

	837	819.1	973.6	888.5	886.4	928	1025.2	395.2	956.5	1011.1	925.6	989.4	987.2	1015.1	1049.1	9031	9017	1070.3	1126.2	865.3	850.6	790.5	983.8	1084.8	968.8	973.7	1122.4	1023	903.7	840.8	1119	719.6	906.9	922.2
819.1	-1																																	
973.6	1	1																																
888.5	1	-1																																
886.4	1	-1																																
928	1	-1	1	1																														
1025.2	1	1	-1	1	1	1																												
895.2	1	-1	1	1	1	-1																												
936.5	1	-1	1	1	1	-1																												
1011.1	1	1	-1	1	1	-1																												
925.6	1	-1	1	1	-1	1																												
989.4	1	1	1	1	-1	1																												
997.2	1	1	1	-1	1	-1																												
1015.1	1	1	1	1	-1	1																												
1049.1	1	1	1	1	-1	1																												
903	1	-1	1	-1	1	-1																												
9017	1	-1	1	1	-1	1																												
1070.3	1	1	1	1	-1	1																												
1126.2	1	1	-1	1	1	-1																												
865.3	1	-1	1	-1	1	-1																												
850.6	1	-1	-1	-1	-1	-1																												
790.5	-1	-1	-1	-1	-1	-1																												
983.8	1	1	1	1	-1	1																												
1084.8	1	1	1	1	-1	1																												
988.8	1	-1	1	1	-1	1																												
973.7	1	1	1	-1	1	-1																												
1122.4	1	1	1	1	-1	1																												
1023	1	1	1	1	-1	1																												
903.7	1	-1	1	1	-1	-1																												
840.8	1	-1	-1	-1	-1	-1																												
1119	1	1	1	1	-1	1																												
719.6	-1	-1	-1	-1	-1	-1																												
906.9	1	-1	-1	-1	-1	-1																												
922.2	1	-1	-1	-1	-1	-1																												

S= 61
m= -1
N= 34
n= 0
V(S)= 4550
uc= 0.889 No Trend

Table B-1.2n: Mann Kendall Test - Delta

	926.8	898.9	1049.1	905.3	1012.6	877.3	826.8	901.9	1088.6	729.7	748.5	862.3
926.8												
898.9	-1											
1049.1	1	1										
905.3	-1	1	-1									
1012.6	1	1	-1	1								
877.3	-1	-1	-1	-1	-1							
826.8	-1	-1	-1	-1	-1	-1						
901.9	-1	1	-1	-1	-1	-1	1					
1088.6	1	1	1	1	1	1	1	1	1	1	1	
729.7	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
748.5	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
862.3	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1

S=	-24
m=	1
N=	12
n=	0
V(S)=	212.7
UC=	-1.5777
	No Trend

Table B-1.2o: Mann Kendall Test - Lyndhurst

	892.4	1018.9	1047.2	1083.8	1151.8	872	861.9	1037.9	887	1155.2	928.6	887.9	899.8	1060.3	975	1028.5	895.5	782.3	1013.2	1026.4	1122.5	855.9
1018.9	1																					
1047.2	1	1																				
1083.8	1	1	1																			
1151.8	1	1	1	1																		
872	-1	-1	-1	-1	-1																	
861.9	-1	-1	-1	-1	-1	-1																
1037.9	1	1	1	-1	-1	-1	1															
887	-1	-1	-1	-1	-1	-1	1	1														
1155.2	1	1	1	1	1	1	1	1														
928.6	1	-1	-1	-1	-1	-1	1	1	-1													
887.9	-1	-1	-1	-1	-1	-1	1	1	-1	1												
893.2	1	-1	-1	-1	-1	-1	1	1	-1	1	-1											
989.8	1	-1	-1	-1	-1	-1	1	1	-1	1	-1	1										
1060.3	1	1	1	-1	-1	-1	1	1	-1	1	-1	1	1									
975	1	-1	-1	-1	-1	-1	1	1	-1	1	-1	1	1	-1								
1028.5	1	-1	-1	-1	-1	-1	1	1	-1	1	-1	1	1	-1	1							
895.5	1	-1	-1	-1	-1	-1	1	1	-1	1	-1	1	1	-1	-1	-1						
782.3	-1	-1	-1	-1	-1	-1	1	1	-1	1	-1	1	1	-1	-1	-1	-1					
1013.2	1	-1	-1	-1	-1	-1	1	1	-1	1	-1	1	1	-1	1	1	1					
1026.4	1	1	-1	-1	-1	-1	1	1	-1	1	-1	1	1	-1	1	1	1	1				
1122.5	1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	1	-1
855.9	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

S=	-9
m=	-1
N=	23
n=	0
V(S)=	1433.7
uc=	-0.264 No Trend

Table B-1.2p: Mann Kendall Test -Mallorytown Graham Lake

	928.6	916.1	957.5	910.1	911.9	981.7	1015.4	839	1088.1	886	804.5	975.5	788.9	847.8	674.3	614.9
928.6																
916.1	-1															
957.5	1	1														
910.1	-1	-1	-1													
911.9	-1	-1	-1	1												
981.7	1	1	1	1	1											
1015.4	1	1	1	1	1	1										
839	-1	-1	-1	-1	-1	-1	-1	-1								
1088.1	1	1	1	1	1	1	1	1								
886	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
804.5	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
975.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
788.9	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
847.8	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
674.3	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
614.9	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

S=	-52
m=	1
N=	16
n=	0
V(S)=	493.3
uc=	-2.296

Trend

Table B-1.2cd: Mann Kendall Test - Mallorytown Landing

	1041.4	1067.5	1059.6	926.6	917.7	1059.7	993.8	911.9	870	928	1007.5
1041.4											
1067.5	1										
1059.6	1	-1									
926.6	-1	-1	-1								
917.7	-1	-1	-1	-1							
1059.7	1	-1	1	1	1						
993.8	-1	-1	-1	1	1	-1					
911.9	-1	-1	-1	-1	-1	-1	-1	-1	-1		
870	-1	-1	-1	-1	-1	-1	-1	-1	-1		
928	-1	-1	-1	1	1	1	-1	-1	1		
1007.5	-1	-1	1	1	1	-1	1	1	1	1	

S=	-19
m=	1
N=	11
n=	0
V(S)=	165
uc=	-1.401

No Trend

	967.5	908	1071.7	956.6	1032.4	1029.9	925.8	1129.9	1002.3	1018.3	968.8	1061.8	905.2	1061.7	1016.5	930.7	1056.5	861.1	1009.1	1016.7	1013.8	846.2	1016.7	773	1239.6	1099	944.9	844.5	1121.4	775.2	961.8	935.6
908	-1																															
1071.7	1	1																														
956.6	-1	1	-1																													
1032.4	1	-1	1	-1																												
1029.9	-1	-1	-1	1	-1																											
925.8	-1	1	-1	-1	-1	-1																										
1129.9	1	-1	1	1	1	1	-1																									
1002.3	1	-1	-1	-1	-1	-1	-1	-1																								
1018.3	1	1	-1	1	-1	-1	-1	1	-1																							
968.8	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																					
1061.8	1	-1	1	-1	1	-1	1	-1	-1	-1	-1	-1																				
905.2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																			
805.6	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																		
930.7	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																	
1056.5	1	-1	-1	1	1	1	-1	1	1	1	1	1	1	1	1	-1																
881.1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1															
820	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1														
1018.1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1													
1084.3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
1013.8	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		
846.2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		
1016	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		
773	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		
1239.6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
1099	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
944.9	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		
844.5	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		
1121.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
775.2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		
961.8	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		
935.6	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		

S= -52
m= 1
N= 32
D= 0
V(S)= 3862.7
uc= -0.827 No Trend

Table B-1.2s: Mann Kendall Test - Kingston Queen's University

m=

Table B-1.2i: Mann Kendall Test - Brockville Older Station

Trend

B-2 – Rain

Table B-2.1: Rain Kruskall-Wallis Test

	Catarqui TS1961	774.2	194.5	Centreville1961	Cressy1961	Crow Lake1961
Brookville PCC1961	Catarqui TS1962	664.4	61	Centreville1962	Cressy1962	Crow Lake1962
Brookville PCC1962	Catarqui TS1963	733.5	138	Centreville1963	Cressy1963	Crow Lake1963
Brookville PCC1963	Catarqui TS1964	632.7	31	Centreville1964	Cressy1964	Crow Lake1964
Brookville PCC1964	Catarqui TS1965	667.4	67	Centreville1965	Cressy1965	Crow Lake1965
Brookville PCC1965	Catarqui TS1966	707	107	Centreville1966	Cressy1966	Crow Lake1966
Brookville PCC1966	Catarqui TS1967	120.5	43	Centreville1967	Cressy1967	Crow Lake1967
Brookville PCC1967	Catarqui TS1968	874.1	294	Centreville1968	Cressy1968	Crow Lake1968
Brookville PCC1968	Catarqui TS1969	815.8	239	Centreville1969	Cressy1969	Crow Lake1969
Brookville PCC1969	Catarqui TS1970	692.5	90	Centreville1970	Cressy1970	Crow Lake1970
Brookville PCC1970	Catarqui TS1971	635.8	35	Centreville1971	Cressy1971	Crow Lake1971
Brookville PCC1971	Catarqui TS1972	827.5	256	Centreville1972	Cressy1972	Crow Lake1972
Brookville PCC1972	Catarqui TS1973	689.9	334	Centreville1973	Cressy1973	Crow Lake1973
Brookville PCC1973	Catarqui TS1974	762.6	180	Centreville1974	Cressy1974	Crow Lake1974
Brookville PCC1974	Catarqui TS1975	704.4	104	Centreville1975	Cressy1975	Crow Lake1975
Brookville PCC1975	Catarqui TS1976	276	218.5	Centreville1976	Cressy1976	Crow Lake1976
Brookville PCC1976	Catarqui TS1977	736.5	143	Centreville1977	Cressy1977	Crow Lake1977
Brookville PCC1977	Catarqui TS1978	667.3	65.5	Centreville1978	Cressy1978	Crow Lake1978
Brookville PCC1978	Catarqui TS1979	896.3	309	Centreville1979	Cressy1979	Crow Lake1979
Brookville PCC1979	Catarqui TS1980	980.3	350	Centreville1980	Cressy1980	Crow Lake1980
Brookville PCC1980	Catarqui TS1981	1039.4	369	Centreville1981	Cressy1981	Crow Lake1981
Brookville PCC1981	Catarqui TS1982	758.5	176	Centreville1982	Cressy1982	Crow Lake1982
Brookville PCC1982	Catarqui TS1983	805.2	231	Centreville1983	Cressy1983	Crow Lake1983
Brookville PCC1983	Catarqui TS1984	696.4	94	Centreville1984	Cressy1984	Crow Lake1984
Brookville PCC1984	Catarqui TS1985	680.2	80	Centreville1985	Cressy1985	Crow Lake1985
Brookville PCC1985	Catarqui TS1986	869.3	288	Centreville1986	Cressy1986	Crow Lake1986
Brookville PCC1986	Catarqui TS1987	705.5	105	Centreville1987	Cressy1987	Crow Lake1987
Brookville PCC1987	Catarqui TS1988	678.4	78	Centreville1988	Cressy1988	Crow Lake1988
Brookville PCC1988	Catarqui TS1989	821.7	244	Centreville1989	Cressy1989	Crow Lake1989
Brookville PCC1989	Catarqui TS1990	892.5	306	Centreville1990	Cressy1990	Crow Lake1990
Brookville PCC1990	Catarqui TS1991	886.4	300	Centreville1991	Cressy1991	Crow Lake1991
Brookville PCC1991	Catarqui TS1992	674.1	71	Centreville1992	Cressy1992	Crow Lake1992
Brookville PCC1992	Catarqui TS1993	736.4	142	Centreville1993	Cressy1993	Crow Lake1993
Brookville PCC1993	Catarqui TS1994	729.2	134	Centreville1994	Cressy1994	Crow Lake1994
Brookville PCC1994	Catarqui TS1995	645.5	46	Centreville1995	Cressy1995	Crow Lake1995
Brookville PCC1995	Catarqui TS1996	1061.8	373	Centreville1996	Cressy1996	Crow Lake1996
Brookville PCC1996	Catarqui TS1997	872.4	290	Centreville1997	Cressy1997	Crow Lake1997
Brookville PCC1998	Catarqui TS1998	781.8	205	Centreville1998	Cressy1998	Crow Lake1998
Brookville PCC1999	Catarqui TS1999	633.8	33	Centreville1999	Cressy1999	Crow Lake1999
Brookville PCC2000	Catarqui TS2000	971.4	347	Centreville2000	Cressy2000	Crow Lake2000
Brookville PCC2001	Catarqui TS2001	545.2	7	Centreville2001	Cressy2001	Crow Lake2001
Brookville PCC2002	Catarqui TS2002	791.4	216	Centreville2002	Cressy2002	Crow Lake2002
Count	33	Count	31	Count	16	Count
Sum	6064	Sum	5653	Sum	3089	Sum
KW #	1114306	Sum	1030852	Sum	596370	Sum

n=	376
df=	17
Product Sum =	13656894.31
h>	27.587
h=	25.1

Hypothesis of same population can not be rejected.

Table B-2.1: Rain Kruskall-Wallis Test

	Glenburnie1961	Godfrey1961	Hartington1961	Kingston Airport1961
Delta1961			Hartington1962	Kingston Airport1962
Delta1962	Glenburnie1962	Godfrey1962	Hartington1962	Kingston Airport1962
Delta1963	Glenburnie1963	Godfrey1963	Hartington1963	Kingston Airport1963
Delta1964	Glenburnie1964	Godfrey1964	Hartington1964	Kingston Airport1964
Delta1965	Glenburnie1965	Godfrey1965	Hartington1965	Kingston Airport1965
Delta1966	Glenburnie1966	Godfrey1966	Hartington1966	Kingston Airport1966
Delta1967	Glenburnie1967	Godfrey1967	Hartington1967	Kingston Airport1967
Delta1968	Glenburnie1968	Godfrey1968	Hartington1968	Kingston Airport1968
Delta1969	Glenburnie1969	Godfrey1969	Hartington1969	Kingston Airport1969
Delta1970	198 Glenburnie1970	Godfrey1970	Hartington1970	Kingston Airport1970
Delta1971	635.6 34 Glenburnie1971	Godfrey1971	Hartington1971	645 45 Kingston Airport1971
Delta1972	Glenburnie1972	Godfrey1972	Hartington1972	764.7 183 Kingston Airport1972
Delta1973	898.2 311 Glenburnie1973	Godfrey1973	Hartington1973	848.4 272 Kingston Airport1973
Delta1974	721.5 123 Glenburnie1974	Godfrey1974	Hartington1974	730.9 135 Kingston Airport1974
Delta1975	Glenburnie1975	262 Godfrey1975	Hartington1975	662.7 60 Kingston Airport1975
Delta1976	725 126 Glenburnie1976	898.9 312 Godfrey1976	Hartington1976	733.7 139 Kingston Airport1976
Delta1977	Glenburnie1977	708 110 Godfrey1977	Hartington1977	597.9 19 Kingston Airport1977
Delta1978	632.1 30 Glenburnie1978	826 253 Godfrey1978	Hartington1978	616.6 231 Kingston Airport1978
Delta1979	646.5 49 Glenburnie1979	858.1 280 Godfrey1979	Hartington1979	805.9 233 Kingston Airport1979
Delta1980	813.1 237 Glenburnie1980	1031.4 367 Godfrey1980	Hartington1980	928.6 329 Kingston Airport1980
Delta1981	936.6 333 Glenburnie1981	1122.9 375 Godfrey1981	Hartington1981	1006.8 359 Kingston Airport1981
Delta1982	Glenburnie1982	768.3 187 Godfrey1982	658.7 55 Hartington1982	792.1 221 Kingston Airport1982
Delta1983	673.9 70 Glenburnie1983	825.9 252 Godfrey1983	745.7 152 Hartington1983	840.2 265 Kingston Airport1983
Delta1984	Glenburnie1984	969.2 346 Godfrey1984	903.6 315 Hartington1984	1017.4 362 Kingston Airport1984
Delta1985	Glenburnie1985	791 215 Godfrey1985	Hartington1985	968.6 968 Kingston Airport1985
Delta1986	Glenburnie1986	982.1 352 Godfrey1986	935.4 332 Hartington1986	971.9 348 Kingston Airport1986
Delta1987	641.9 41 Glenburnie1987	Godfrey1987	742.3 150 Hartington1987	748 159 Kingston Airport1987
Delta1988	657.5 53 Glenburnie1988	749.8 164 Godfrey1988	641.4 40 Hartington1988	707.9 109 Kingston Airport1988
Delta1989	728.3 131 Glenburnie1989	739.8 145 Godfrey1989	649.8 51 Hartington1989	642.1 42 Kingston Airport1989
Delta1990	Glenburnie1990	865.6 286 Godfrey1990	760.9 178 Hartington1990	884.1 298 Kingston Airport1990
Delta1991	1024.7 365 Godfrey1991	860.4 283 Hartington1991	885.8 299 Kingston Airport1991	890.6 303 Kingston Airport1991
Delta1992	Glenburnie1992	910 319 Godfrey1992	734.2 140 Hartington1992	793.2 223 Kingston Airport1992
Delta1993	Glenburnie1993	778.8 201 Godfrey1993	773.8 192 Hartington1993	763 181 Kingston Airport1993
Delta1994	Glenburnie1994	774.4 193 Godfrey1994	645.6 47.5 Hartington1994	762.3 179 Kingston Airport1994
Delta1995	Glenburnie1995	674.4 72 Godfrey1995	633.2 32 Hartington1995	719.8 119 Kingston Airport1995
Delta1996	Glenburnie1996	805.5 365 Godfrey1996	1055 371 Hartington1996	1011.4 360 Kingston Airport1996
Delta1997	Glenburnie1997	860.2 282 Godfrey1997	915.8 325 Hartington1997	853.3 277 Kingston Airport1997
Delta1998	Glenburnie1998	840.3 266 Godfrey1998	771.4 189 Hartington1998	791.8 220 Kingston Airport1998
Delta1999	Glenburnie1999	Godfrey1999	717 115 Hartington1999	640.3 39 Kingston Airport1999
Delta2000	Glenburnie2000	Godfrey2000	911.7 322 Hartington2000	940.7 335 Kingston Airport2000
Delta2001	Glenburnie2001	Godfrey2001	510.5 3 Hartington2001	510.5 3 Kingston Airport2001
Delta2002	Glenburnie2002	Godfrey2002	Hartington2002	859.9 281 Kingston Airport2002
Count	13	Count 24	Count 18	Count 27
Sum	1736	Sum 6234	Sum 3289.5	Sum 5371
	231823	Sum 1619282	Sum 601156	Sum 1068437