EPA Region 5 Records Ctr.
393354

REILLY TAR & CHEMICAL CORPORATION

TELEPHONE 317/638-7531
CABLE: RETAR INDIANAPOLIS
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1510 MARKET SQUARE CENTER
151 NORTH DELAWARE STREET
INDIANAPOLIS, INDIANA 46204

September 2, 1983

RECEIVED
SEP - 6 1983
E.P.A. — D.L.P.C.
STATE OF ILLINOIS

Illinois EPA
Attn: Cheryl Putting
Division of Land Pollution Control
2200 Churchill Road
Springfield, Illinois 62706

Re: Madison County
Site 11904006

Dear Cheryl Putting:

Attached is the four quarter report on monitoring wells at our Granite City plant.

Per your instructions the analyses are reported in our format, since the necessary reporting forms have not yet been received from your division.

Very truly yours,

REILLY TAR & CHEMICAL CORPORATION

W. A. Justin

W. A. Justin
Director Environmental Control

WAJ/bk

cc: Mr. L. L. Pirtle
Mr. D. Trieff
Mr. W. R. Roder

GRANITE CITY WELL #1 ILLINOIS DESIGNATION G101

DATE		10-04-82	01-04-83	04-05-83	07-05-83	ARITHEMIC MEAN	DRINKING STANDARDS	MAXIMUM	MINIMUM	VARIANCE	95% STAND DEVIA
ARSENIC	MG/L	.003	.003	.004	.003	.0033	.05	.004	.003	0	.001
BARIUM	MG/L	.14	.12	.11	.06	.1075	1	.14	.06	.0012	.0681
CADMIUM	MG/L	.006	.004	.006	0	.004	.01	.006	0	0	.0057
CHROMIUM	MG/L	0	.006	.012	.006	.006	.05	.012	0	0	.0098
LEAD	MG/L	0	.03	0	0	.0075	.05	.03	0	.0002	.03
MERCURY	MG/L	0	0	.0007	0	.0002	.002	.0007	0	0	.0007
SELENIUM	MG/L	0	0	0	0	0	.01	0	0	0	0
SILVER	MG/L	0	0	0	.003	.0008	.05	.003	0	0	.003
IRON	MG/L	.18	.03	0	.02	.0575		.18	0	.0068	.1652
MANGANESE	MG/L	.442	.389	.005	.115	.2378		.442	.005	.0446	.4224
SODIUM	MG/L	18.4	24.9	17.1	19.2	19.9		24.9	17.1	11.86	6.8877
FLUORIDE	MG/L	1	.6	.7	.8	.775	1.4 - 2.4	1	.6	.0292	.3416
NITROGEN, NITRATE	MG/L	0	.13	1.64	.04	.4525	10	1.64	0	.6297	1.5871
CHLORIDE	MG/L	6	22	10	30	17		30	6	121.3333	22.0303
PHENOL	MG/L	.005	0	.009	.009	.0058		.009	0	0	.0085
SULFATE	MG/L	87	178	213	187	166.25		213	87	3011.5833	109.7558
ENDRIN	UG/L	0	0	0	0	0	.2	0	0	0	0
LINDANE	UG/L	0	0	0	0	0	4	0	0	0	0
METHOXYCHLOR	UG/L	0	0	0	0	0	100	0	0	0	0
TOXAPHENE	UG/L	0	0	0	0	0	5	0	0	0	0
2,4-D	UG/L	0	0	0	0	0	100	0	0	0	0
2,4,5-TP SILVEX	UG/L	0	0	0	0	0	10	0	0	0	0
TOTAL RADIUM	PCI/L	0	0	5.6	0	1.4	5	5.6	0	7.84	5.6
GROSS ALPHA	PCI/L	12.3	22.8	6.9	2.5	11.125	15	22.8	2.5	76.6425	17.5091
GROSS BETA	PCI/L	0	42.6	7.1	14.4	16.025	4MIL/YR	42.6	0	348.4425	37.3332
COLIFORM, TOTAL (MF)	/100ML	TNTC	30	0	0	10	1	30	0	225	30
CONDUCTIVITY (A)	UMHOS	620	830	790	820						
(B)	UMHOS	630	840	790	830						
(C)	UMHOS	630	820	800	820						
(D)	UMHOS	640	830	790	830						
CONDUCTIVITY AV.	UMHOS	630	830	792.5	825	769.375		830	630	8909.8958	188.7845
TOC (A)	MG/L	4.3	3	5.3	4.9						
(B)	MG/L	4.4	3	5.3	4.8						
(C)	MG/L	4.6	3.1	5.3	4.9						
(D)	MG/L	4.5	3	5.4	4.9						
TOC AV.	MG/L	4.45	3.025	5.325	4.875	4.4188		5.325	3.025	.991	1.991
PH (A)	UNITS	6.89	6.8	7.82	7.38						
(B)	UNITS	6.90	6.81	7.81	7.39						
(C)	UNITS	6.91	6.81	7.82	7.39						
(D)	UNITS	6.90	6.8	7.83	7.39						
PH AV.	UNITS	6.90	6.805	7.82	7.3875	7.2281		7.82	6.805	.2208	.9398
TOX (A)	MG/L-CL	.03	.01	.149	.227						
(B)	MG/L-CL	.036	.01	.154	.227						
(C)	MG/L-CL	.038	.014	.157	.222						
(D)	MG/L-CL	.029	.012	.161	.25						
TOX AV.	MG/L-CL	.03325	.0115	.15525	.2315	.1079		.2315	.0115	.0108	.2078
WATER LEVEL	FEET	403.16	410.12	409.85	407.07	407.55		410.12	403.16	10.4658	6.4702
TEMPERATURE	DEG. C	19.3	12.9	11.2	17.2	15.15		19.3	11.2	14.03	7.4913

VALUES OF 0 INDICATE RESULTS BELOW DETECTION LIMITS 2 X STANDARD DEVIATION = 95%

GRANITE CITY WELL #2 ILLINOIS DESIGNATION G102

DATE		10-04-82	01-04-83	04-05-83	07-05-83	ARITHMETIC MEAN	DRINKING STANDARDS	MAXIMUM	MINIMUM	VARIANCE	95% STAND DEVIA
ARSENIC	MG/L	.24	.018	.06	.08	.0995	.05	.24	.018	.0094	.1943
BARIUM	MG/L	.86	.22	.16	.33	.3925	1	.86	.16	.1021	.639
CADMIUM	MG/L	.009	.005	.006	0	.005	.01	.009	0	0	.0075
CHROMIUM	MG/L	.007	.01	.01	.004	.0078	.05	.01	.004	0	.0057
LEAD	MG/L	0	.02	0	0	.005	.05	.02	0	.0001	.02
MERCURY	MG/L	0	0	.0005	0	.0001	.002	.0005	0	0	.0005
SELENIUM	MG/L	0	0	0	0	0	.01	0	0	0	0
SILVER	MG/L	0	.002	0	0	.0005	.05	.002	0	0	.002
IRON	MG/L	55	.18	.55	2.3	14.5075		55	.18	729.5849	54.0217
MANGANESE	MG/L	15.3	10.2	5.49	4.46	8.8625		15.3	4.46	24.662	9.9322
SODIUM	MG/L	146	86.8	59.5	55.1	86.85		146	55.1	1751.6033	83.7043
FLUORIDE	MG/L	.6	.1	.3	.4	.35	1.4 - 2.4	.6	.1	.0433	.4163
NITROGEN, NITRATE	MG/L	0	6.71	5.73	1.74	3.545	10	6.71	0	10.2055	6.3892
CHLORIDE	MG/L	210	163	108	130	152.75		210	108	1967.5833	88.7149
PHENOL	MG/L	17.4	8.53	10.3	11.2	11.8575		17.4	8.53	14.8832	7.7158
SULFATE	MG/L	0	203	97	35	83.75		203	0	7928.9167	178.0889
ENDRIN	UG/L	0	0	0	0	0	.2	0	0	0	0
LINDANE	UG/L	0	0	.501	0	.1253	4	.501	0	.0628	.501
METHOXYCHLOR	UG/L	0	0	0	0	0	100	0	0	0	0
TOXAPHENE	UG/L	0	0	0	0	0	5	0	0	0	0
2,4-D	UG/L	0	0	0	0	0	100	0	0	0	0
2,4,5-TP SILVEX	UG/L	0	0	0	0	0	10	0	0	0	0
TOTAL RADIUM	PCI/L	0	0	0	0	0	5	0	0	0	0
GROSS ALPHA	PCI/L	0	5.1	5.2	0	2.575	15	5.2	0	8.8425	5.9473
GROSS BETA	PCI/L	0	19.4	6.8	22.2	12.1	4MIL/YR	22.2	0	109.9333	20.9698
COLIFORM, TOTAL (MF)	/100ML	TNTC	10	0	18	9.3333	1	18	0	76	17.4356
CONDUCTIVITY (A)	UMHOS	2270	1610	1080	1110						
(B)	UMHOS	2280	1620	1090	1120						
(C)	UMHOS	2280	1610	1100	1120						
(D)	UMHOS	2290	1630	1090	1120						
CONDUCTIVITY AV.	UMHOS	2280	1617.5	1090	1117.5	1526.25		2280	1090	311285.4167	1115.8592
TOC (A)	MG/L	169	75.1	72.1	28.5						
(B)	MG/L	166	73.1	72.5	29.3						
(C)	MG/L	168	73.6	72.7	28.9						
(D)	MG/L	167	74.3	72.1	28.7						
TOC AV.	MG/L	167.5	74.025	72.35	28.85	85.6813		167.5	28.85	3412.5631	116.8343
PH (A)	UNITS	6.77	6.37	7.42	6.94						
(B)	UNITS	6.78	6.37	7.41	6.95						
(C)	UNITS	6.77	6.37	7.42	6.95						
(D)	UNITS	6.77	6.36	7.42	6.94						
PH AV.	UNITS	6.77	6.3675	7.4175	6.945	6.8756		7.4175	6.3675	.1891	.8697
TOX (A)	MG/L-CL	.05	.031	.583	.305						
(B)	MG/L-CL	.058	.026	.59	.29						
(C)	MG/L-CL	.049	.034	.601	.274						
(D)	MG/L-CL	.046	.027	.6	.31						
TOX AV.	MG/L-CL	.05075	.0295	.5935	.29475	.2421		.5935	.0295	.0694	.5267
WATER LEVEL	FEET	403.53	406.36	406.85	406.05	405.6975		406.85	403.53	2.1965	2.9641
TEMPERATURE	DEG. C	18.6	12.5	11.4	16	14.625		18.6	11.4	10.8692	6.5937

VALUES OF 0 INDICATE RESULTS BELOW DETECTION LIMITS 2 X STANDARD DEVIATION = 95%

GRANITE CITY WELL #6 ILLINOIS DESIGNATION G106

DATE		10-04-82	01-04-83	04-05-83	07-05-83	ARITHMETIC MEAN	DRINKING STANDARDS	MAXIMUM	MINIMUM	VARIANCE	95% STAND DEVIA
ARSENIC	MG/L	.03	.02	.05	.04	.035	.05	.05	.02	.0002	.0258
BARIUM	MG/L	.28	.14	.16	.17	.1875	1	.28	.14	.004	.1258
CADMIUM	MG/L	.009	.005	.004	0	.0045	.01	.009	0	0	.0074
CHROMIUM	MG/L	.005	.009	.011	.013	.0095	.05	.013	.005	0	.0068
LEAD	MG/L	0	.04	0	0	.01	.05	.04	0	.0004	.04
MERCURY	MG/L	0	.0002	0	0	.0001	.002	.0002	0	0	.0002
SELENIUM	MG/L	0	0	0	0	0	.01	0	0	0	0
SILVER	MG/L	0	.003	0	.003	.0015	.05	.003	0	0	.0035
IRON	MG/L	1.58	.07	.88	.1	.6575		1.58	.07	.5188	1.4406
MANGANESE	MG/L	5.11	4.91	3.2	6.19	4.8525		6.19	3.2	1.5298	2.4737
SODIUM	MG/L	171	205	115	134	156.25		205	115	1596.9167	79.9229
FLUORIDE	MG/L	1.1	.7	.8	.9	.875	1.4-2.4	1.1	.7	.0292	.3416
NITROGEN, NITRATE	MG/L	.23	.2	0	.26	.1725	10	.26	0	.0138	.2352
CHLORIDE	MG/L	220	204	146	230	200		230	146	1410.6667	75.1177
PHENOL	MG/L	.949	21	19	16.2	14.2873		21	.949	82.9462	18.215
SULFATE	MG/L	17	229	148	58	113		229	17	8974	189.4624
ENDRIN	UG/L	0	0	0	0	0	.2	0	0	0	0
LINDANE	UG/L	0	0	0	0	0	4	0	0	0	0
METHOXYCHLOR	UG/L	0	0	0	0	0	100	0	0	0	0
TOXAPHENE	UG/L	0	0	0	0	0	5	0	0	0	0
2,4-D	UG/L	0	0	0	0	0	100	0	0	0	0
2,4,5-TP SILVEX	UG/L	0	0	0	0	0	10	0	0	0	0
TOTAL RADIUM	PCI/L	0	0	0	0	0	5	0	0	0	0
GROSS ALPHA	PCI/L	0	5.4	0	0	1.35	15	5.4	0	7.29	5.4
GROSS BETA	PCI/L	0	9.7	0	8.6	4.575	4MIL/YR	9.7	0	28.1092	10.6036
COLIFORM, TOTAL (MF)	/100ML	TNTC	0	0	1200	400	1	1200	0	360000	1200
CONDUCTIVITY (A)	UMHOS	2000	1580	1510	1730						
(B)	UMHOS	2010	1590	1510	1740						
(C)	UMHOS	2020	1570	1500	1730						
(D)	UMHOS	2020	1570	1500	1740						
CONDUCTIVITY AV.	UMHOS	2012.5	1577.5	1505	1735	1707.5		2012.5	1505	50562.5	449.7221
TOC (A)	MG/L	55.7	64.6	69.5	91.1						
(B)	MG/L	54.7	63.4	70.8	91.2						
(C)	MG/L	56.7	62.7	70	91.4						
(D)	MG/L	56	62.6	70.2	91.1						
TOC AV.	MG/L	55.775	63.325	70.125	91.2	70.1063		91.2	55.775	232.1056	30.47
PH (A)	UNITS	6.91	6.66	7.68	7.18						
(B)	UNITS	6.92	6.67	7.69	7.18						
(C)	UNITS	6.91	6.65	7.67	7.18						
(D)	UNITS	6.92	6.67	7.68	7.17						
PH AV.	UNITS	6.92	6.6625	7.68	7.1775	7.1088		7.68	6.6625	.1892	.87
TOX (A)	MG/L-CL	.085	.026	.065	.278						
(B)	MG/L-CL	.083	.025	.068	.242						
(C)	MG/L-CL	.08	.029	.067	.223						
(D)	MG/L-CL	.09	.025	.07	.275						
TOX AV.	MG/L-CL	.0845	.02625	.0675	.2545	.1082		.2545	.02625	.0101	.2011
WATER LEVEL	FEET	403.37	407.18	408.01	406.88	406.36		408.01	403.37	4.2018	4.0997
TEMPERATURE	DEG. C	17.9	14.5	13.4	16.2	15.5		17.9	13.4	3.8867	3.9429

VALUES OF 0 INDICATE RESULTS BELOW DETECTION LIMITS 2 X STANDARD DEVIATIONN = 95%

GRANITE CITY WELL #7 ILLINOIS DESIGNATION G107

DATE		10-04-82	01-04-83	04-05-83	07-05-83	ARITHMETIC MEAN	DRINKING STANDARDS	MAXIMUM	MINIMUM	VARIANCE	95% STAND DEVIA
ARSENIC	MG/L	.04	.021	.26	.13	.1128	.05	.26	.021	.0119	.2181
BARIUM	MG/L	.24	.14	.4	.28	.265	1	.4	.14	.0116	.2151
CADMIUM	MG/L	.009	.007	.006	.004	.0065	.01	.009	.004	0	.0042
CHROMIUM	MG/L	.007	.015	.011	.014	.0118	.05	.015	.007	0	.0072
LEAD	MG/L	0	.04	0	.03	.0175	.05	.04	0	.0004	.0412
MERCURY	MG/L	0	.001	.0002	0	.0003	.002	.001	0	0	.001
SELENIUM	MG/L	0	0	.001	.001	.0005	.01	.001	0	0	.0012
SILVER	MG/L	0	.004	.005	.006	.0038	.05	.006	0	0	.0053
IRON	MG/L	29	11	68	50	39.5		68	11	615	49.5984
MANGANESE	MG/L	17.6	15.6	17.1	13.8	16.025		17.6	13.8	2.9225	3.4191
SODIUM	MG/L	419	432	417	387	413.75		432	387	362.25	38.0657
FLUORIDE	MG/L	.1	1	.5	.5	.525	1.4 - 2.4	1	.1	.1358	.7371
NITROGEN, NITRATE	MG/L	0	.41	.4	.28	.2725	10	.41	0	.0365	.3821
CHLORIDE	MG/L	363	432	510	660	491.25		660	363	16262.25	255.0471
PHENOL	MG/L	18.3	16.4	12.9	12.8	15.1		18.3	12.8	7.3533	5.4234
SULFATE	MG/L	112	212	128	114	141.5		212	112	2259.6667	95.0719
ENDRIN	UG/L	0	0	0	0	0	.2	0	0	0	0
LINDANE	UG/L	0	0	0	0	0	4	0	0	0	0
METHOXYCHLOR	UG/L	0	0	0	0	0	100	0	0	0	0
TOXAPHENE	UG/L	0	0	0	0	0	5	0	0	0	0
2,4-D	UG/L	0	0	0	0	0	100	0	0	0	0
2,4,5-TP SILVEX	UG/L	0	0	0	0	0	10	0	0	0	0
TOTAL RADIUM	PCI/L	0	.4	0	0	.1	5	.4	0	.04	.4
GROSS ALPHA	PCI/L	0	16.4	0	11.6	7	15	16.4	0	69.1733	16.6341
GROSS BETA	PCI/L	0	42	0	9.3	12.825	4MIL/YR	42	0	397.5225	39.8759
COLIFORM, TOTAL (MF)	/100ML	0	10	0	0	2.5	1	10	0	25	10
CONDUCTIVITY (A)	UMHOS	2250	2650	2760	2660						
(B)	UMHOS	2560	2670	2770	2670						
(C)	UMHOS	2570	2660	2770	2670						
(D)	UMHOS	2570	2660	2760	2660						
CONDUCTIVITY AV.	UMHOS	2487.5	2660	2765	2665	2644.375		2765	2487.5	13276.5625	230.4479
TOC (A)	MG/L	135	132	159	110						
(B)	MG/L	134	130	159	107						
(C)	MG/L	137	130	161	103						
(D)	MG/L	135	130	160	109						
TOC AV.	MG/L	135.25	130.5	159.75	107.25	133.1875		159.75	107.25	463.2656	43.0472
PH (A)	UNITS	6.62	6.47	7.01	6.85						
(B)	UNITS	6.64	6.47	7.02	6.86						
(C)	UNITS	6.64	6.48	7.01	6.85						
(D)	UNITS	6.63	6.48	7.01	6.85						
PH AV.	UNITS	6.63	6.475	7.0125	6.8525	6.7431		7.0125	6.475	.0562	.4742
TOX (A)	MG/L-CL	7.42	3.2	3.1	1.036						
(B)	MG/L-CL	7.91	3.2	3.5	1.954						
(C)	MG/L-CL	7.88	3.2	3.5	2.1						
(D)	MG/L-CL	7.32	3.5	3.4	2.058						
TOX AV.	MG/L-CL	7.6325	3.275	3.375	1.787	4.0174		7.6325	1.787	6.3358	5.0342
WATER LEVEL	FEET	403.09	406.28	406.03	405.39	405.1975		406.28	403.09	2.1145	2.9083
TEMPERATURE	DEG. C	19.9	15.2	13.9	16.4	16.35		19.9	13.9	6.6433	5.1549

VALUES OF 0 INDICATE RESULTS BELOW DETECTION LIMITS 2 X STANDARD DEVIATION = 95%

WELL G101 12 MONTH AVERAGE COMPARED TO FOUR QUARTERLY ANALYSIS OF WELL G102

DATE		G101 ARITHEMIC MEAN	G102 ARITHMETIC MEAN	G102 10-04-82	G102 01-04-83	G102 04-05-83	G102 07-05-83	G102 MAXIMUM	G102 MINIMUM
ARSENIC	MG/L	.0033	.0995	.24	.018	.06	.08	.24	.018
BARIUM	MG/L	.1075	.3925	.86	.22	.16	.33	.86	.16
CADMIUM	MG/L	.004	.005	.009	.005	.006	0	.009	0
CHROMIUM	MG/L	.006	.0078	.007	.01	.01	.004	.01	.004
LEAD	MG/L	.0075	.005	0	.02	0	0	.02	0
MERCURY	MG/L	.0002	.0001	0	0	.0005	0	.0005	0
SELENIUM	MG/L	0	0	0	0	0	0	0	0
SILVER	MG/L	.0008	.0005	0	.002	0	0	.002	0
IRON	MG/L	.0575	14.5075	55	.18	.55	2.3	55	.18
MANGANESE	MG/L	.2378	8.8625	15.3	10.2	5.49	4.46	15.3	4.46
SODIUM	MG/L	19.9	86.85	146	86.8	59.5	55.1	146	55.1
FLUORIDE	MG/L	.775	.35	.6	.1	.3	.4	.6	.1
NITROGEN, NITRATE	MG/L	.4525	3.545	0	6.71	5.73	1.74	6.71	0
CHLORIDE	MG/L	17	152.75	210	163	108	13	210	108
PHENOL	MG/L	.0058	11.8575	17.4	8.53	10.3	11.2	17.4	8.53
SULFATE	MG/L	166.25	83.75	0	203	97	35	203	0
ENDRIN	UG/L	0	0	0	0	0	0	0	0
LINDANE	UG/L	0	.1253	0	0	.501	0	.501	0
METHOXYCHLOR	UG/L	0	0	0	0	0	0	0	0
TOXAPHENE	UG/L	0	0	0	0	0	0	0	0
2,4-D	UG/L	0	0	0	0	0	0	0	0
2,4,5-TP SILVEX	UG/L	0	0	0	0	0	0	0	0
TOTAL RADIUM	PCI/L	1.4	0	0	0	0	0	0	0
GROSS ALPHA	PCI/L	11.125	2.575	0	5.1	5.2	0	5.2	0
GROSS BETA	PCI/L	16.025	12.1	0	19.4	6.8	22.2	22.2	0
COLIFORM, TOTAL (MF)	/100ML	10	9.3333	TNTC	10	0	18	18	0
CONDUCTIVITY (A)	UMHOS			2270	1610	1080	1110		
(B)	UMHOS			2280	1620	1090	1120		
(C)	UMHOS			2280	1610	1100	1120		
(D)	UMHOS			2290	1630	1090	1120		
CONDUCTIVITY AV.	UMHOS	769.375	1526.25	2280	1617.5	1090	1117.5	2280	1090
TOC (A)	MG/L			169	75.1	72.1	28.5		
(B)	MG/L			166	73.1	72.5	29.3		
(C)	MG/L			168	73.6	72.7	28.9		
(D)	MG/L			167	74.3	72.1	28.7		
TOC AV.	MG/L	4.4188	85.6813	167.5	74.025	72.35	28.85	167.5	28.85
PH (A)	UNITS			6.77	6.37	7.42	6.94		
(B)	UNITS			6.78	6.37	7.41	6.95		
(C)	UNITS			6.77	6.37	7.42	6.95		
(D)	UNITS			6.77	6.36	7.42	6.94		
PH AV.	UNITS	7.2281	6.8756	6.7725	6.3675	7.4175	6.945	7.4175	6.3675
TOX (A)	MG/L-CL			.05	.031	.583	.305		
(B)	MG/L-CL			.058	.026	.59	.29		
(C)	MG/L-CL			.049	.034	.601	.274		
(D)	MG/L-CL			.046	.027	.6	.31		
TOX AV.	MG/L-CL	.1079	.2421	.0508	.0295	.5935	.29475	.5935	.0295
WATER LEVEL	FEET	407.55	405.6975	403.53	406.36	406.85	406.05	406.85	403.53
TEMPERATURE	DEG. C	15.15	14.625	18.6	12.5	11.4	16	18.6	11.4

VALUES OF 0 INDICATE RESULTS BELOW DEDECTION LIMITS

WELL G101 12 MONTH AVERAGE COMPARED TO FOUR QUARTERLY ANALYSIS OF WELL G106

DATE		G101 ARITHEMIC MEAN	G106 ARITHMETIC MEAN	G106 10-04-82	G106 01-04-83	G106 04-05-83	G106 07-05-83	G106 MAXIMUM	G106 MINIMUM
ARSENIC	MG/L	.0033	.0375	.03	.02	.05	.04	.05	.02
BARIUM	MG/L	.1075	.1875	.28	.14	.16	.17	.28	.14
CADMIUM	MG/L	.004	.0045	.009	.005	.004	0	.009	0
CHROMIUM	MG/L	.006	.0095	.005	.009	.011	.013	.013	.005
LEAD	MG/L	.0075	.01	0	.04	0	0	.04	0
MERCURY	MG/L	.0002	.0001	0	.0002	0	0	.0002	0
SELENIUM	MG/L	0	0	0	0	0	0	0	0
SILVER	MG/L	.0008	.0015	0	.003	0	.003	.003	0
IRON	MG/L	.0575	.6575	1.58	.07	.88	.1	1.58	.07
MANGANESE	MG/L	.2378	4.8525	5.11	4.91	3.2	6.19	6.19	3.2
SODIUM	MG/L	19.9	156.25	171	205	115	134	205	115
FLUORIDE	MG/L	.775	.875	1.1	.7	.8	.9	1.1	.7
NITROGEN, NITRATE	MG/L	.4525	.1725	.23	.2	0	.26	.26	0
CHLORIDE	MG/L	17	200	220	204	146	230	230	146
PHENOL	MG/L	.0058	14.2873	.949	21	19	16.2	21	.949
SULFATE	MG/L	166.25	113	17	229	148	58	229	17
ENDRIN	UG/L	0	0	0	0	0	0	0	0
LINDANE	UG/L	0	0	0	0	0	0	0	0
METHOXYCHLOR	UG/L	0	0	0	0	0	0	0	0
TOXAPHENE	UG/L	0	0	0	0	0	0	0	0
2,4-D	UG/L	0	0	0	0	0	0	0	0
2,4,5-TP SILVEX	UG/L	0	0	0	0	0	0	0	0
TOTAL RADIUM	PCI/L	1.4	0	0	0	0	0	0	0
GROSS ALPHA	PCI/L	11.125	1.35	0	5.4	0	0	5.4	0
GROSS BETA	PCI/L	16.025	4.575	0	9.7	0	8.6	9.7	0
COLIFORM, TOTAL (MF)	/100ML	10	400	TNTC	0	0	1200	1200	0
CONDUCTIVITY (A)	UMHOS			2000	1580	1510	1730		
(B)	UMHOS			2010	1590	1510	1740		
(C)	UMHOS			2020	1570	1500	1730		
(D)	UMHOS			2020	1570	1500	1740		
CONDUCTIVITY AV.	UMHOS	769.375	1707.5	2012.5	1577.5	1505	1735	2012.5	1505
TOC (A)	MG/L			55.7	64.6	69.5	91.1		
(B)	MG/L			54.7	63.4	70.8	91.2		
(C)	MG/L			56.7	62.7	70	91.4		
(D)	MG/L			56	62.6	70.2	91.1		
TOC AV.	MG/L	4.4188	70.1063	55.775	63.325	70.125	91.2	91.2	55.775
PH (A)	UNITS			6.91	6.66	7.68	7.18		
(B)	UNITS			6.92	6.67	7.69	7.18		
(C)	UNITS			6.91	6.65	7.67	7.18		
(D)	UNITS			6.92	6.67	7.68	7.17		
PH AV.	UNITS	7.2281	7.1088	6.915	6.6625	7.68	7.1775	7.68	6.6625
TOX (A)	MG/L-CL			.085	.026	.065	.278		
(B)	MG/L-CL			.083	.025	.068	.242		
(C)	MG/L-CL			.08	.029	.067	.223		
(D)	MG/L-CL			.09	.025	.07	.275		
TOX AV.	MG/L-CL	.1079	.1082	.0845	.0263	.0675	.2545	.2545	.02625
WATER LEVEL	FEET	407.55	406.36	403.37	407.18	408.01	406.88	408.01	403.37
TEMPERATURE	DEG. C	15.15	15.5	17.9	14.5	13.4	16.2	17.9	13.4

VALUES OF 0 INDICATE RESULTS BELOW DEDECTION LIMITS

WELL G101 12 MONTH AVERAGE COMPARED TO FOUR QUARTERLY ANALYSIS OF WELL G107

DATE		G101 ARITHEMIC MEAN	G107 ARITHMETIC MEAN	G107 10-04-82	G107 01-04-83	G107 04-05-83	G107 07-05-83	G107 MAXIMUM	G107 MINIMUM
ARSENIC	MG/L	.0033	.1128	.04	.021	.26	.13	.26	.021
BARIUM	MG/L	.1075	.265	.24	.14	.4	.28	.4	.14
CADMIUM	MG/L	.004	.0065	.009	.007	.006	.004	.009	.004
CHROMIUM	MG/L	.006	.0118	.007	.015	.011	.014	.015	.007
LEAD	MG/L	.0075	.0175	0	.04	0	.03	.04	0
MERCURY	MG/L	.0002	.0003	0	.001	.0002	0	.001	0
SELENIUM	MG/L	0	.0005	0	0	.001	.001	.001	0
SILVER	MG/L	.0008	.0038	0	.004	.005	.006	.006	0
IRON	MG/L	.0575	39.5	29	11	68	50	68	11
MANGANESE	MG/L	.2378	16.025	17.6	15.6	17.1	13.8	17.6	13.8
SODIUM	MG/L	19.9	413.75	419	432	417	387	432	387
FLUORIDE	MG/L	.775	.525	.1	1	.5	.5	1	.1
NITROGEN, NITRATE	MG/L	.4525	.2725	0	.41	.4	.28	.41	0
CHLORIDE	MG/L	17	491.25	363	432	510	660	660	363
PHENOL	MG/L	.0058	15.1	18.3	16.4	12.9	12.8	18.3	12.8
SULFATE	MG/L	166.25	141.5	112	212	128	114	212	112
ENDRIN	UG/L	0	0	0	0	0	0	0	0
LINDANE	UG/L	0	0	0	0	0	0	0	0
METHOXYCHLOR	UG/L	0	0	0	0	0	0	0	0
TOXAPHENE	UG/L	0	0	0	0	0	0	0	0
2,4-D	UG/L	0	0	0	0	0	0	0	0
2,4,5-TP SILVEX	UG/L	0	0	0	0	0	0	0	0
TOTAL RADIUM	PCI/L	1.4	.1	0	.4	0	0	.4	0
GROSS ALPHA	PCI/L	11.125	7	0	16.4	0	11.6	16.4	0
GROSS BETA	PCI/L	16.025	12.825	0	42	0	9.3	42	0
COLIFORM, TOTAL (MF)	/100ML	10	2.5	0	10	0	0	10	0
CONDUCTIVITY (A)	UMHOS			2250	2650	2760	2660		
(B)	UMHOS			2560	2670	2770	2670		
(C)	UMHOS			2570	2660	2770	2670		
(D)	UMHOS			2570	2660	2760	2660		
CONDUCTIVITY AV.	UMHOS	769.375	2644.375	2487.5	2660	2765	2665	2765	2487.5
TOC (A)	MG/L			135	132	159	110		
(B)	MG/L			134	130	159	107		
(C)	MG/L			137	130	161	103		
(D)	MG/L			135	130	160	109		
TOC AV.	MG/L	4.4188	133.1875	135.25	130.5	159.75	107.25	159.75	107.25
PH (A)	UNITS			6.62	6.47	7.01	6.85		
(B)	UNITS			6.64	6.47	7.02	6.86		
(C)	UNITS			6.64	6.48	7.01	6.85		
(D)	UNITS			6.63	6.48	7.01	6.85		
PH AV.	UNITS	7.2281	6.7431	6.6325	6.475	7.0125	6.8525	7.0125	6.475
TOX (A)	MG/L-CL			7.42	3.2	3.1	1.036		
(B)	MG/L-CL			7.91	3.2	3.5	1.954		
(C)	MG/L-CL			7.88	3.2	3.5	2.1		
(D)	MG/L-CL			7.32	3.5	3.4	1.058		
TOX AV.	MG/L-CL	.1079	4.0174	7.6325	3.275	3.375	1.787	7.6325	1.787
WATER LEVEL	FEET	407.55	405.1975	403.09	406.28	406.03	405.39	406.28	403.09
TEMPERATURE	DEG. C	15.15	16.35	19.9	15.2	13.9	16.4	19.9	13.9

VALUES OF 0 INDICATE RESULTS BELOW DEDECTION LIMITS

GRANITE CITY MONITORING WELLS COMPARISON-AVERAGE OF FOUR QUARTERLY ANALYSIS

			G101	G102	G106	G107	DRINKING STANDARDS
ARSENIC		MG/L	.0033	.0995	.035	.1128	.05
BARIUM		MG/L	.1075	.3925	.1875	.265	1
CADMIUM		MG/L	.004	.005	.0045	.0065	.01
CHROMIUM		MG/L	.006	.0078	.0095	.0118	.05
LEAD		MG/L	.0075	.005	.01	.0175	.05
MERCURY		MG/L	.0002	.0001	.0001	.0003	.002
SELENIUM		MG/L	0	0	0	.0005	.01
SILVER		MG/L	.0008	.0005	.0015	.0038	.05
IRON		MG/L	.0575	14.5075	.6575	39.5	
MANGANESE		MG/L	.2378	8.8625	4.8525	16.025	
SODIUM		MG/L	19.9	86.85	156.25	413.75	
FLUORIDE		MG/L	.775	.35	.875	.525	1.4 - 2.4
NITROGEN, NITRATE		MG/L	.4525	3.545	.1725	.2725	10
CHLORIDE		MG/L	17	152.75	200	491.25	
PHENOL		MG/L	.0058	11.8575	14.2873	15.1	
SULFATE		MG/L	166.25	83.75	113	141.5	
ENDRIN		UG/L	0	0	0	0	.2
LINDANE		UG/L	0	.1253	0	0	4
METHOXYCHLOR		UG/L	0	0	0	0	100
TOXAPHENE		UG/L	0	0	0	0	5
2,4-D		UG/L	0	0	0	0	100
2,4,5-TP SILVEX		UG/L	0	0	0	0	10
TOTAL RADIUM		PCI/L	1.4	0	0	.1	5
GROSS ALPHA		PCI/L	11.125	2.575	1.35	7	15
GROSS BETA		PCI/L	16.025	12.1	4.575	12.825	4MIL/YR
COLIFORM, TOTAL (MF)		/100ML	10	9.333	400	2.5	1
CONDUCTIVITY	(A)	UMHOS					
	(B)	UMHOS					
	(C)	UMHOS					
	(D)	UMHOS					
CONDUCTIVITY AV.		UMHOS	769.375	1526.55	1707.5	2644.375	
TOC	(A)	MG/L					
	(B)	MG/L					
	(C)	MG/L					
	(D)	MG/L					
TOC AV.		MG/L	4.4188	85.6813	70.1063	133.1875	
PH	(A)	UNITS					
	(B)	UNITS					
	(C)	UNITS					
	(D)	UNITS					
PH AV.		UNITS	7.2281	6.8756	7.1088	6.7431	
TOX	(A)	MG/L-CL					
	(B)	MG/L-CL					
	(C)	MG/L-CL					
	(D)	MG/L-CL					
TOX AV.		MG/L-CL	.1079	.2421	.1082	4.0174	
WATER LEVEL		FEET	407.55	405.6975	406.36	405.1975	
TEMPERATURE		DEG. C	15.15	14.625	15.5	16.35	

VALUES OF 0 INDICATE RESULTS BELOW DETECTION LIMITS

GRANITE CITY MONITORING WELLS
AQUALAB
DETECTION LIMITS

Arsenic	mg/l	.001
Barium	mg/l	.01
Cadmium	mg/l	.001
Chromium	mg/l	.001
Lead	mg/l	.01
Mercury	mg/l	.0001
Selenium	mg/l	.001
Silver	mg/l	.001
Iron	mg/l	.01
Manganese	mg/l	.001
Sodium	mg/l	.001
Fluoride	mg/l	.1
Nitrogen, Nitrate	mg/l	.01
Chloride	mg/l	1.0
Phenol	mg/l	.001
Sulfate	mg/l	1.0
Endrin	mg/l	.08
Lindane	mg/l	.5
Methorychlor	mg/l	1.0
Toraphene	mg/l	2.0
2,4-D	mg/l	2.0
2,4,5-TP Silver	mg/l	2.0
Total Radium	pci/l	2.0
Gross Alpha	pci/l	2.0 - 3.0
Gross Beta	pci/l	2.0 - 8.0
Coliform, Total	/1000 ml	1.0

GRANITE CITY MONITORING WELLS

Well No.	Height of the Stick-Up	Depth to the Bottom of the Well
#101	2'5-1/4"	16'7-1/4"
#102	2'4-1/8"	19'3-1/2"
#106	2'3-1/2"	15'6-1/8"
#107	2'-1/4"	20'11"

GRANITE CITY GROUND WATER MONITORING WELLS
METHODS OF ANALYSIS

Arsenic Selenium	Atomic absorption by hydride generation
Mercury	Cold vapor technique
Barium	Direct flame/Atomic absorption
Cadmium	Direct flame/Atomic absorption
Chromium	Direct flame/Atomic absorption
Lead	Direct flame/Atomic absorption
Silver	Direct flame/Atomic absorption
Iron	Direct flame/Atomic absorption
Manganese	Direct flame/Atomic absorption
Sodium	Direct flame/Atomic absorption
Fluoride	SPADNS Method
Nitrate Nitrogen	Colorimetric Method, Cadmium Reduction Method
Chloride	Titrimetric Method, Mercuric Nitrate Method
Phenol	EPA Distillation Colorimetric, 4 AAP
Sulfate	Turbidimetric Method
Conductivity	Specific conductivity meter
TOC	Low temperature ultra-violet light oxidation method
PH	PH Meter
Coliform (Total)	Membrane Filter Method (Ref. Microbiological Methods for Monitoring the Environment, EPA 600/8-78-017
Endrin Lindane Methoxychlor Toxaphane 2,4-D 2,4,5-TP Silvex	Extraction GC/EF (Ref. USEPA Method 608, Manual of Analytical Methods for the Analysis in Humans & Environmental Samples. USEPA Pub. 600/8-80-038)
Total Radium Gross Alpha Gross Beta	EPA 600/4-80-032 Prescribed Procedures for Measurement of Radio-Activity in Drinking Water and Radiochemical Analytical Procedures for Analysis of Environmental Samples
TOX	EPA Method 450.1

Method of Analysis for Inorganics: Method for Chemical Analysis of Water and Waste Pub. 600/4-79-020.