

APPENDIX D

MONTHLY PUMPING RATE FACTORS FOR
DROUGHT SCENARIOS BY MUNICIPAL WELL FIELD

Table D1: Monthly Pumping Rate Factors for Drought Scenarios by Municipal Well Field

Municipal Well Field	Monthly Pumping Rate Factors for Risk Assessment Drought Scenarios											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Blair Road	1.09	1.00	0.98	0.88	0.98	1.10	1.10	1.02	0.89	0.99	0.98	0.98
Clemens Mill	1.02	1.05	1.01	1.02	1.04	1.01	1.00	0.99	0.97	0.97	0.96	0.97
Conestogo	0.90	0.89	0.80	0.85	1.02	1.25	1.26	1.23	1.05	0.94	0.88	0.93
Dunbar Road	0.99	1.04	1.03	1.03	1.03	1.05	1.02	1.05	0.99	0.98	0.93	0.86
Elgin Street	0.83	0.70	0.79	0.93	1.13	1.10	1.17	1.23	1.00	0.90	1.19	1.02
Erb Street	0.98	0.97	0.97	0.98	1.00	1.04	1.04	1.01	1.02	1.03	1.00	0.95
Greenbrook	1.03	1.02	1.01	0.94	1.00	0.96	0.89	0.93	1.02	1.06	1.05	1.10
Hespeler	0.91	0.71	0.83	0.90	0.99	1.10	1.15	1.10	1.07	1.17	1.10	0.98
Mannheim East	1.05	1.03	1.01	1.02	1.02	0.99	0.99	0.98	0.97	0.98	0.98	0.99
Mannheim Peaking	1.03	1.02	0.95	1.02	1.02	1.03	0.96	1.00	1.01	0.93	1.01	1.02
Mannheim West	1.03	1.02	0.95	1.02	1.02	1.03	0.96	1.00	1.01	0.93	1.01	1.02
Middleton Street	0.98	1.02	1.01	1.01	1.04	1.08	1.00	1.00	0.98	0.95	0.94	0.98
New Dundee	0.94	0.94	0.93	0.97	1.09	1.14	1.06	1.02	0.99	0.95	1.00	0.99
Parkway	1.03	1.07	1.08	1.09	1.07	0.98	0.98	0.95	0.89	0.97	1.04	0.86
Pinebush	1.01	0.99	0.95	0.99	1.01	1.06	1.05	1.05	1.02	0.95	0.97	0.94
Shades Mill	0.98	0.90	0.96	1.04	1.03	1.05	1.12	1.06	0.99	1.02	1.01	0.84
St. Agatha	0.95	0.96	0.97	1.00	1.06	1.13	1.09	1.06	1.03	0.97	0.88	0.90
Strange Street	0.70	0.69	0.65	0.78	1.11	1.24	1.32	1.28	1.23	1.15	0.97	0.87
Strasburg	0.97	0.95	0.99	1.03	1.04	0.98	1.04	1.05	1.03	1.02	0.97	0.94
Waterloo North	1.30	1.43	0.89	0.88	0.79	0.84	0.58	1.24	0.96	0.91	1.29	0.88
West Montrose	0.99	0.83	0.91	0.95	1.02	1.11	1.03	1.10	1.05	0.99	1.00	1.01
Willard	1.05	1.04	1.07	1.01	0.94	1.05	0.99	0.82	0.98	1.01	1.03	1.01
William Street	0.96	0.93	0.87	0.90	0.91	1.10	1.12	1.08	1.09	1.04	1.00	0.99
Woolner	1.01	1.08	0.96	1.19	1.03	1.16	1.20	1.03	0.95	0.88	0.83	0.69

Table D2: Monthly Pumping Rates for Drought Scenarios by Municipal Well Field

Municipal Well Field	Monthly Pumping Rates for Risk Assessment Drought Scenarios (m ³ /d)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Blair Road	1884	1728	1693	1521	1693	1901	1901	1763	1538	1711	1693	1693
Clemens Mill	7403	7621	7331	7403	7548	7331	7258	7185	7040	7040	6968	7040
Conestogo	227	224	202	214	257	315	318	310	265	237	222	234
Dunbar Road	0	0	0	0	0	0	0	0	0	0	0	0
Elgin Street	0	0	0	0	0	0	0	0	0	0	0	0
Erb Street	11007	10895	10895	11007	11232	11681	11681	11344	11457	11569	11232	10670
Greenbrook	8009	7932	7854	7309	7776	7465	6921	7232	7932	8243	8165	8554
Hespeler	2752	2147	2510	2722	2994	3326	3478	3326	3236	3538	3326	2964
Mannheim East	9072	8899	8726	8813	8813	8554	8554	8467	8381	8467	8467	8554
Mannheim Peaking	9789	9694	9029	9694	9694	9789	9124	9504	9599	8839	9599	9694
Mannheim West	9344	9253	8618	9253	9253	9344	8709	9072	9163	8437	9163	9253
Middleton Street	20321	21151	20943	20943	21565	22395	20736	20736	20321	19699	19492	20321
New Dundee	211	211	208	217	244	255	237	228	222	213	224	222
Parkway	8009	8320	8398	8476	8320	7620	7620	7387	6921	7543	8087	6687
Pinebush	8813	8639	8290	8639	8813	9250	9162	9162	8901	8290	8464	8202
Shades Mill	6774	6221	6636	7188	7119	7258	7741	7327	6843	7050	6981	5806
St. Agatha	0	0	0	0	0	0	0	0	0	0	0	0
Strange Street	4234	4173	3931	4717	6713	7500	7983	7741	7439	6955	5867	5262
Strasburg	2681	2626	2736	2847	2875	2709	2875	2902	2847	2819	2681	2598
Waterloo North	1685	1853	1153	1140	1024	1089	752	1607	1244	1179	1672	1140
West Montrose	0	0	0	0	0	0	0	0	0	0	0	0
Willard	2722	2696	2773	2618	2436	2722	2566	2125	2540	2618	2670	2618
William Street	4147	4018	3758	3888	3931	4752	4838	4666	4709	4493	4320	4277

APPENDIX E
PERMIT TO TAKE WATER DATA

Table E1: Permit to Take Water Data

Permit Number	Source Name	Major Category	Specific Purpose	Easting	Northing	PTTW Maximum Taking (m ³ /d)	Modelled Rate (m ³ /d)	Data Source for Modelled Rate
0018-77WNKV	Excavation Well Point Gallery	Commercial	Construction	536850	4813250	674	-	Construction; assumed temporary permit
00-P-2010	Dugout pond	Agricultural	Other - Agricultural	549405	4791483	218	-	Reported rate from the 2011 WTRS was applied for this permit.
00-P-2152	Pit	Dewatering	Construction	536295	4826824	655	655	Estimated from PTTW (using consumptive use factors)
00-P-2176	Wells # 1,4,6,7,8,	Remediation	Groundwater	555310	4799583	14	5	Reported rate from the 2008 WTRS were applied for this permit.
	Wells # 3,5 and 8	Remediation	Groundwater	555345	4799590	7	4	
00-P-2421	Well #20 (WWR 09425)	Water Supply	Communal	566308	4799042	163	11	Reported rate from the 2008 WTRS were applied for this permit.
	Well #21 (WWR 09426)	Water Supply	Communal	566227	4799075	163	11	
00-P-2437	Dugout pond	Commercial	Golf Course Irrigation	557428	4798325	546	21	Reported rate from the 2008 WTRS were applied for this permit.
	Well	Commercial	Golf Course Irrigation	557749	4797831	321	7	
00-P-2438	well	Water Supply	Water Supply	528456	4800028	144	144	Estimated from PTTW (using consumptive use factors)
	well	Water Supply	Water Supply	528560	4800075	118	118	
00-P-2681	One well (PW1)	Agricultural	Sod Farm	551316	4808472	818	232	Estimated from PTTW (using consumptive use factors)
00-P-2782	Well (WWR # 10911)	Water Supply	Campgrounds	559540	4807988	255	35	Estimated from PTTW (using consumptive use factors)
	Well (WWR # 2273)	Water Supply	Campgrounds	559451	4808040	255	35	
	Well (WWR # 6096)	Water Supply	Campgrounds	559838	4808018	255	35	
00-P-2786	Well (WWR# 6708916)	Commercial	Aquaculture	537491	4837967	10,145	-	Permits are located outside Region of Waterloo boundary and beyond the OGS layer extent. Pumping rates of 0 m ³ /d were applied without adverse impacts on Local Area Risk Assessment. [Total estimated/reported taking was 4,500 m ³ /d]
	Well (WWR# 6708917)	Commercial	Aquaculture	537484	4838121	10,145	-	
	Well (WWR# 6708976)	Commercial	Aquaculture	537461	4837989	10,145	-	
	Well (WWR# 6712883)	Commercial	Aquaculture	537435	4838042	10,145	-	
	Well (WWR# 6712884)	Commercial	Aquaculture	537499	4838084	10,145	-	
00-P-2791	Dugout pond	Commercial	Golf Course Irrigation	558358	4808902	600	-	Reported rate from the 2008 WTRS were applied for this permit.
	Well	Commercial	Golf Course Irrigation	558458	4808933	491	58	
0104-783FXW	Pond 1	Commercial	Golf Course Irrigation	551859	4824135	1,091	28	Reported rate from the 2008 WTRS were applied for this permit.
01-P-2068	one well (WWR#200558)	Industrial	Other - Industrial	529250	4827800	265	33	Estimated from PTTW (using consumptive use factors)
01-P-2103	One dugout pond	Agricultural	Other - Agricultural	542728	4818493	2,520	196	Estimated from PTTW (using consumptive use factors)
01-P-2140	Well#1(WWR#1305024)	Commercial	Aquaculture	556235	4792616	209	-	Rate not reported in 2008, 2009, or 2011 WTRS; used GRCA Surveyed estimate.
	Well#2 (WWR#1305144)	Commercial	Aquaculture	556259	4792611	262	-	
01-P-2148	B1	Water Supply	Communal	563705	4798651	81	15	Reported rate from the 2008 WTRS were applied for this permit.
	B2	Water Supply	Communal	563728	4798440	81	15	
	B3	Water Supply	Communal	563624	4798256	81	15	
	B5	Water Supply	Communal	563832	4798267	81	15	
	Well	Water Supply	Communal	536050	4817700	40	1	Estimated from PTTW (using consumptive use factors)
01-P-2265	well	Recreational	Other - Recreational	551467	4783891	164	-	Reported rate from the 2011 WTRS was applied for this permit.
0224-6T4JYV	Well #PW5	Remediation	Groundwater	536314	4826693	389	-	Estimated from PTTW (using consumptive factors); simulated in the model with permit 5361-6WNJAL
02-P-2002	Scalehouse Well	Industrial	Aggregate Washing	560055	4810875	122	0	Reported rate from the 2008 WTRS were applied for this permit.
	Washplant Well	Industrial	Aggregate Washing	559836	4811222	548	13	
02-P-2060	Well #1	Agricultural	Nursery	548754	4815632	164	23	Estimated from PTTW (using consumptive use factors)
02-P-2061	Well #1	Agricultural	Nursery	548769	4815586	164	23	Estimated from PTTW (using consumptive use factors)
02-P-2064	Drilled Well #1	Agricultural	Nursery	569356	4811814	273	39	Estimated from PTTW (using consumptive use factors)
0334-6ARJNR	Well PW1/89	Commercial	Golf Course Irrigation	557026	4804566	819	65	Reported rate from the 2008 WTRS were applied for this permit.
03-P-2004	Well	Industrial	Aggregate Washing	534860	4802900	72	-	Reported rate from the 2010 WTRS were applied for this permit.

Permit Number	Source Name	Major Category	Specific Purpose	Easting	Northing	PTTW Maximum Taking (m ³ /d)	Modelled Rate (m ³ /d)	Data Source for Modelled Rate
03-P-2047	Well	Industrial	Aggregate Washing	560391	4798971	524	-	Rate not reported in 2008, 2009, or 2011 WTRS; used GRCA Surveyed estimate.
03-P-2099	Well WS1	Water Supply	Campgrounds	548102	4806061	82	3	Rate not reported in 2008, 2009, or 2011 WTRS; estimated from PTTW (using consumptive use factors)
03-P-2245	Pond	Commercial	Golf Course Irrigation	548975	4805598	1,634	27	Reported rate from the 2008 WTRS were applied for this permit.
03-P-2373	Well 4	Industrial	Manufacturing	539324	4810745	3,925	-	Inactive permit; replaced by permit 6708-6FLNRH
	Well 5	Industrial	Manufacturing	539325	4810746	3,925	-	Inactive permit; replaced by permit 6708-6FLNRH
03-P-2379	One well	Commercial	Other - Commercial	566513	4799640	1,309	7	Reported rate from the 2008 WTRS were applied for this permit.
03-P-2384	Well PW3	Commercial	Golf Course Irrigation	548934	4801969	4,910	204	Reported rate from the 2010 WTRS were applied for this permit.
	Well PW4	Commercial	Golf Course Irrigation	548964	4801644	4,910	7	
	Well PW5	Commercial	Golf Course Irrigation	548940	4801662	4,910	162	
03-P-2388	Drilled Well #6509111	Agricultural	Nursery	528414	4809122	1,227	62	Rate not reported in 2008, 2009, or 2011 WTRS; estimated from PTTW (using consumptive use factors)
03-P-2408	Test Well 1	Agricultural	Sod Farm	552053	4812678	2,160	4	Reported rate from the 2008 WTRS were applied for this permit.
0507-74TRLE	Trenches	Commercial	Construction	544995	4824415	100	8	Estimated from PTTW (using consumptive use factors)
0646-6CCPMP	Dugout Pond	Agricultural	Field and Pasture Crops	532183	4809748	546	-	Reported rate from the 2008 WTRS were applied for this permit.
0654-78ZMBX	Well Points (50-100)	Commercial	Construction	539149	4810878	2,296	-	Construction; assumed temporary permit
0700-6YTS5P	Well # OW22-89	Remediation	Remediation	557183	4801047	72	14	Reported rate from the 2008 WTRS were applied for this permit.
	Well # PW5-97	Remediation	Remediation	557018	4801061	14	3	
	Well # PW6-02	Remediation	Remediation	557049	4801038	14	0	
0717-63RNYF	Gravel Pit Pond (Source Pond)	Industrial	Aggregate Washing	548622	4797390	3,750	98	Estimated from PTTW (using consumptive use factors)
1058-6Z5SN4	Remediation well PW4	Remediation	Remediation	536240	4826594	328	180	Reported rate from the 2008 WTRS were applied for this permit.
1060-6P8NNH	East RW-2	Remediation	Remediation	537701	4812271	72	45	Estimated from PTTW (using consumptive factors); Sunar wells (total applied rate of 90 m ³ /d for 2 sources)
	West RW-1	Remediation	Remediation	537670	4812254	72	45	
1115-6XHLUR	Well 1	Commercial	Aquaculture	537182	4794563	266	-	Permits are located outside Region of Waterloo boundary and beyond the OGS layer extent. Pumping rates of 0 m ³ /d were applied without adverse impacts on Local Area Risk Assessment. [Total estimated/reported taking was 532 m ³ /d]
	Well 2	Commercial	Aquaculture	537113	4795456	266	-	
	Well 3	Commercial	Aquaculture	537057	4794542	266	-	
	Well 4	Commercial	Aquaculture	537052	4794562	266	-	
	Well 6	Commercial	Aquaculture	537010	4794532	266	-	
1121-68DMJ4	well (MOE # 650-7997)	Commercial	Golf Course Irrigation	534859	4810217	185	16	Reported rate from the 2011 WTRS was applied for this permit.
1154-6G2P8D	Dugout Pond (Seiling Pond)	Industrial	Aggregate Washing	538431	4835897	3,000	-	Estimated from PTTW (using consumptive use factors)
1212-64CNJ5	Sand Pit Well #1	Industrial	Other - Industrial	534677	4793524	207	-	Rate not reported in 2008, 2009, or 2011 WTRS; used GRCA Surveyed estimate.
	Sand Pit Well #2	Industrial	Other - Industrial	534564	4793458	207	-	
1351-6D5LEK	Well TW1-89	Water Supply	Water Supply	549716	4817654	142	9	Permits are located outside Region of Waterloo boundary and beyond the OGS layer extent. Pumping rates of 0 m ³ /d were applied without adverse impacts on Local Area Risk Assessment. [Total estimated/reported taking was 8 m ³ /d]
1501-6FEJ2B	Breslau Pit Pond	Industrial	Other - Industrial	546376	4812882	8,729	-	Reported rate from the 2008 WTRS were applied for this permit.
1608-6GVQB9	Dugout Pond	Agricultural	Field and Pasture Crops	532183	4809748	1,717	16	Reported rate from the 2010 WTRS were applied for this permit.
1640-6P8R6J	ENE MW1	Remediation	Groundwater	540730	4811269	100	14	Reported rate from the 2008 WTRS were applied for this permit.
	MW10	Remediation	Groundwater	540680	4811303	100	14	
	MW14	Remediation	Groundwater	540719	4811320	100	14	
	MW45	Remediation	Groundwater	540718	4811262	100	14	
	MW47	Remediation	Groundwater	540723	4811239	100	14	
	MW47S	Remediation	Groundwater	540719	4811234	100	14	
	RW2	Remediation	Groundwater	540704	4811300	100	14	

Permit Number	Source Name	Major Category	Specific Purpose	Easting	Northing	PTTW Maximum Taking (m ³ /d)	Modelled Rate (m ³ /d)	Data Source for Modelled Rate
1743-6RGJA9	East Well WWR #1305776	Water Supply	Campgrounds	557585	4792061	50	-	Rate not reported in 2008, 2009, or 2011 WTRS; used GRCA Surveyed estimate.
	West Well WWR #1305775	Water Supply	Campgrounds	557585	4792061	50	-	
1843-6FYGT7	One Well	Commercial	Bottled Water	543958	4834940	1,637	-	Permit located outside Region of Waterloo boundary and beyond the OGS layer extent. Pumping rates of 0 m ³ /d were applied without adverse impacts on Risk Assessment. [Total estimated/reported taking was 7 m ³ /d]
2018-6DCR45	Well	Agricultural	Field and Pasture Crops	542256	4800883	164	19	Estimated from PTTW (using consumptive use factors)
2448-6FUKQ5	Mill Creek Pit	Industrial	Aggregate Washing	567290	4810630	8,183	373	Reported rate from the 2008 WTRS were applied for this permit.
2540-6PLKFX	PW1/00 (main-well)	Commercial	Golf Course Irrigation	553898	4812349	1,637	70	Reported rate from the 2011 WTRS was applied for this permit.
	PW1/88 (standby well)	Commercial	Golf Course Irrigation	553771	4812203	655	-	
2563-6VKR7T	One Bedrock Well (A037447)	Agricultural	Sod Farm	552019	4811557	1,718	3	Reported rate from the 2008 WTRS were applied for this permit.
2640-6CFH9G	Well	Water Supply	Campgrounds	535531	4803398	108	13	Estimated from PTTW (using consumptive use factors)
2688-7BRKDG	PW1	Remediation	Groundwater	557476	4801412	213	213	Estimated from PTTW (using consumptive use factors)
	PW2	Remediation	Groundwater	557425	4801474	115	115	
	PW3	Remediation	Groundwater	557408	4801531	38	38	
2718-6ZQQW3	Well A029228	Industrial	Aggregate Washing	534417	4807908	327	191	Estimated from PTTW (using consumptive use factors)
2768-6QXRCC	One Well #A017773	Industrial	Manufacturing	557427	4815114	79	79	Estimated from PTTW (using consumptive use factors)
2817-6W9P32	Supply Well	Industrial	Other - Industrial	549872	4801566	115	18	Reported rate from the 2008 WTRS were applied for this permit.
3166-6CKJFD	Lexington Service Centre Well	Water Supply	Other - Water Supply	538975	4814875	81	20	Reported rate from the 2008 WTRS were applied for this permit.
3234-74ER7S	McNally Pit Wash Pond	Industrial	Aggregate Washing	568280	4810400	23,568	719	Reported rate from the 2008 WTRS were applied for this permit.
3367-6Z5S4S	Remediation well 3 (W3)	Remediation	Other - Remediation	535399	4825774	1,962	490	Reported rate from the 2008 WTRS were applied for this permit.
3615-79ULJX	Irrigation Well (PW1)	Commercial	Other - Commercial	548334	4800724	764	57	Reported rate from the 2011 WTRS was applied for this permit.
3830-6W6JHW	Source Pond	Industrial	Aggregate Washing	569250	4811950	23,568	993	Reported rate from the 2008 WTRS were applied for this permit.
3878-6Z3JUJ	MH-1155	Dewatering	Dewatering	551100	4807800	49	63	Reported rate from the 2008 WTRS were applied for this permit.
	MH-1161	Dewatering	Dewatering	551300	4807300	117	14	
	MH-1164	Dewatering	Dewatering	551300	4807400	117	2	
	MH-1184	Dewatering	Dewatering	550900	4807800	117	3	
	MH-1809	Dewatering	Dewatering	551400	4807300	117	3	
	MH-1819	Dewatering	Dewatering	551100	4807800	13	63	
	MH-863	Dewatering	Dewatering	551000	4807300	49	0	
4084-7AXSP4	3 Wells	Water Supply	Communal	550012	4803179	1,800	-	Reported rate from the 2011 WTRS was applied for this permit.
4181-6DTKLX	Dugout Pond	Industrial	Aggregate Washing	522990	4799419	6,048	227	Reported rate from the 2008 WTRS were applied for this permit.
4345-6PVHWP	Well #1	Commercial	Commercial	535684	4794136	264	-	Permits are located outside Region of Waterloo boundary and beyond the OGS layer extent. Pumping rates of 0 m ³ /d were applied without adverse impacts on Risk Assessment. [Total estimated/reported taking was 62 m ³ /d]
	Well #2	Commercial	Commercial	535684	4794136	264	-	
	Well #3	Commercial	Commercial	535714	4794134	318	-	
	Well #4	Commercial	Commercial	535714	4794134	318	-	
4475-67MPTB	Well #6503362	Industrial	Aggregate Washing	530453	4822212	1,377	-	Rate not reported in 2008, 2009, or 2011 WTRS; used GRCA Surveyed estimate.
4484-6FKLMP	Main Well (WWR 5000997 & 5001003)	Industrial	Cooling Water	513195	4824105	328	-	Permits are located outside Region of Waterloo boundary and beyond the OGS layer extent. Pumping rates of 0 m ³ /d were applied without adverse impacts on Risk Assessment. [Total estimated/reported taking was 23 m ³ /d]
	Secondary well (WWR 5000998)	Industrial	Cooling Water	513202	4824177	163	-	
4845-6E8HA5	PW-1	Industrial	Food Processing	549235	4813543	550	29	Reported rate from the 2008 WTRS were applied for this permit.
	PW-2	Industrial	Food Processing	549159	4813543	550	19	
	PW-3	Industrial	Food Processing	549103	4813513	550	217	
5156-6ZAHPM	Remediation Well W5A	Remediation	Other - Remediation	536181	4826521	1,310	-	Reported rate from the 2008 WTRS were applied for this permit.
	Remediation Well W5B	Remediation	Other - Remediation	536181	4826521	1,310	81	

Permit Number	Source Name	Major Category	Specific Purpose	Easting	Northing	PTTW Maximum Taking (m ³ /d)	Modelled Rate (m ³ /d)	Data Source for Modelled Rate
5201-6B7HDA	Well A - Office	Industrial	Other - Industrial	567598	4812203	115	1	Reported rate from the 2008 WTRS were applied for this permit.
	Well B - Asphalt Plant	Industrial	Other - Industrial	567476	4812030	516	12	
	Well C - Concrete Plant	Industrial	Other - Industrial	567608	4811999	802	12	
5272-6BVJJM	Parkview Well	Agricultural	Other - Agricultural	540793	4814806	150	1	Reported rate from the 2008 WTRS were applied for this permit.
5361-6WNJAL	TW1/05	Commercial	Golf Course Irrigation	536314	4826693	329	181	Estimated from PTTW (using consumptive use factors)
5546-5ZSJ5M	Pond 2. Lot 17	Agricultural	Tobacco	533443	4787033	2,455	-	Permits are located outside Region of Waterloo boundary and beyond the OGS layer extent. Pumping rates of 0 m ³ /d were applied without adverse impacts on Risk Assessment. [Total estimated/reported taking was 10 m ³ /d]
5557-6BUKDB	Bowman Pit Pond	Industrial	Aggregate Washing	542434	4833490	3,000	-	Permits are located outside Region of Waterloo boundary and beyond the OGS layer extent. Pumping rates of 0 m ³ /d were applied without adverse impacts on Risk Assessment. [Total estimated/reported taking was 142 m ³ /d]
6003-64WPKP	7 Wells	Remediation	Other - Remediation	534950	4809129	4,824	-	Erb St Landfill purge wells within landfill containment area (not simulated in model; part of pump and treat system)
6031-7CVQ3X	Ground Water	Dewatering	Other - Dewatering	555875	4809552	320	26	Estimated from PTTW (using consumptive use factors)
6053-642QD4	Well 2 MOE WWR 65-04625	Recreational	Other - Recreational	544432	4813789	1,015	-	Rate not reported in 2008, 2009, or 2011 WTRS; used GRCA Surveyed estimate.
	Well 1 MOE WWR 65-05508	Recreational	Other - Recreational	544431	4813788	1,015	-	
	Well 3 MOE WWR 65-04624	Recreational	Other - Recreational	544433	4813790	1,015	-	
6064-756QHD	Garage well	Industrial	Aggregate Washing	551093	4800879	1	-	Reported rate from the 2008 WTRS were applied for this permit.
	Ready Mix plant well	Industrial	Aggregate Washing	551093	4800879	200	39	
6066-6VXQU2	Maintenance Well	Water Supply	Other - Water Supply	561196	4803854	34	-	Reported rate from the 2011 WTRS was applied for this permit.
	Clubhouse Well	Water Supply	Other - Water Supply	561060	4803785	50	1	
	Well PW1/2005	Commercial	Golf Course Irrigation	561189	4803847	1,965	22	
6106-7AJRGY	Well 1	Industrial	Manufacturing	538333	4817271	98	-	Reported rate from the 2008 WTRS were applied for this permit.
	Well 1	Commercial	Bottled Water	538333	4817271	272	-	
	Well 2	Commercial	Bottled Water	538333	4817271	151	-	
	Well 2	Industrial	Manufacturing	538333	4817271	65	211	
6178-6Z5SVE	Remediation Well 4 (W4)	Remediation	Other - Remediation	535656	4826289	1,962	272	Reported rate from the 2008 WTRS were applied for this permit.
6268-6QJLB3	Breslau Pit Extraction Pond	Industrial	Other - Industrial	547580	4811942	5,942	488	Reported rate from permit holder; consumptive use rates applied.
6512-6WGW8	Well Scale House	Industrial	Aggregate Washing	547590	4798226	3	0	Reported rate from the 2008 WTRS were applied for this permit.
6560-6DYPGH	Well WSW 2	Industrial	Manufacturing	569847	4811446	200	94	Reported rate from the 2011 WTRS was applied for this permit.
6634-6ZAHEZ	LNAPL SUMP	Remediation	Remediation	536292	4826881	27	-	Reported rate from the 2008 WTRS were applied for this permit.
	U+460	Remediation	Remediation	536315	4826995	17	5	
	U+460T	Remediation	Remediation	536326	4826996	27	3	
	U+500	Remediation	Remediation	536337	4826964	27	11	
	U+540	Remediation	Remediation	536342	4826918	17	0	
	U+560	Remediation	Remediation	536351	4826901	27	5	
	U+605	Remediation	Remediation	536350	4826851	33	-	
	U+630	Remediation	Remediation	536343	4826829	49	-	
	U+655	Remediation	Remediation	536325	4826791	17	5	
	U+685	Remediation	Remediation	536315	4826763	22	8	
	U+710	Remediation	Remediation	536324	4826744	104	25	
U+735	Remediation	Remediation	536312	4826727	33	11		
6661-65YPPD	Cambridge Landfill Well #CL-PW2	Remediation	Other - Remediation	558706	4801766	980	731	Reported rate from the 2011 WTRS was applied for this permit.
6708-6FLNRH	Well # 4	Industrial	Cooling Water	539490	4810810	4,256	1,520	Reported rate from the 2008 WTRS were applied for this permit.
	Well # 5	Industrial	Cooling Water	539175	4810390	5,238	1,004	

Permit Number	Source Name	Major Category	Specific Purpose	Easting	Northing	PTTW Maximum Taking (m ³ /d)	Modelled Rate (m ³ /d)	Data Source for Modelled Rate
6826-7AHHRN	Well A045100	Industrial	Cooling Water	525205	4804343	420	118	Rate not reported in 2008, 2009, or 2011 WTRS; estimated from PTTW (using consumptive use factors)
6877-6EWLNM	Well 2 - TPW (MOE 65-5858)	Commercial	Golf Course Irrigation	531366	4806544	2,619	147	Estimated from PTTW (using consumptive use factors)
	Well 4	Commercial	Golf Course Irrigation	531366	4806475	47	16	
69-P-0241	Well (1)	Water Supply	Communal	547680	4813810	818	-	Communal permit for Breslau inactive (discussions with ROW)
71-P-0362	North Wilmot Public School Well	Institutional	Schools	526367	4808466	66	55	Estimated from PTTW (using consumptive use factors)
72-P-0432	Wells	Industrial	Other - Industrial	537467	4816423	1,637	1,637	Estimated from PTTW (using consumptive use factors)
7316-6GAJ3X	PW1 (WWR# 6507215)	Industrial	Manufacturing	547976	4800065	89	-	Reported rate from the 2008 WTRS were applied for this permit.
	PW2 (WWR# 6504236)	Industrial	Manufacturing	547738	4799810	150	-	
7338-6ZPRBC	Well - 2 (#A038272)	Commercial	Other - Commercial	545986	4798456	38	4	Reported rate from the 2008 WTRS were applied for this permit.
	Well -1 (#A038238)	Commercial	Other - Commercial	545928	4798234	18	2	
73-P-0546	Well MOE W.W.R. # 6503959	Water Supply	Communal	522504	4805921	131	2	Reported rate from the 2008 WTRS were applied for this permit.
7403-6HCMGT	Dugout Pond	Recreational	Fish Ponds	563572	4802239	654	1	Estimated from PTTW (using consumptive use factors)
	Dugout Pond	Recreational	Fish Ponds	563566	4802151	654	1	
	Dugout Pond	Recreational	Fish Ponds	563569	4802197	654	1	
74-P-2065	Well #1	Commercial	Commercial	566329	4798568	159	-	Estimated from PTTW (using consumptive use factors; maximum of 4 hours/day of pumping)
	Well #12	Commercial	Commercial	566615	4800491	159	12	
	Well #16	Commercial	Commercial	566267	4799226	159	8	
	Well #18	Commercial	Commercial	567068	4798709	159	-	
	Well #19	Commercial	Commercial	566663	4800168	159	-	
	Well #22	Commercial	Commercial	566391	4798791	159	7	
	Well #25	Commercial	Commercial	566406	4798945	159	-	
	Well #27	Commercial	Commercial	567448	4799583	159	-	
	Well #28	Commercial	Commercial	566183	4799256	159	7	
	Well #3	Commercial	Commercial	566663	4799588	159	-	
	Well #33	Commercial	Commercial	566918	4798887	159	-	
	Well #5	Commercial	Commercial	566282	4798695	159	7	
7522-6ZAHY6	Remediation Well PW3	Remediation	Remediation	536418	4826594	230	-	Reported rate from the 2008 WTRS were applied for this permit.
	Remediation Well PW1	Remediation	Remediation	536205	4827249	426	-	Reported rate from the 2011 WTRS was applied for this permit.
7642-6EVGTY	Bedrock Well PW2	Commercial	Golf Course Irrigation	534025	4828530	2,815	0	Rate not reported in 2008, 2009, or 2011 WTRS; used GRCA Surveyed estimate.
	Dugout Pond	Commercial	Golf Course Irrigation	534032	4828556	2,815	26	Reported rate from the 2008 WTRS were applied for this permit.
7655-6UJPPU	Well #1 Lot 33	Industrial	Manufacturing	543788	4797428	47	-	Reported rate from the 2008 WTRS were applied for this permit.
	Well #2 Lot 34	Industrial	Manufacturing	543683	4797421	81	-	
7710-6DTL4T	Dugout	Industrial	Aggregate Washing	552507	4799223	6,048	-	Reported rate from the 2010 WTRS were applied for this permit.
7724-73VQCX	Well SW1	Industrial	Other - Industrial	551270	4799187	523	-	Reported rate from the 2010 WTRS were applied for this permit.
	Well SW2	Industrial	Other - Industrial	551402	4799113	656	-	
8075-6DTJY6	Pond	Industrial	Aggregate Washing	545384	4794988	6,048	-	Rate not reported in 2008, 2009, or 2011 WTRS; used GRCA Surveyed estimate.
81-P-2018	Well 1	Industrial	Other - Industrial	517813	4813877	105	-	Reported rate from the 2011 WTRS was applied for this permit.
	Well 2	Industrial	Other - Industrial	517855	4813854	105	2	
8632-6DUKUA	Well	Commercial	Golf Course Irrigation	535805	4802225	82	0	Reported rate from the 2008 WTRS were applied for this permit.
8688-5Q8K76	Pond	Agricultural	Fruit Orchards	529295	4788576	654	-	Permits are located outside Region of Waterloo boundary and beyond the OGS layer extent. Pumping rates of 0 m ³ /d were applied without adverse impacts on Risk Assessment. [Total estimated/reported taking was 17 m ³ /d]

Permit Number	Source Name	Major Category	Specific Purpose	Easting	Northing	PTTW Maximum Taking (m ³ /d)	Modelled Rate (m ³ /d)	Data Source for Modelled Rate
8708-6LLS2Z	Well #1 (WWR# 6508121)	Commercial	Golf Course Irrigation	549441	4817845	909	298	Estimated from PTTW (using consumptive use factors)
	Well TW 2003-1	Commercial	Golf Course Irrigation	549354	4817908	909	-	Reported rate from the 2011 WTRS was applied for this permit.
87-P-2009	Well	Industrial	Cooling Water	545076	4806748	1,634	-	Reported rate from the 2008 WTRS were applied for this permit.
	Well	Industrial	Cooling Water	545061	4806746	1,634	-	
	Well	Industrial	Cooling Water	545076	4806746	1,634	-	
87-P-2026	Well MOE #3047	Industrial	Other - Industrial	530535	4822038	68	-	Reported rate from the 2008 WTRS were applied for this permit.
87-P-2048	Well	Industrial	Other - Industrial	530453	4822212	136	38	Reported rate from the 2008 WTRS were applied for this permit.
88-P-2029	Well #26 (MOE WWR 6811376)	Water Supply	Water Supply	566601	4800523	545	-	Reported rate from the 2008 WTRS were applied for this permit.
88-P-2070	Well #1	Commercial	Aquaculture	559242	4792452	65	-	Reported rate from the 2008 WTRS were applied for this permit.
	Well #2	Commercial	Aquaculture	559246	4792542	327	-	Reported rate from the 2008 WTRS were applied for this permit.
89-P-2059	Well	Water Supply	Water Supply	553216	4785322	648	-	Permit expired in 2009; assumed inactive
	Well	Water Supply	Water Supply	553036	4785502	648	-	
90-P-2013	Wells(1-89)	Industrial	Food Processing	540359	4816066	737	21	Estimated from PTTW (using consumptive use factors)
	Wells(2-89)	Industrial	Food Processing	540346	4816059	737	1,613	
97-P-2001	Well	Water Supply	Communal	536853	4817847	460	460	Estimated from PTTW (using consumptive use factors)
	Well	Water Supply	Communal	536861	4817909	460	-	Reported rate from the 2011 WTRS was applied for this permit.
98-P-2030	Well #30(MOE WWR #184432)	Water Supply	Communal	566791	4799552	1,309	-	Reported rate from the 2008 WTRS were applied for this permit.
98-P-2039	Well	Institutional	Other - Institutional	540818	4808768	164	67	Estimated from PTTW (using consumptive use factors)
99-P-1097	Dugout pond	Agricultural	Tobacco	529736	4786634	1,364	-	Permit expired in 2009; assumed inactive
99-P-1239	Pond	Industrial	Aggregate Washing	538732	4794629	4,910	-	Reported rate from the 2010 WTRS were applied for this permit.
99-P-2012	Well SK3	Industrial	Other - Industrial	547889	4812595	33	33	Estimated from PTTW (using consumptive use factors)
	Well SK4	Industrial	Other - Industrial	547993	4812609	33	33	
	Well SK5	Industrial	Other - Industrial	547882	4812614	410	410	
	Wells SK1	Industrial	Other - Industrial	547973	4812619	33	33	
99-P-2061	Well PW1 (North Well)	Commercial	Aquaculture	540648	4827761	655	655	Estimated from PTTW (using consumptive use factors)
	Well PW2 (South Well)	Commercial	Aquaculture	540639	4827757	1,637	1,637	
99-P-2132	Well (1)	Commercial	Aquaculture	569100	4806163	1,637	1,637	Estimated from PTTW (using consumptive use factors)