870	1870	40.5	0.04	2.61	3.75	2370
		14-Nov-08	1123	12.70	13.49																																		
		01-Dec-08	1251	12.79	13.58																																		
		12-Jan-09	1015	12.88	13.67																																		

		2-Jun-08	1432	16.30	17.24																																
		1-Jul-08	1421	16.38	17.32																																
		14-Aug-08	1335	16.34	17.29																																
		17-Sep-08	1445	16.16	17.10	6.7	1340	23.2	0.001	1.26	<0.001	0.0001	0.018	0.043	0.005	0.728	0.320	0.015	<0.01	0.066	<0.0001	11000	99	141	1040	1400	97.6	1880	28	<1	<1	1880	1880	91.2	3.40	6.15	3.19	6220
		14-Nov-08	1130	19.19	20.18																																
		01-Dec-08	1244	17.26	18.21																																
		12-Jan-09	1025	16.87	17.82																																
		23-Feb-09	1008	24.20	24.60																																
P20	**NC-127**	**3-Mar-08**	1610	13.52	14.39																																
		2-Apr-08	1235	13.52	14.39																																
		9-May-08	1039	13.62	14.49																																
		2-Jun-08	1420	13.68	14.55																																
		1-Jul-08	1408	13.64	14.51																																
		11-Aug-08	1640	13.70	14.57																																
		9-Sep-08	1000	13.48	14.35	6.7	1140	19.6	<0.001	4.80	0.002	0.0003	0.003	0.001	0.005	0.035	0.014	0.004	<0.01	0.009	<0.0001	10500	62	68	2860	118	136	425	<1	<1	<1	5970	5970	131	1.83	10.3	1.57	9630
		14-Nov-08	1118	13.79	14.68																																
		01-Dec-08	1257	13.88	14.77																																
		12-Jan-09	1010	13.97	14.86																																
		23-Feb-09	920	14.06	14.95																																
WB1		**14-Aug-08**	1445	8.34	9.00																																
		12-Sep-08	1330	8.34	9.00	7.9	1060	23.5	0.005	3.96	0.002	0.0003	0.001	<0.001	0.002	0.015	<0.001	0.002	<0.01	0.091	<0.0001	14200	102	209	3740	204	190	53	3	<1	<1	8700	8700	175	4.06	11.9	0.64	8510
		14-Nov-08	**1139**	**8.46**	**9.12**																																
		01-Dec-08	1303	8.46	9.12																																
WB2		**11-Aug-08**	1515	9.22	9.41																																
		11-Sep-08	930	8.81	9.00	7.2	1010	20.7	<0.001	0.033	<0.001	<0.0001	<0.001	<0.001	0.001	0.003	0.002	<0.001	<0.01	<0.005	<0.0001	239	12	6	32	1	2.53	16	6	<1	<1	101	101	2.61		0.06	<0.05	153
		14-Nov-08	1056	6.12	6.31																																
		01-Dec-08	1212	6.30	6.49																																
		18-Feb-09	1250	4.41	4.60																																
WB3a		**11-Sep-08**	1230	8.09	8.60	7.7	1050	20.1	<0.001	0.179	<0.001	<0.0001	<0.001	<0.001	0.002	0.259	0.002	0.002	<0.01	0.009	<0.0001	703	39	20	78	4	7.11	54	10	<1	<1	268	268	7.08	0.10	0.26	0.34	431
		14-Nov-08	856	8.14	8.65																																
		01-Dec-08	1055	8.14	8.65																																
		12-Jan-09	1301	7.94	8.45																																
WB3b		**11-Sep-08**	1245	7.99	8.50	7.6	1250	19.8	<0.001	0.175	<0.001	<0.0001	<0.001	<0.001	0.002	0.255	0.001	0.001	<0.01	0.007	<0.0001	706	38	20	77	4	7.01	52	10	<1	<1	268	268	7.02	0.17	0.18	0.31	415
		14-Nov-08	854	8.05	8.56																																
		01-Dec-08	1057	7.99	8.50																																
		12-Jan-09	1303	7.84	8.33																																
WB4		**12-Sep-08**	1430	8.35	8.90	7.3	1120	19.8	<0.001	0.042	<0.001	<0.0001	<0.001	<0.001	0.002	0.003	0.002	<0.001	<0.01	0.006	<0.0001	1040	61	35	116	1	11.0	93	30	<1	<1	360	360	10.4	2.39	0.06	<0.05	461
		14-Nov-08	902	8.30	8.85																																
		12-Jan-09	1258	8.25	8.80																																
WB5a		**12-Sep-08**	1430	9.98	11.10	7.5	1200	21	<0.001	0.026	<0.001	<0.0001	<0.001	<0.001	0.004	0.033	<0.001	0.006	<0.01	0.008	<0.0001	510	36	18	32	2	4.66	29	28	<1	<1	160	160	4.59	0.72	0.05	0.10	281
		14-Nov-08	832	10.29	11.41																																
		01-Dec-08	1035	10.15	11.27																																
		12-Jan-09	1319	9.89	11.01																																
WB5b		**12-Sep-08**	1430	10.08	11.20	7.6	1150	21	<0.001	0.028	<0.001	<0.0001	<0.001	<0.001	0.003	0.031	0.001	0.006	<0.01	0.007	<0.0001	505	35	17	31	2	4.56	28	28	<1	<1	166	166	4.68	1.39	0.05	<0.05	278
		14-Nov-08	833	10.43	11.55																																
		01-Dec-08	1037	10.15	11.27																																
		12-Jan-09	1321	10.21	11.33																																
WB6a		**12-Sep-08**	1530	13.93	14.80	6.8	1120	20.4	<0.001	0.050	<0.001	<0.0001	<0.001	<0.001	0.008	0.302	0.002	0.029	<0.01	0.022	<0.0001	706	45	22	77	3	7.48	33	21	<1	<1	294	294	7.24	1.55	0.09	0.22	389
		12-Sep-08	1530	13.93	14.80	6.8	1120	20.4	<0.001	0.052	<0.001	<0.0001	<0.001	<0.001	0.005	0.419	0.004	0.014	<0.01	0.017	<0.0001	981	58	36	74	3	9.13	89	53	<1	<1	266	266	8.94	1.04	0.87	0.29	525
		14-Nov-08	823	14.31	15.19																																
		01-Dec-08	1030	14.29	15.17																																
		12-Jan-09	1326	14.24	15.12																																
WB6b		**12-Sep-08**	1530	11.33	12.20	7.2	1080	20.7	<0.001	0.052	<0.001	<0.0001	<0.001	<0.001	0.007	0.297	0.006	0.028	<0.01	0.050	<0.0001	781	45	22	83	3	7.78	35	21	<1	<1	305	305	7.52	1.62	0.09	0.28	405
		14-Nov-08	825	12.21	13.09																																
		01-Dec-08	1032	11.21	12.09																																
		12-Jan-09	1328	17.89	18.77																																
WB7		**11-Sep-08**	1330			6.9	1175	20.5	<0.001	0.006	<0.001	<0.0001	<0.001	<0.001	0.013	<0.001	<0.001	<0.001	<0.01	0.040	<0.0001	765	33	18	92	2	7.16	60	23	<1	<1	250	250	7.16	0.06	0.04	<0.05	410
		14-Nov-08	841	4.11	4.99																																
		01-Dec-08	1045	2.27	3.15																																
		12-Jan-09	1315	4.30	5.18																																
WB8		**12-Sep-08**							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14-Nov-08																																			
WB9	NC-008	**1-Dec-08**	1235	19.2	19.67				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-