Appendix D
Statistical Results

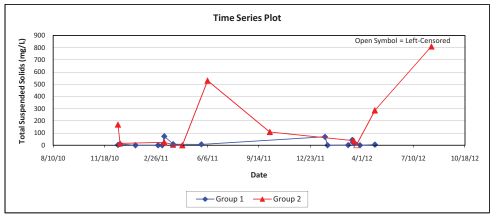
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-MC2
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Total Suspended Solids
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
-1092.767178

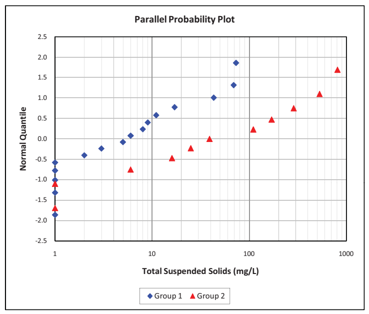
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-MC3
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	16	11
Count (nondetects)	4	1
S	4	10
VarS	477	164
Trend	Increasing	Increasing
p-value	0.44535392	0.24109583



Parallel Probability Plot

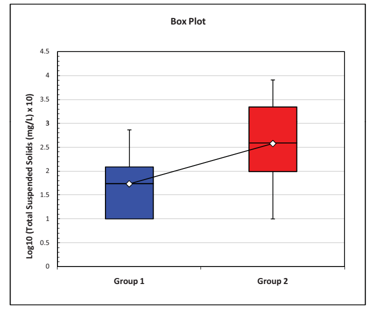


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.06121341	0.47415484
p-value (L)	0.20543276	1.00000000

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	15.54050942	1.73250544	11.28125000
Group 2	181.2712355	2.575750504	17.95454545
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	24.09115688	0.66700952	6.45489156
Group 2	264.7952056	1.014402006	8.332030201
degrees of freedom	10.11392004	15.89236409	17.92084983
Effect Size (d)	165.73072605	0.84324507	6.67329545
t Statistic	-2.06993656	-2.42063227	-2.23497866
t Critical	-1.81246110	-1.75305033	-1.73960672
p-value (2-sided)	0.06837106	0.02967177	0.04002962
Power	0.40101623	0.74272954	0.68666010
Power Analysis			
Beta	0.2	NA	NA
Additional n (each Group)	2	NA	NA

Summary Statistics

	Total Suspended Solids	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DSC-MC2	16	75%	0.001	0.073	0.016	0.006	0.024	1.550
Group 2	DSC-MC3	11	91%	0.0010	0.810	0.181	0.039	0.265	1.461

Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC1
Snow melt	2010-11	
Rain	2011-12	

Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC2
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison

Group 2 vs Group 1

Analyte

Total Suspended Solids

SW Standard

None

GW Standard

None

Standard Type

None

Alpha

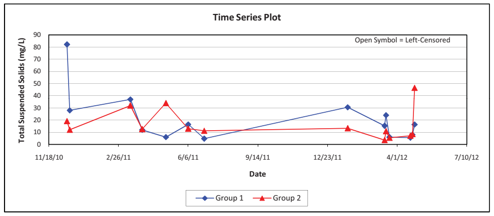
0.05

Mean % Difference (robust ROS)

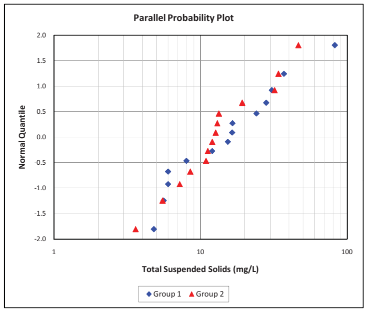
21.47864446

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	14	14
Count (nondetects)	0	0
S	-32	-25
VarS	333	334
Trend	Decreasing	Decreasing
p-value	0.04459929	0.09444374



Parallel Probability Plot

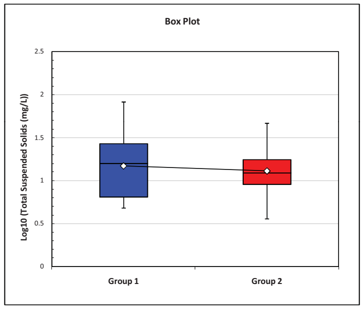


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.51413726	0.75090233
p-value (L)	0.66662552	0.14297991

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	20.88785714	1.17012003	15.10714286
Group 2	16.40142857	1.112746786	13.89285714
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	20.43510184	0.36605357	8.74242215
Group 2	12.4297929	0.306923297	7.95220959
degrees of freedom	21.46119860	25.23270300	25.77008560
Effect Size (d)	-4.48642857	-0.05737324	-1.21428571
t Statistic	0.70182916	0.44938474	0.38444755
t Critical	1.72074287	1.70814075	1.70814075
p-value (2-sided)	0.49087309	0.65718626	0.70403221
Power	0.15991985	0.10987322	0.09879121
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	71	190	264

Summary Statistics

	Total Suspended Solids	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DST-MC1	14	100%	0.005	0.0822	0.021	0.016	0.020	0.978
Group 2	DST-MC2	14	100%	0.0036	0.047	0.016	0.012	0.012	0.758

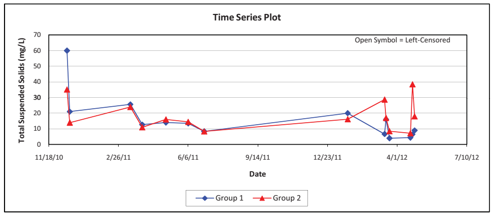
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC3
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Total Suspended Solids
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
-15.97745209

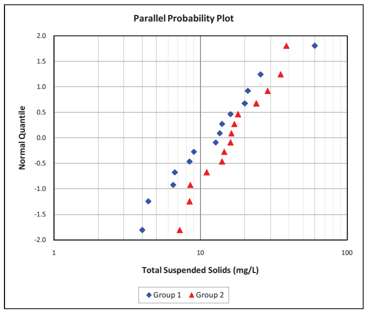
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC4
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	14	14
Count (nondetects)	0	0
S	-51	-1
VarS	334	334
Trend	Decreasing	Decreasing
p-value	0.00309781	0.50000000



Parallel Probability Plot

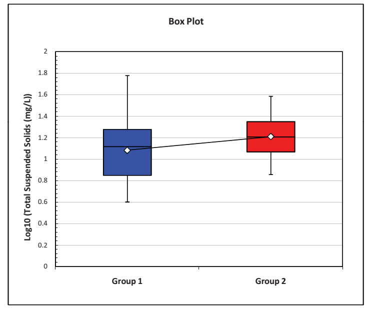


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.87097357	0.66178168
p-value (L)	1.00000000	0.81473554

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	15.83928571	1.08244587	12.39285714
Group 2	18.37	1.209237902	16.60714286
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	14.28541024	0.31882122	8.80379851
Group 2	9.798535212	0.226417717	7.304315298
degrees of freedom	23.01546546	23.45386113	25.14338966
Effect Size (d)	2.53071429	0.12679203	4.21428571
t Statistic	-0.54662003	-1.21320798	-1.37843001
t Critical	-1.71387152	-1.71387152	-1.70814075
p-value (2-sided)	0.59014142	0.23791616	0.18078561
Power	0.12753408	0.31068269	0.37218263
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	168	24	16

Summary Statistics

	Total Suspended Solids	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DST-MC3	14	100%	0.004	0.06	0.016	0.013	0.014	0.902
Group 2	DST-MC4	14	100%	0.0072	0.039	0.018	0.016	0.010	0.533

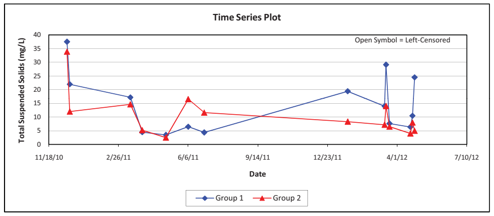
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC5
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Total Suspended Solids
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
27.98069964

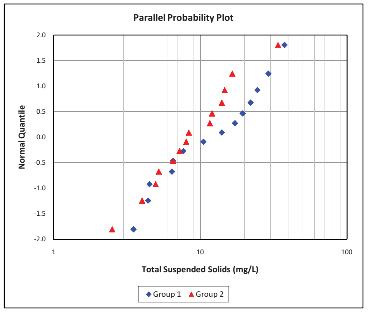
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC6
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	14	14
Count (nondetects)	0	0
S	-3	-37
VarS	334	334
Trend	Decreasing	Decreasing
p-value	0.45640701	0.02437246



Parallel Probability Plot

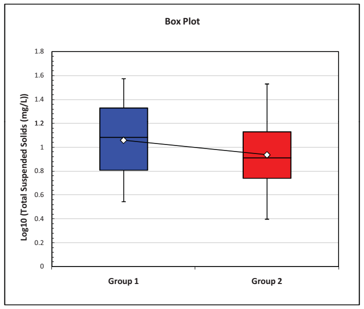


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.48653626	0.99804708
p-value (L)	0.94672455	1.00000000

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	14.80357143	1.05757099	15.85714286
Group 2	10.66142857	0.936188828	13.14285714
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	10.54518924	0.33621539	9.04779738
Group 2	7.925693231	0.29030566	7.391337371
degrees of freedom	24.13423152	25.45901125	25.00479449
Effect Size (d)	-4.14214286	-0.12138216	-2.71428571
t Statistic	1.17487718	1.02243413	0.86928462
t Critical	1.71088207	1.70814075	1.70814075
p-value (2-sided)	0.25206437	0.31677159	0.39330223
Power	0.29844422	0.24960405	0.20474986
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	18	27	42

Summary Statistics

	Total Suspended Solids	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DST-MC5	14	100%	0.004	0.0375	0.015	0.012	0.011	0.712
Group 2	DST-MC6	14	100%	0.0025	0.034	0.011	0.008	0.008	0.743

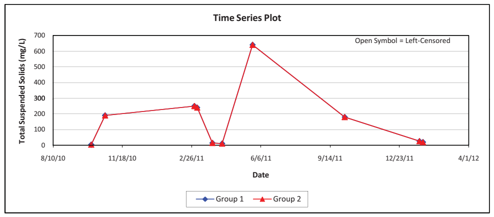
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-MC1
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Total Suspended Solids
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
0

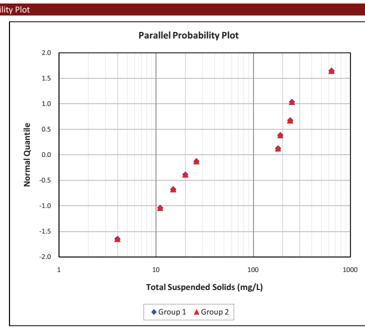
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-MC1
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	10	10
Count (nondetects)	0	0
S	-1	-1
VarS	125	125
Trend	Decreasing	Decreasing
p-value	0.50000000	0.50000000



Parallel Probability Plot

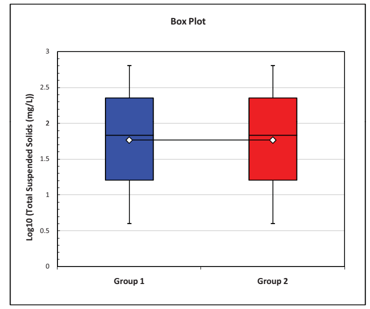


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.31162894	0.31162894
p-value (L)	0.51309018	0.51309018

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	157.60000000	1.76539046	10.50000000
Group 2	157.6	1.765390461	10.5
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	197.55741781	0.73997743	6.05530071
Group 2	197.5574178	0.73997743	6.055300708
degrees of freedom	18.00000000	18.00000000	18.00000000
Effect Size (d)	0.00000000	0.00000000	0.00000000
t Statistic	0.00000000	0.00000000	0.00000000
t Critical	1.73406359	1.73406359	1.73406359
p-value (2-sided)	1.00000000	1.00000000	1.00000000
Power	0.05000000	0.05000000	0.05000000
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	>300	>300	>300

Summary Statistics

	Total Suspended Solids	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DSC-MC1	10	100%	0.004	0.64	0.158	0.103	0.198	1.254
Group 2	DSC-MC1	10	100%	0.0040	0.640	0.158	0.103	0.198	1.254

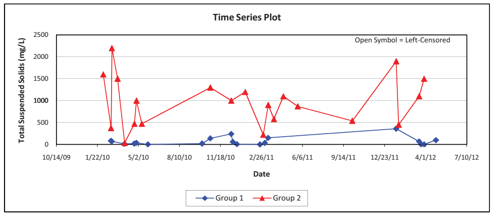
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-TC1
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Total Suspended Solids
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
-1204.192932

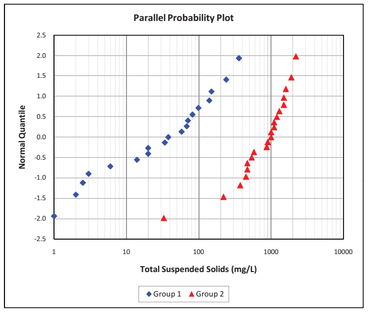
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-TT1
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	19	21
Count (nondetects)	0	0
S	-2	0
VarS	816	1093
Trend	Decreasing	Decreasing
p-value	0.48603708	0.50000000



Parallel Probability Plot

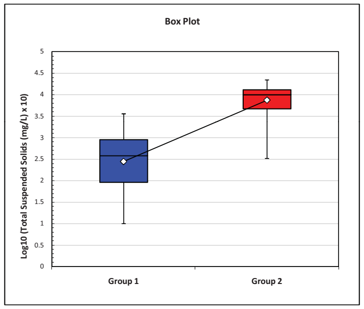


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.30464162	0.00159666
p-value (L)	0.85226355	0.35248071

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	74.14912281	2.44374706	10.68421053
Group 2	967.047619	3.870254685	29.38095238
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	93.71586448	0.74936372	6.23433710
Group 2	567.9133276	0.402808719	7.552987425
degrees of freedom	21.20067127	26.98184738	37.70550339
Effect Size (d)	892.89849624	1.42650763	18.69674185
t Statistic	-7.09889169	-7.38801148	-8.56767344
t Critical	-1.72074287	-1.70561790	-1.68709360
p-value (2-sided)	0.00000070	0.00000010	0.00000000
Power	0.99998766	0.99999720	0.99999998
Power Analysis			
Beta	NA	NA	NA
Additional n (each Group)	NA	NA	NA

Summary Statistics

	Total Suspended Solids	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DSC-TC1	19	100%	0.001	0.36	0.074	0.038	0.094	1.264
Group 2	DSC-TT1	21	100%	0.0330	2.200	0.967	1.000	0.568	0.587

Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-TC2
Snow melt	2010-11	
Rain	2011-12	

Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-DC1
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison

Group 2 vs Group 1

Analyte

Total Suspended Solids

SW Standard

None

GW Standard

None

Standard Type

None

Alpha

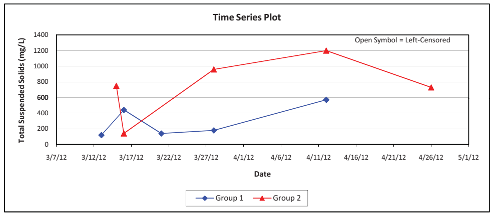
0.05

Mean % Difference (robust ROS)

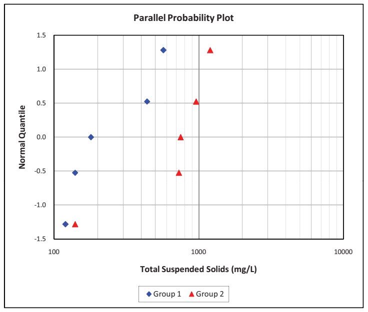
-160.6896552

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	5	5
Count (nondetects)	0	0
S	6	2
VarS	17	17
Trend	Increasing	Increasing
p-value	0.11033568	0.40324797



Parallel Probability Plot

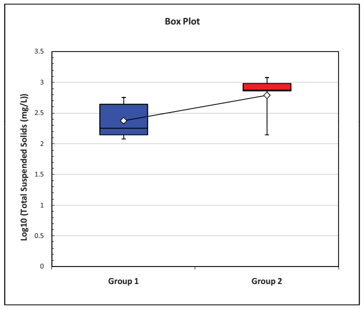


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.28413632	0.04383799
p-value (L)	0.47338234	0.90448051

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	290.00000000	2.37598186	3.70000000
Group 2	756	2.789192928	7.3
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	202.73134933	0.30469389	1.98746069
Group 2	393.3573439	0.37005862	2.906888371
degrees of freedom	5.98494214	7.71573572	7.06901902
Effect Size (d)	466.00000000	0.41321106	3.60000000
t Statistic	-2.35467681	-1.92752127	-2.28600229
t Critical	-2.01504837	-1.89457860	-1.89457860
p-value (2-sided)	0.07811537	0.10219482	0.06228466
Power	0.37396888	0.48731998	0.35356300
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	1	2	1

Summary Statistics

	Total Suspended Solids	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DSC-TC2	5	100%	0.120	0.57	0.290	0.180	0.203	0.699
Group 2	DSC-DC1	5	100%	0.1400	1.200	0.756	0.750	0.393	0.520

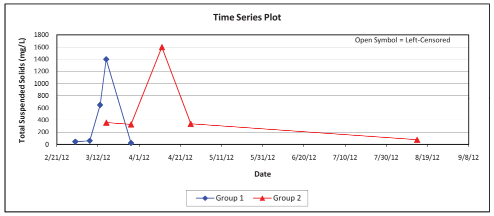
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-TT2
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Total Suspended Solids
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
-23.91403749

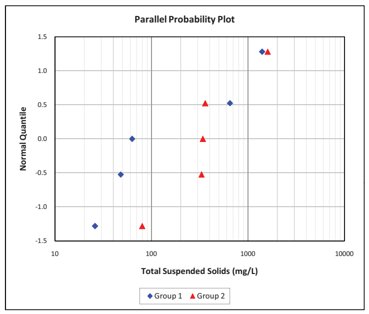
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-TT3
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	5	5
Count (nondetects)	0	0
S	2	-4
VarS	17	17
Trend	Increasing	None
p-value	0.40324797	0.23121636



Parallel Probability Plot

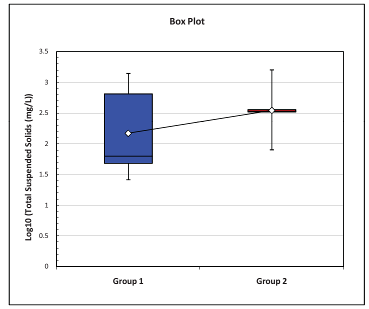


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.29396411	0.41554512
p-value (L)	0.23297667	0.22903058

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	437.40000000	2.17091931	4.60000000
Group 2	542	2.542701065	6.4
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	598.50964905	0.76034500	3.64691651
Group 2	602.428419	0.460291557	2.302172887
degrees of freedom	7.99965929	6.58467006	6.75109767
Effect Size (d)	104.60000000	0.37178176	1.80000000
t Statistic	-0.27542843	-0.93532276	-0.93325653
t Critical	-1.89457860	-1.94318027	-1.94318027
p-value (2-sided)	0.79222672	0.39255900	0.39352705
Power	0.07472358	0.17621238	0.17575541
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	250	19	19

Summary Statistics

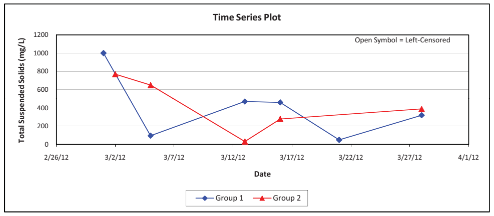
	Total Suspended Solids	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DSC-TT2	5	100%	0.026	1.4	0.437	0.063	0.599	1.368
Group 2	DSC-TT3	5	100%	0.0800	1.600	0.542	0.340	0.602	1.111

Group 1			Statistical Comparison
EventType	Year	Site	Group 2 vs Group 1
Mix Rain/Snow	2009-10	DSC-TT4	Analyte
Snow melt	2010-11		Total Suspended Solids
Rain	2011-12		SW Standard
			None
			GW Standard
			None
			Standard Type
			None
			Alpha
			0.05
			Mean % Difference (robust ROS)
			-6.32721202

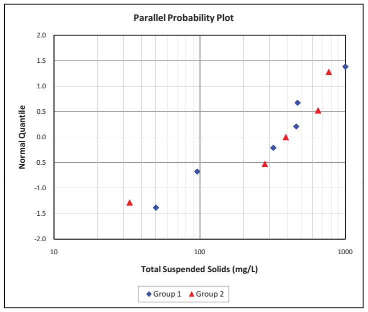
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-TT5
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	6	5
Count (nondetects)	0	0
S	-7	-4
VarS	28	17
Trend	Decreasing	Decreasing
p-value	0.12982818	0.23121636



Parallel Probability Plot

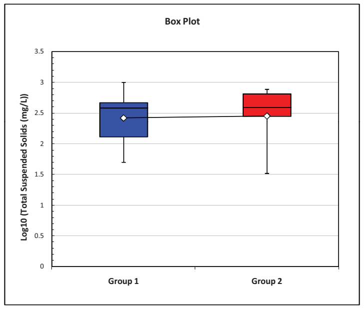


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.54712904	0.12192424
p-value (L)	1.00000000	0.93641692

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	399.33333333	2.42020782	6.00000000
Group 2	424.6	2.451228132	6
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	343.45693568	0.48530932	3.34664011
Group 2	293.9231192	0.549953702	3.674234614
degrees of freedom	8.98023983	8.13525255	8.27758054
Effect Size (d)	25.26666667	0.03102031	0.00000000
t Statistic	-0.13146426	-0.09822065	0.00000000
t Critical	-1.85954803	-1.85954803	1.85954803
p-value (2-sided)	0.89910677	0.92451047	1.00000000
Power	0.06111849	0.05810582	0.05000000
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	>300	>300	>300

Summary Statistics

	Total Suspended Solids	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DSC-TT4	6	100%	0.050	1	0.399	0.390	0.343	0.860
Group 2	DSC-TT5	5	100%	0.0330	0.770	0.425	0.390	0.294	0.692

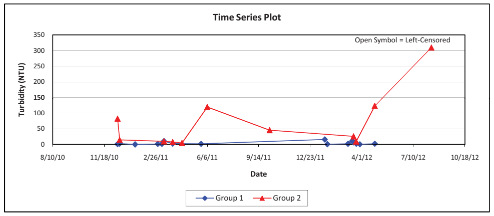
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-MC2
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Turbidity
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
-1528.843962

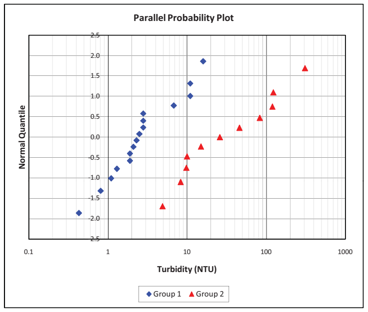
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-MC3
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	16	11
Count (nondetects)	0	0
S	19	13
VarS	488	165
Trend	Increasing	Increasing
p-value	0.20750749	0.17510069



Parallel Probability Plot

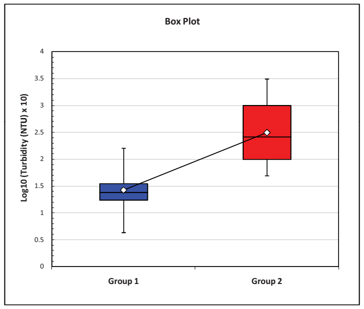


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.43958497	0.51040926
p-value (L)	0.02438909	0.65861479

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	4.22125000	1.42484826	9.37500000
Group 2	68.75757576	2.494093108	20.72727273
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	4.54289023	0.42659428	6.12508503
Group 2	91.59825579	0.590220955	4.818524859
degrees of freedom	10.03383096	17.01010845	24.44620448
Effect Size (d)	64.53632576	1.06924484	11.35227273
t Statistic	-2.33478273	-5.15377556	-5.37814941
t Critical	-1.81246110	-1.73960672	-1.71088207
p-value (2-sided)	0.04439803	0.00009610	0.00001835
Power	0.69358988	0.99834757	0.99939213
Power Analysis			
Beta	NA	NA	NA
Additional n (each Group)	NA	NA	NA

Summary Statistics

	Turbidity	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DSC-MC2	16	100%	0.000	0.016	0.004	0.002	0.005	1.076
Group 2	DSC-MC3	11	100%	0.0049	0.310	0.069	0.026	0.092	1.332

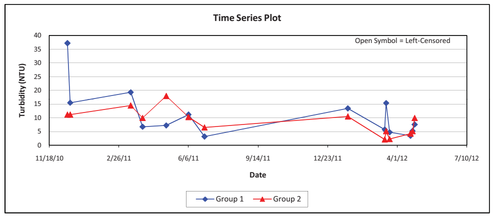
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC1
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Turbidity
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
22.48558616

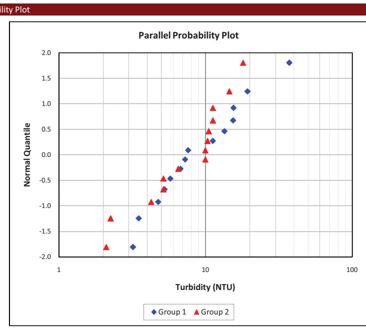
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC2
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	14	14
Count (nondetects)	0	0
S	-37	-42
VarS	334	331
Trend	Decreasing	Decreasing
p-value	0.02437246	0.01207610



Parallel Probability Plot

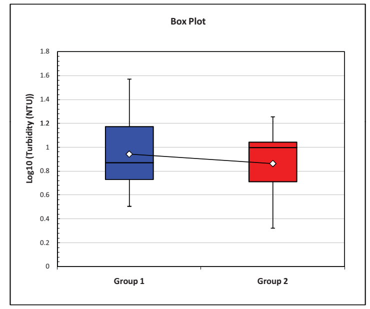


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.78262540	0.13029798
p-value (L)	0.56429394	0.24525092

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	11.15000000	0.94200622	15.50000000
Group 2	8.642857143	0.8631477	13.5
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	9.03467679	0.30465040	8.70676130
Group 2	4.612018461	0.284568845	7.89595807
degrees of freedom	19.34449127	25.88003419	25.75546957
Effect Size (d)	-2.50714286	-0.07885852	-2.00000000
t Statistic	0.92479110	0.70778059	0.63666727
t Critical	1.72913279	1.70814075	1.70814075
p-value (2-sided)	0.36730741	0.48589878	0.53036782
Power	0.21557473	0.16336054	0.14709594
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	36	69	88

Summary Statistics

	Turbidity	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DST-MC1	14	100%	0.003	0.0372	0.011	0.007	0.009	0.810
Group 2	DST-MC2	14	100%	0.0021	0.018	0.009	0.010	0.005	0.534

Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC3
Snow melt	2010-11	
Rain	2011-12	

Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC4
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison

Group 2 vs Group 1

Analyte

Turbidity

SW Standard

None

GW Standard

None

Standard Type

None

Alpha

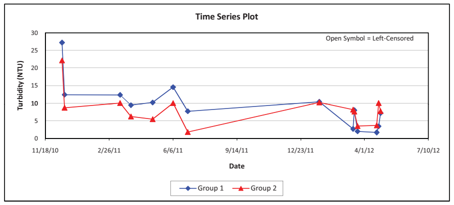
0.05

Mean % Difference (robust ROS)

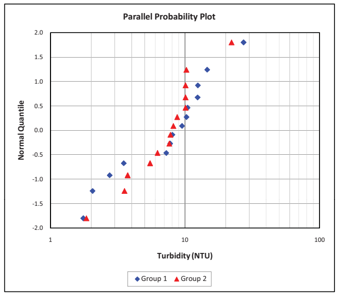
10.73076923

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	14	14
Count (nondetects)	0	0
S	-57	-22
VarS	334	330
Trend	Decreasing	Decreasing
p-value	0.00108576	0.12383813



Parallel Probability Plot

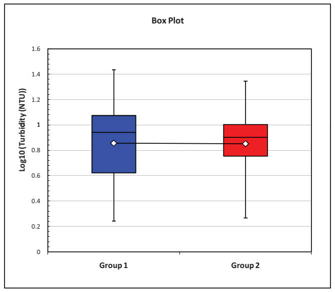


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.25555965	0.28353950
p-value (L)	0.61293475	0.13821500

Note: Values should be greater than alpha (0

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	9.28571429	0.85639303	15.25000000
Group 2	8.289285714	0.852092354	13.75
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	6.60047867	0.34597975	9.51264341
Group 2	4.839945111	0.260130889	6.974541617
degrees of freedom	23.84461339	24.13842172	23.84322105
Effect Size (d)	-0.99642857	-0.00430067	-1.50000000
t Statistic	0.45551292	0.03717495	0.47581451
t Critical	1.71387152	1.71088207	1.71387152
p-value (2-sided)	0.65320425	0.97066629	0.63889738
Power	0.11044331	0.05358688	0.11409202
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	184	>300	168

Summary Statistics

	Turbidity	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DST-MC3	14	100%	0.002	0.0273	0.009	0.009	0.007	0.711
Group 2	DST-MC4	14	100%	0.0019	0.022	0.008	0.008	0.005	0.584

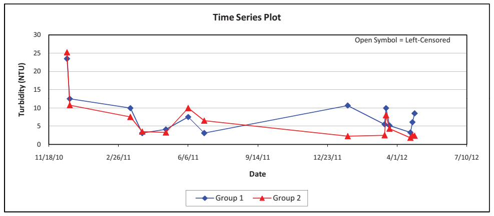
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC5
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Turbidity
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
19.88183161

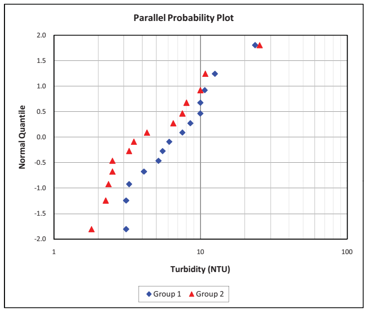
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC6
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	14	14
Count (nondetects)	0	0
S	-20	-50
VarS	333	333
Trend	Decreasing	Decreasing
p-value	0.14877189	0.00360994



Parallel Probability Plot

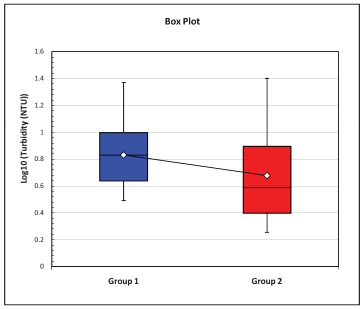


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.55350300	0.26974712
p-value (L)	1.00000000	0.49469470

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	8.05952381	0.83140115	16.60714286
Group 2	6.457142857	0.677598593	12.39285714
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	5.40148252	0.25908825	7.02243266
Group 2	6.19260903	0.333153068	9.025985076
degrees of freedom	25.52893984	24.51334638	24.51799896
Effect Size (d)	-1.60238095	-0.15380256	-4.21428571
t Statistic	0.72962442	1.36355937	1.37883532
t Critical	1.70814075	1.71088207	1.71088207
p-value (2-sided)	0.47268142	0.18590488	0.18120891
Power	0.16859689	0.36568814	0.37136823
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	64	10	9

Summary Statistics

	Turbidity	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DST-MC5	14	100%	0.003	0.0235	0.008	0.007	0.005	0.670
Group 2	DST-MC6	14	100%	0.0018	0.025	0.006	0.004	0.006	0.959

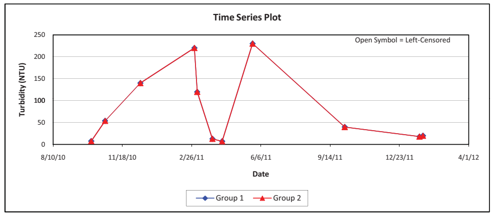
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-MC1
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Turbidity
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
0

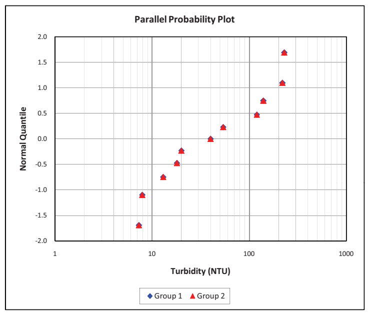
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-MC1
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	11	11
Count (nondetects)	0	0
S	-3	-3
VarS	165	165
Trend	Decreasing	Decreasing
p-value	0.43813483	0.43813483



Parallel Probability Plot

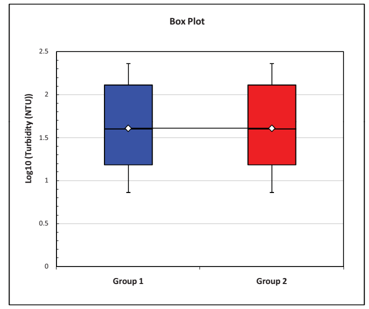


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.27966515	0.27966515
p-value (L)	0.65647634	0.65647634

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	79.10909091	1.60864630	11.50000000
Group 2	79.10909091	1.608646305	11.5
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	84.84336691	0.56182678	6.63324958
Group 2	84.84336691	0.561826781	6.633249581
degrees of freedom	20.00000000	20.00000000	20.00000000
Effect Size (d)	0.00000000	0.00000000	0.00000000
t Statistic	0.00000000	0.00000000	0.00000000
t Critical	1.72471822	1.72471822	1.72471822
p-value (2-sided)	1.00000000	1.00000000	1.00000000
Power	0.05000000	0.05000000	0.05000000
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	>300	>300	>300

Summary Statistics

	Turbidity	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DSC-MC1	11	100%	0.007	0.23	0.079	0.040	0.085	1.072
Group 2	DSC-MC1	11	100%	0.0073	0.230	0.079	0.040	0.085	1.072

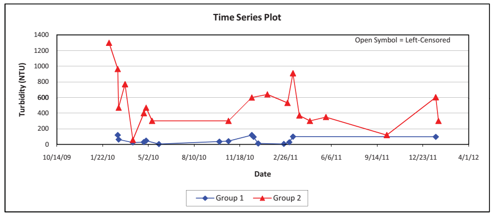
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-TC1
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Turbidity
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
-828.984874

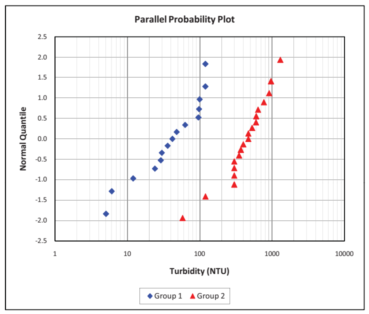
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-TT1
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	15	19
Count (nondetects)	0	0
S	0	-48
VarS	407	807
Trend	None	None
p-value	0.50000000	0.04904986



Parallel Probability Plot

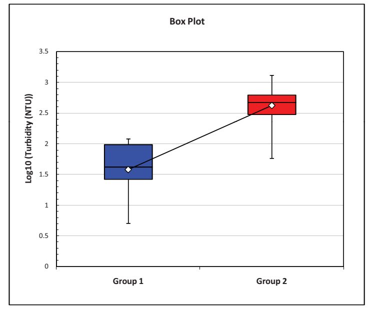


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.10509864	0.08755983
p-value (L)	0.78682823	0.20288132

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	55.27444444	1.57847644	8.46666667
Group 2	513.4912281	2.623304575	24.63157895
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	41.09861295	0.44605460	5.01236566
Group 2	306.0418024	0.314554606	6.33737175
degrees of freedom	18.81911872	24.24429262	31.99727228
Effect Size (d)	458.21678363	1.04482813	16.16491228
t Statistic	-6.45301286	-7.68756474	-8.30475485
t Critical	-1.73406359	-1.71088207	-1.69551874
p-value (2-sided)	0.00000595	0.00000008	0.00000000
Power	0.99991440	0.99999820	0.99999989
Power Analysis			
Beta	NA	NA	NA
Additional n (each Group)	NA	NA	NA

Summary Statistics

	Turbidity	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DSC-TC1	15	100%	0.005	0.12	0.055	0.042	0.041	0.744
Group 2	DSC-TT1	19	100%	0.0580	1.300	0.513	0.470	0.306	0.596

Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-MC2
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison

Group 2 vs Group 1

Analyte

Total Nitrogen as N

SW Standard

None

GW Standard

None

Standard Type

None

Alpha

0.05

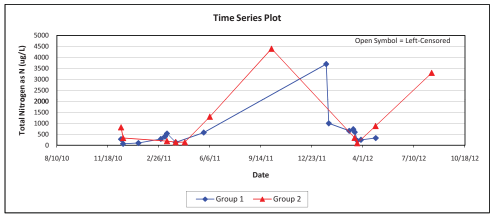
Mean % Difference (robust ROS)

-78.17310982

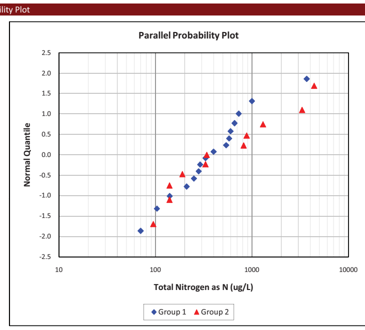
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-MC3
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	16	11
Count (nondetects)	1	0
S	34	8
VarS	493	164
Trend	Increasing	Increasing
p-value	0.06867355	0.29232398



Parallel Probability Plot

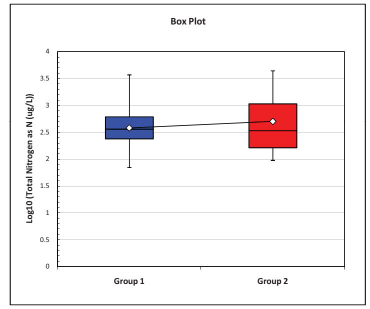


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.80269135	0.42718236
p-value (L)	0.86268044	0.63204474

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	616.61658472	2.58004983	13.34375000
Group 2	1085	2.702993875	14.95454545
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	861.55213386	0.41396297	7.15709147
Group 2	1440.352387	0.566641265	9.220776934
degrees of freedom	14.92270121	17.14592259	17.94695606
Effect Size (d)	468.38341528	0.12294404	1.61079545
t Statistic	-0.96621484	-0.61549287	-0.48720720
t Critical	-1.76131012	-1.73960672	-1.73960672
p-value (2-sided)	0.35156846	0.54688525	0.63271911
Power	0.21991517	0.13829394	0.11369017
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	39	114	191

Summary Statistics

	Total Nitrogen as N	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DSC-MC2	16	94%	0.070	3.7	0.617	0.365	0.862	1.397
Group 2	DSC-MC3	11	100%	0.0950	4.400	1.085	0.340	1.440	1.328

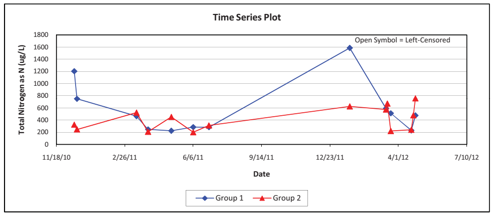
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC1
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Total Nitrogen as N
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
26.96697198

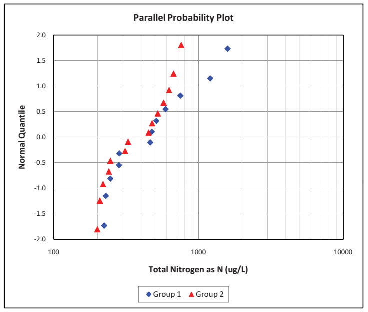
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC2
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	12	14
Count (nondetects)	0	0
S	-10	23
VarS	213	334
Trend	Decreasing	Increasing
p-value	0.26856693	0.11421990



Parallel Probability Plot

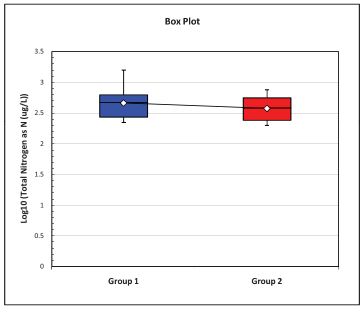


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.23599282	0.15420200
p-value (L)	0.28300493	0.34169062

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	570.58333333	2.66526631	14.62500000
Group 2	416.7142857	2.575201934	12.53571429
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	426.26548670	0.28227875	7.69629486
Group 2	191.4641676	0.206843776	7.757042174
degrees of freedom	14.75990623	19.89027023	23.45125659
Effect Size (d)	-153.86904762	-0.09006437	-2.08928571
t Statistic	1.15458484	0.91464751	0.68754563
t Critical	1.76131012	1.72913279	1.71387152
p-value (2-sided)	0.26904367	0.37246724	0.49892405
Power	0.27687282	0.21272921	0.15770580
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	17	33	69

Summary Statistics

	Total Nitrogen as N	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DST-MC1	12	100%	0.223	1.587	0.571	0.470	0.426	0.747
Group 2	DST-MC2	14	100%	0.2000	0.759	0.417	0.389	0.191	0.459

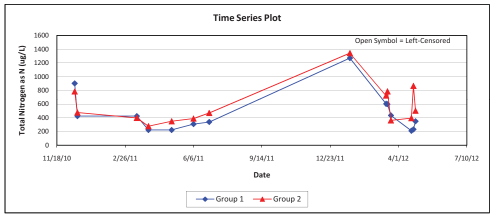
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC3
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Total Nitrogen as N
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
-24.01893419

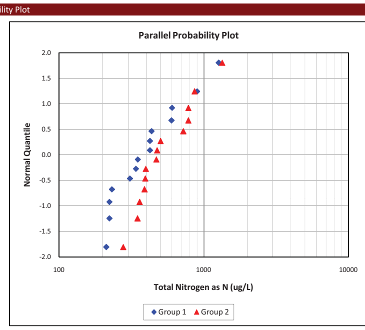
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC4
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	14	14
Count (nondetects)	0	0
S	-11	14
VarS	332	333
Trend	Decreasing	Increasing
p-value	0.29146944	0.23799948



Parallel Probability Plot

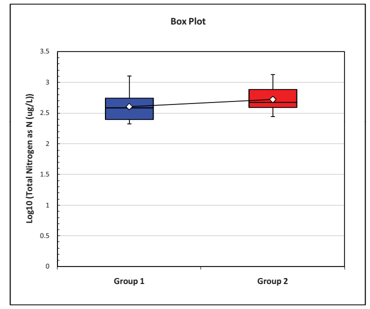


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.25523058	0.32582532
p-value (L)	0.50323895	0.24420787

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	467.78571429	2.60479969	12.21428571
Group 2	580.1428571	2.721339612	16.78571429
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	299.73608355	0.23587359	8.89838854
Group 2	289.7367126	0.191791492	7.070290729
degrees of freedom	25.97012541	24.96135946	24.73657107
Effect Size (d)	112.35714286	0.11653992	4.57142857
t Statistic	-1.00844789	-1.43434955	-1.50499332
t Critical	-1.70814075	-1.71088207	-1.71088207
p-value (2-sided)	0.32329922	0.16493023	0.14593603
Power	0.24528954	0.39225332	0.41930716
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	41	14	12

Summary Statistics

	Total Nitrogen as N	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DST-MC3	14	100%	0.212	1.27	0.468	0.388	0.300	0.641
Group 2	DST-MC4	14	100%	0.2780	1.343	0.580	0.474	0.290	0.499

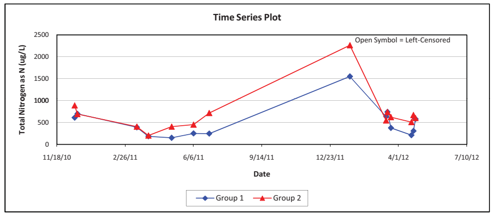
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC5
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Total Nitrogen as N
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
-39.71973791

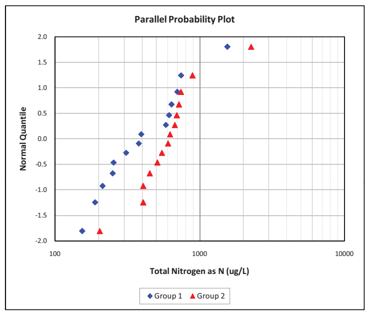
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC6
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	14	14
Count (nondetects)	0	0
S	-1	8
VarS	334	333
Trend	Decreasing	Increasing
p-value	0.50000000	0.35056713



Parallel Probability Plot

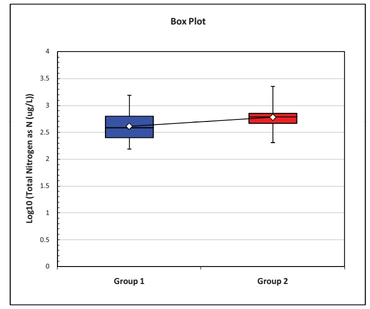


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.72041999	0.13485119
p-value (L)	0.97996874	0.12213352

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	497.83333333	2.60892096	11.92857143
Group 2	695.5714286	2.779086103	17.07142857
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	364.12702653	0.28080536	8.75710073
Group 2	483.4589656	0.228951758	7.040698017
degrees of freedom	24.15828173	24.98687798	24.85368783
Effect Size (d)	197.73809524	0.17016515	5.14285714
t Statistic	-1.22242837	-1.75732047	-1.71253166
t Critical	-1.71088207	-1.71088207	-1.71088207
p-value (2-sided)	0.23392541	0.09216833	0.10025024
Power	0.31483095	0.48167254	0.49934872
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	24	5	6

Summary Statistics

	Total Nitrogen as N	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DST-MC5	14	100%	0.154	1.55	0.498	0.387	0.364	0.731
Group 2	DST-MC6	14	100%	0.2040	2.264	0.696	0.614	0.483	0.695

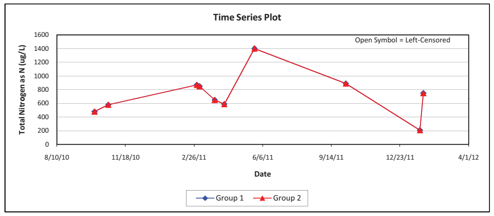
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-MC1
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Total Nitrogen as N
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
0

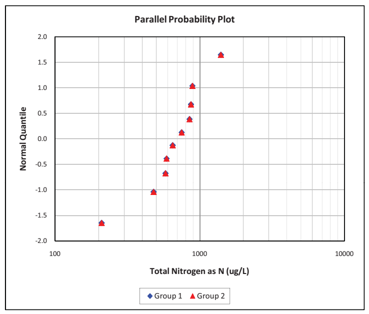
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-MC1
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	10	10
Count (nondetects)	0	0
S	7	7
VarS	125	125
Trend	Increasing	Increasing
p-value	0.29575252	0.29575252



Parallel Probability Plot

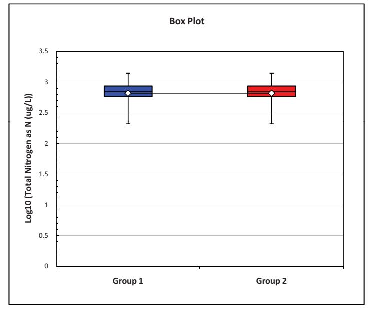


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.25502298	0.25502298
p-value (L)	0.60548383	0.60548383

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	727.00000000	2.81901714	10.50000000
Group 2	727	2.819017138	10.5
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	314.50313547	0.21732885	6.05530071
Group 2	314.5031355	0.217328851	6.055300708
degrees of freedom	18.00000000	18.00000000	18.00000000
Effect Size (d)	0.00000000	0.00000000	0.00000000
t Statistic	0.00000000	0.00000000	0.00000000
t Critical	1.73406359	1.73406359	1.73406359
p-value (2-sided)	1.00000000	1.00000000	1.00000000
Power	0.05000000	0.05000000	0.05000000
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	>300	>300	>300

Summary Statistics

	Total Nitrogen as N	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DSC-MC1	10	100%	0.210	1.4	0.727	0.700	0.315	0.433
Group 2	DSC-MC1	10	100%	0.2100	1.400	0.727	0.700	0.315	0.433

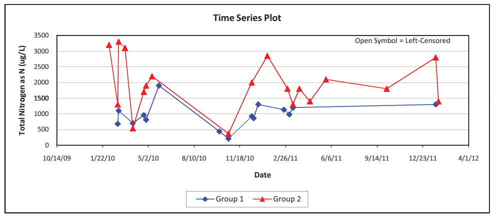
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-TC1
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Total Nitrogen as N
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
-100.7819687

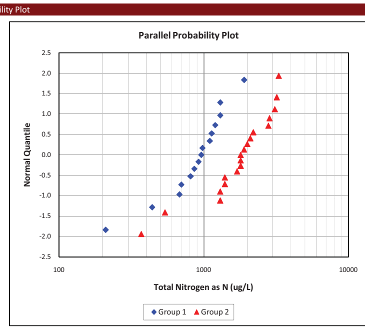
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-TT1
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	15	19
Count (nondetects)	0	0
S	36	-22
VarS	407	811
Trend	Increasing	None
p-value	0.04144347	0.23048266



Parallel Probability Plot

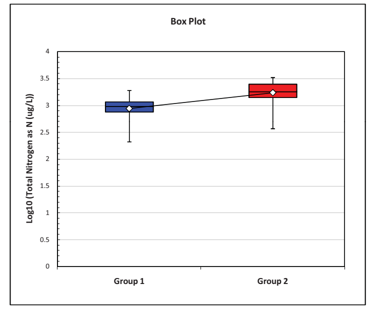


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.04728817	0.00731395
p-value (L)	0.45838056	0.29922745

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	966.22222222	2.94034130	10.50000000
Group 2	1940	3.235708356	23.02631579
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	399.54113892	0.22585531	6.18754509
Group 2	829.7456103	0.245111018	8.860765085
degrees of freedom	27.11817431	31.17538324	31.60198212
Effect Size (d)	973.77777778	0.29536706	12.52631579
t Statistic	-4.49754870	-3.64601169	-4.84489022
t Critical	-1.70328842	-1.69551874	-1.69551874
p-value (2-sided)	0.00012662	0.00099986	0.00003609
Power	0.99527323	0.96989569	0.99819576
Power Analysis			
Beta	NA	NA	NA
Additional n (each Group)	NA	NA	NA

Summary Statistics

	Total Nitrogen as N	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DSC-TC1	15	100%	0.210	1.9	0.966	0.960	0.400	0.414
Group 2	DSC-TT1	19	100%	0.3700	3.300	1.940	1.800	0.830	0.428

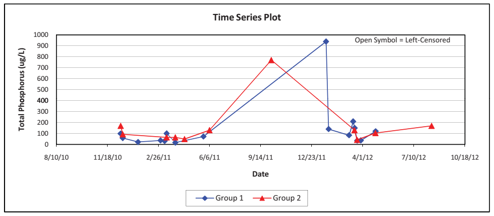
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-MC2
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Total Phosphorus
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
-20.95290422

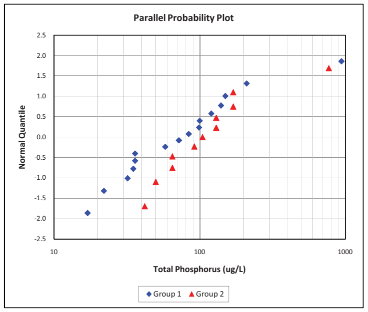
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-MC3
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	16	11
Count (nondetects)	0	0
S	25	2
VarS	492	162
Trend	Increasing	Increasing
p-value	0.13970688	0.46868835



Parallel Probability Plot

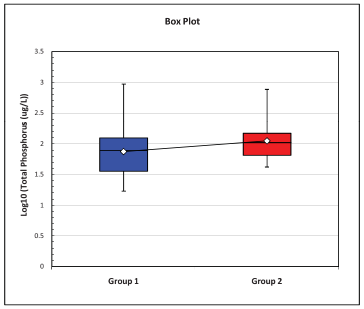


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.36132631	0.12986334
p-value (L)	0.54090427	0.22449104

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	134.43750000	1.87325733	12.43750000
Group 2	162.6060606	2.046083409	16.27272727
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	221.51658140	0.43248046	8.53790568
Group 2	206.345601	0.346258802	6.683425904
degrees of freedom	22.64622169	24.31048348	24.48196649
Effect Size (d)	28.16856061	0.17282608	3.83522727
t Statistic	-0.33818886	-1.14988864	-1.30653118
t Critical	-1.71714434	-1.71088207	-1.71088207
p-value (2-sided)	0.73857853	0.26200629	0.20428656
Power	0.09088412	0.29000130	0.34476781
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	>300	27	19

Summary Statistics

	Total Phosphorus	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DSC-MC2	16	100%	0.017	0.94	0.134	0.078	0.222	1.648
Group 2	DSC-MC3	11	100%	0.0420	0.770	0.163	0.105	0.206	1.269

Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC1
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison

Group 2 vs Group 1

Analyte

Total Phosphorus

SW Standard

None

GW Standard

None

Standard Type

None

Alpha

0.05

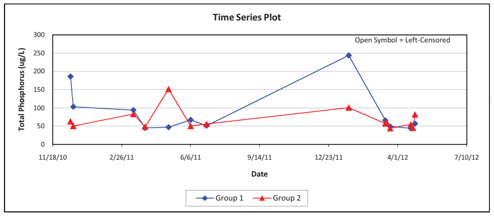
Mean % Difference (robust ROS)

22.995523

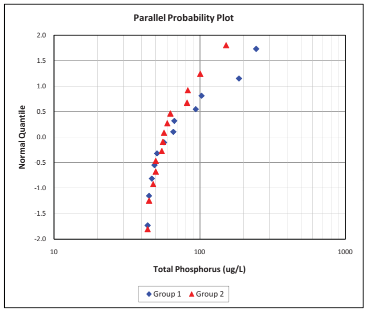
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC2
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	12	14
Count (nondetects)	0	0
S	-22	-10
VarS	213	333
Trend	Decreasing	Decreasing
p-value	0.07493037	0.31084945



Parallel Probability Plot

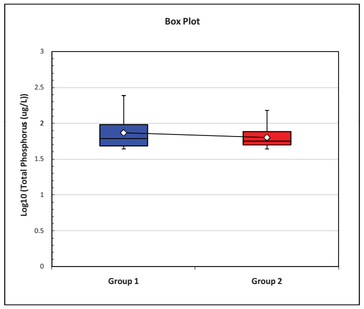


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.02548454	0.03231687
p-value (L)	0.07019373	0.06698663

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	87.75000000	1.86757423	14.20833333
Group 2	67.57142857	1.80120148	12.89285714
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	63.56260336	0.24715996	8.69811456
Group 2	29.4035955	0.152895651	6.889731968
degrees of freedom	14.97894189	17.78097158	20.89837290
Effect Size (d)	-20.17857143	-0.06637275	-1.31547619
t Statistic	1.01090326	0.80723805	0.42247486
t Critical	1.76131012	1.73960672	1.72471822
p-value (2-sided)	0.33050900	0.43136667	0.67742096
Power	0.23271771	0.18209990	0.10381567
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	25	45	196

Summary Statistics

	Total Phosphorus	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DST-MC1	12	100%	0.044	0.244	0.088	0.062	0.064	0.724
Group 2	DST-MC2	14	100%	0.0440	0.152	0.068	0.057	0.029	0.435

Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC3
Snow melt	2010-11	
Rain	2011-12	

Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC4
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison

Group 2 vs Group 1

Analyte

Total Phosphorus

SW Standard

None

GW Standard

None

Standard Type

None

Alpha

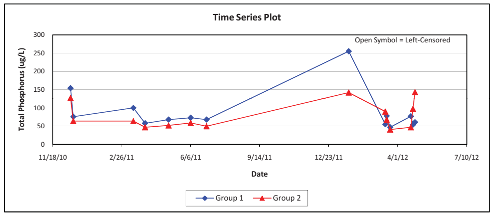
0.05

Mean % Difference (robust ROS)

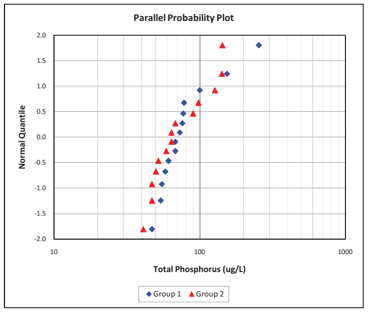
10.78431373

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	14	14
Count (nondetects)	0	0
S	-30	5
VarS	333	332
Trend	Decreasing	Increasing
p-value	0.05591896	0.41307623



Parallel Probability Plot

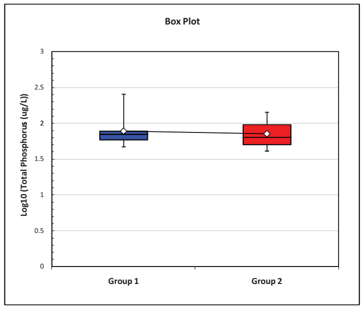


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.01071534	0.11665549
p-value (L)	0.00324649	0.20928681

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	87.42857143	1.89110090	15.71428571
Group 2	78	1.853183606	13.28571429
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	55.00309682	0.19543389	7.50823723
Group 2	36.02349661	0.186143	8.980136811
degrees of freedom	22.41938732	25.93856131	25.20909620
Effect Size (d)	-9.42857143	-0.03791730	-2.42857143
t Statistic	0.53655672	0.52566083	0.77629804
t Critical	1.71714434	1.70814075	1.70814075
p-value (2-sided)	0.59721280	0.60394739	0.44515665
Power	0.12518694	0.12407001	0.18016512
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	130	135	56

Summary Statistics

	Total Phosphorus	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DST-MC3	14	100%	0.047	0.255	0.087	0.071	0.055	0.629
Group 2	DST-MC4	14	100%	0.0410	0.143	0.078	0.064	0.036	0.462

Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC5
Snow melt	2010-11	
Rain	2011-12	

Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC6
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison

Group 2 vs Group 1

Analyte

Total Phosphorus

SW Standard

None

GW Standard

None

Standard Type

None

Alpha

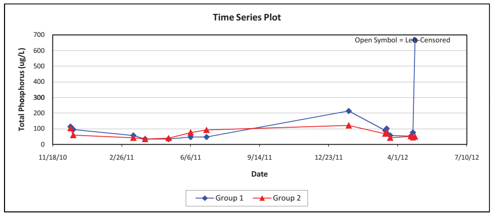
0.05

Mean % Difference (robust ROS)

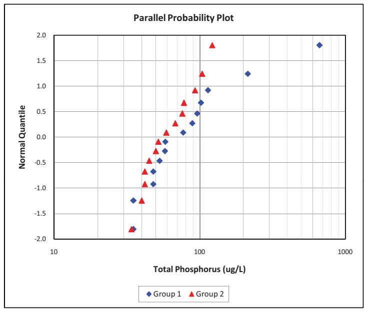
46.50246305

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	14	14
Count (nondetects)	0	0
S	15	-6
VarS	332	333
Trend	Increasing	None
p-value	0.22102508	0.39199023



Parallel Probability Plot

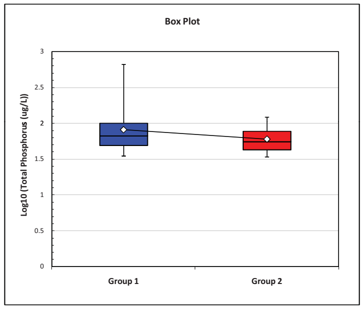


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.02629973	0.58639402
p-value (L)	0.19359528	0.68713635

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	120.83333333	1.90972426	16.00000000
Group 2	64.64285714	1.778312042	13
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	163.29155667	0.33960318	8.57994083
Group 2	26.78290828	0.171060039	7.871565185
degrees of freedom	13.69895169	19.19773371	25.80930325
Effect Size (d)	-56.19047619	-0.13141222	-3.00000000
t Statistic	1.27056959	1.29308732	0.96403408
t Critical	1.77093338	1.72913279	1.70814075
p-value (2-sided)	0.22796257	0.21233155	0.34464271
Power	0.31259108	0.33385894	0.23187455
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	14	13	32

Summary Statistics

	Total Phosphorus	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DST-MC5	14	100%	0.035	0.665	0.121	0.068	0.163	1.351
Group 2	DST-MC6	14	100%	0.0340	0.122	0.065	0.056	0.027	0.414

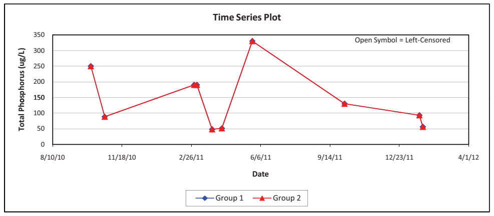
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-MC1
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Total Phosphorus
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
0

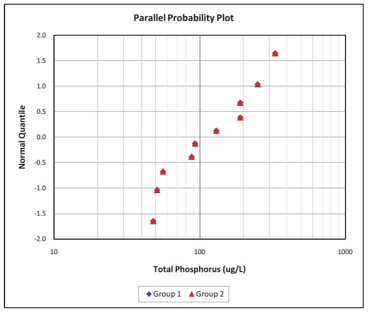
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-MC1
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	10	10
Count (nondetects)	0	0
S	-10	-10
VarS	124	124
Trend	Decreasing	Decreasing
p-value	0.20948086	0.20948086



Parallel Probability Plot

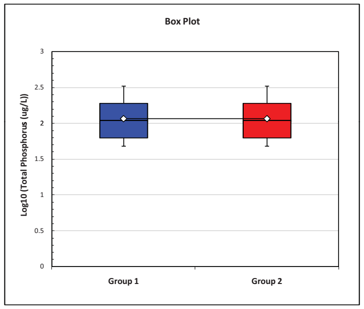


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.45631269	0.45631269
p-value (L)	0.89003466	0.89003466

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	142.60000000	2.06378696	10.50000000
Group 2	142.6	2.063786956	10.5
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	95.21111046	0.29991157	6.03692343
Group 2	95.21111046	0.299911569	6.036923425
degrees of freedom	18.00000000	18.00000000	18.00000000
Effect Size (d)	0.00000000	0.00000000	0.00000000
t Statistic	0.00000000	0.00000000	0.00000000
t Critical	1.73406359	1.73406359	1.73406359
p-value (2-sided)	1.00000000	1.00000000	1.00000000
Power	0.05000000	0.05000000	0.05000000
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	>300	>300	>300

Summary Statistics

	Total Phosphorus	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DSC-MC1	10	100%	0.048	0.33	0.143	0.112	0.095	0.668
Group 2	DSC-MC1	10	100%	0.0480	0.330	0.143	0.112	0.095	0.668

Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-TC1
Snow melt	2010-11	
Rain	2011-12	

Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-TT1
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison

Group 2 vs Group 1

Analyte

Total Phosphorus

SW Standard

None

GW Standard

None

Standard Type

None

Alpha

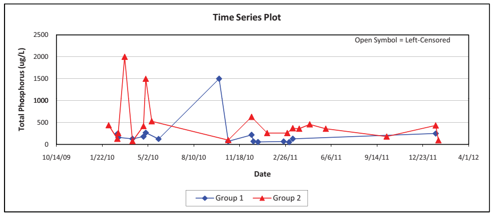
0.05

Mean % Difference (robust ROS)

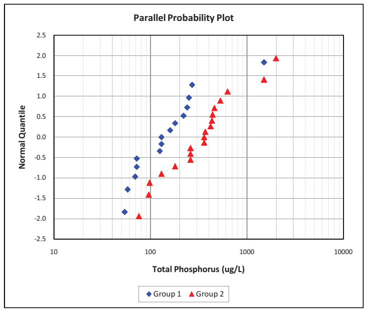
-98.20701788

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	15	19
Count (nondetects)	0	0
S	-31	-19
VarS	406	812
Trend	Decreasing	Decreasing
p-value	0.06834062	0.26384161



Parallel Probability Plot

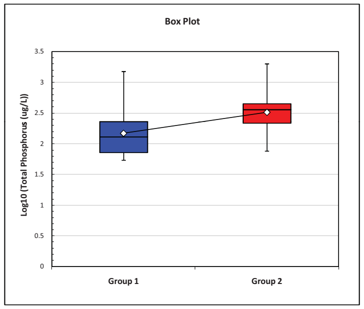


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.04004868	0.38494832
p-value (L)	0.27653007	0.55121188

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	235.35555556	2.17090980	11.93333333
Group 2	466.4912281	2.511382795	21.89473684
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	357.51089375	0.36713726	8.57710130
Group 2	485.0719607	0.370365257	8.834243581
degrees of freedom	31.88421159	30.31371441	30.58476505
Effect Size (d)	231.13567251	0.34047300	9.96140351
t Statistic	-1.59861252	-2.67455614	-3.31825346
t Critical	-1.69551874	-1.69726085	-1.69726085
p-value (2-sided)	0.12038734	0.01216670	0.00244868
Power	0.46171234	0.83188075	0.94225786
Power Analysis			
Beta	0.2	NA	NA
Additional n (each Group)	10	NA	NA

Summary Statistics

	Total Phosphorus	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DSC-TC1	15	100%	0.054	1.5	0.235	0.130	0.358	1.519
Group 2	DSC-TT1	19	100%	0.0760	2.000	0.466	0.360	0.485	1.040

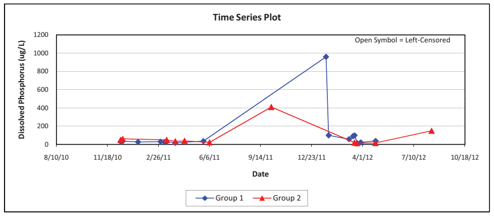
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-MC2
Snow melt	2010-11	
Rain	2011-12	

Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-MC3
Snow melt	2010-11	
Rain	2011-12	

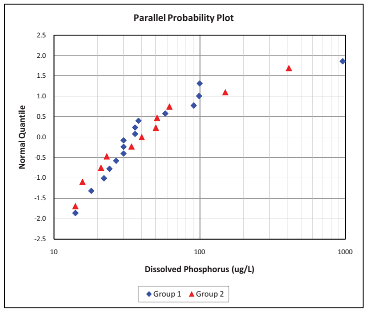
Statistical Comparison
Group 2 vs Group 1
Analyte
Dissolved Phosphorus
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
21.47017926

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	16	11
Count (nondetects)	0	0
S	14	-19
VarS	489	165
Trend	Increasing	None
p-value	0.27823903	0.08056247



Parallel Probability Plot

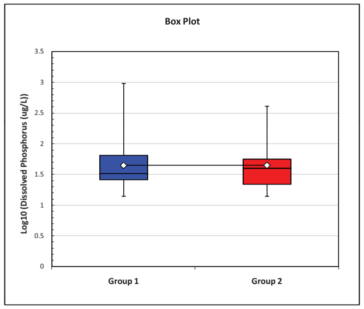


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.00288415	0.24433429
p-value (L)	0.00863596	0.35158611

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	100.79166667	1.64838321	13.90625000
Group 2	79.15151515	1.649672515	14.13636364
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	230.87222296	0.43701011	7.58335623
Group 2	116.10248	0.435606604	8.786611716
degrees of freedom	23.32987897	21.70015764	19.46188406
Effect Size (d)	-21.64015152	0.00128930	0.23011364
t Statistic	0.32057517	-0.00754684	-0.07063620
t Critical	1.71387152	-1.72074287	-1.72913279
p-value (2-sided)	0.75155750	0.99405332	0.94446618
Power	0.08842522	0.05070139	0.05681752
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	>300	>300	>300

Summary Statistics

	Dissolved Phosphorus	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DSC-MC2	16	100%	0.014	0.96	0.101	0.033	0.231	2.291
Group 2	DSC-MC3	11	100%	0.0140	0.410	0.079	0.040	0.116	1.467

Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC1
Snow melt	2010-11	
Rain	2011-12	

Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC2
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison

Group 2 vs Group 1

Analyte

Dissolved Phosphorus

SW Standard

None

GW Standard

None

Standard Type

None

Alpha

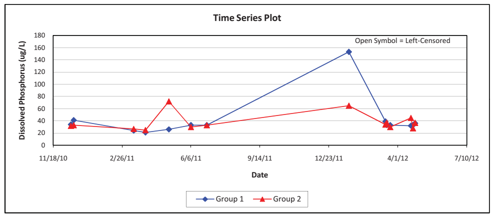
0.05

Mean % Difference (robust ROS)

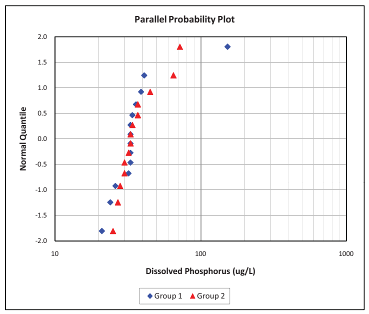
7.530647986

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	14	14
Count (nondetects)	0	0
S	9	16
VarS	317	331
Trend	Increasing	Increasing
p-value	0.32659870	0.20471702



Parallel Probability Plot

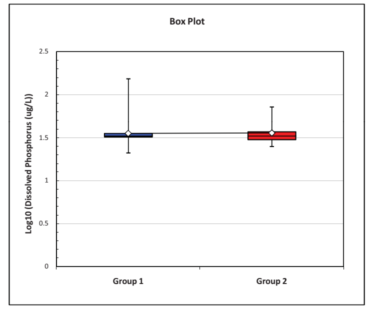


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.00015613	0.01968532
p-value (L)	0.00104734	0.02182284

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	40.78571429	1.54938892	14.28571429
Group 2	37.71428571	1.55458735	14.71428571
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	32.74183062	0.19898815	8.15879489
Group 2	14.01882565	0.135115535	8.459665127
degrees of freedom	17.61142446	22.88600568	25.96597823
Effect Size (d)	-3.07142857	0.00519843	0.42857143
t Statistic	0.32266347	-0.08086773	-0.13643955
t Critical	1.73960672	-1.71714434	-1.70814075
p-value (2-sided)	0.75112822	0.93631290	0.89261187
Power	0.08728262	0.05800447	0.06429578
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	>300	>300	>300

Summary Statistics

	Dissolved Phosphorus	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DST-MC1	14	100%	0.021	0.153	0.041	0.033	0.033	0.803
Group 2	DST-MC2	14	100%	0.0250	0.072	0.038	0.033	0.014	0.372

Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC3
Snow melt	2010-11	
Rain	2011-12	

Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC4
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison

Group 2 vs Group 1

Analyte

Dissolved Phosphorus

SW Standard

None

GW Standard

None

Standard Type

None

Alpha

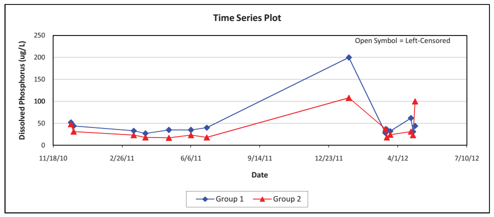
0.05

Mean % Difference (robust ROS)

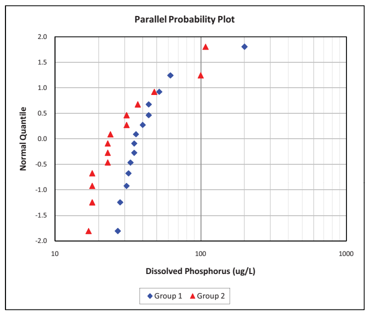
25.75107296

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	14	14
Count (nondetects)	0	0
S	-1	8
VarS	332	325
Trend	Decreasing	Increasing
p-value	0.50000000	0.34897428



Parallel Probability Plot

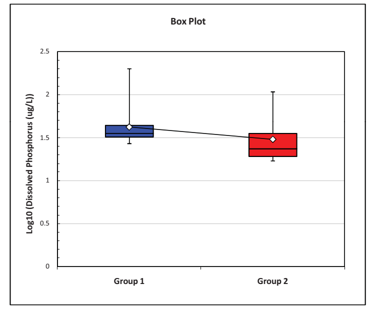


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.00061668	0.00951157
p-value (L)	0.01746549	0.06316553

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	49.92857143	1.62402688	17.92857143
Group 2	37.07142857	1.480517949	11.07142857
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	44.24836248	0.21926743	5.71050699
Group 2	29.66859071	0.26178612	9.059328263
degrees of freedom	22.72359155	25.22395525	21.92213588
Effect Size (d)	-12.85714286	-0.14350893	-6.85714286
t Statistic	0.90300751	1.57244232	2.39585691
t Critical	1.71714434	1.70814075	1.72074287
p-value (2-sided)	0.37676385	0.12893966	0.02647874
Power	0.21214582	0.44657322	0.74651537
Power Analysis			
Beta	0.2	0.2	NA
Additional n (each Group)	38	4	NA

Summary Statistics

	Dissolved Phosphorus	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DST-MC3	14	100%	0.027	0.2	0.050	0.036	0.044	0.886
Group 2	DST-MC4	14	100%	0.0170	0.108	0.037	0.024	0.030	0.800

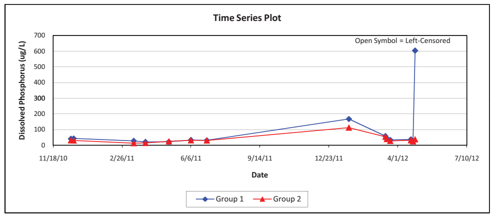
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC5
Snow melt	2010-11	
Rain	2011-12	

Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DST-MC6
Snow melt	2010-11	
Rain	2011-12	

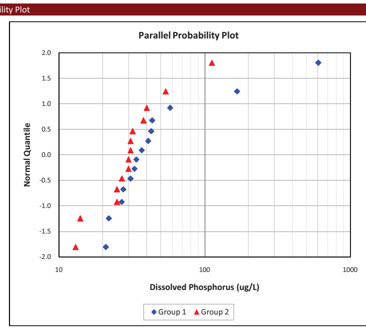
Statistical Comparison
Group 2 vs Group 1
Analyte
Dissolved Phosphorus
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
57.75596073

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	14	14
Count (nondetects)	0	0
S	19	20
VarS	334	331
Trend	Increasing	Increasing
p-value	0.16221185	0.14804368



Parallel Probability Plot

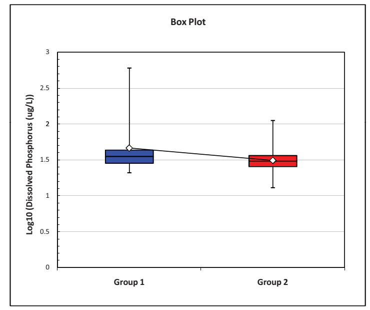


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.00077285	0.12268309
p-value (L)	0.00069460	0.17938625

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	84.88095238	1.66431307	16.67857143
Group 2	35.85714286	1.49234903	12.32142857
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	153.52934000	0.38964434	8.31034375
Group 2	24.16882016	0.227467765	7.809282304
degrees of freedom	13.64392436	20.93880524	25.90009332
Effect Size (d)	-49.02380952	-0.17196404	-4.35714286
t Statistic	1.18022292	1.42610288	1.42960528
t Critical	1.77093338	1.72471822	1.70814075
p-value (2-sided)	0.26077850	0.17006327	0.16571946
Power	0.28242167	0.38415704	0.39144614
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	18	8	8

Summary Statistics

	Dissolved Phosphorus	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DST-MC5	14	100%	0.021	0.603	0.085	0.036	0.154	1.809
Group 2	DST-MC6	14	100%	0.0130	0.112	0.036	0.031	0.024	0.674

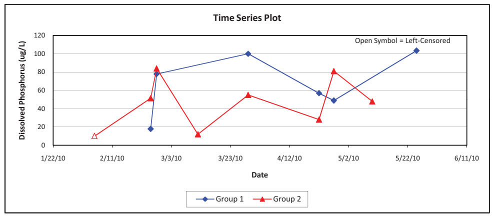
Group 1		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-TC1
Snow melt	2010-11	
Rain	2011-12	

Statistical Comparison
Group 2 vs Group 1
Analyte
Dissolved Phosphorus
SW Standard
None
GW Standard
None
Standard Type
None
Alpha
0.05
Mean % Difference (robust ROS)
35.35758323

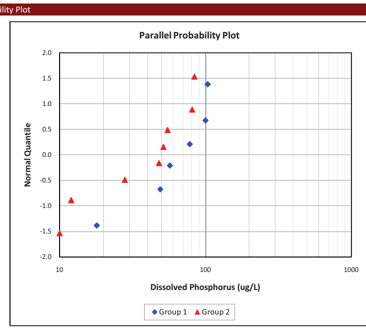
Group 2		
EventType	Year	Site
Mix Rain/Snow	2009-10	DSC-TT1
Snow melt	2010-11	
Rain	2011-12	

Time Series - Mann-Kendall (MK) Trend Analyses

	Group 1	Group 2
Count (n)	6	8
Count (nondetects)	0	1
S	5	6
VarS	28	65
Trend	Increasing	Increasing
p-value	0.22618518	0.26809339



Parallel Probability Plot

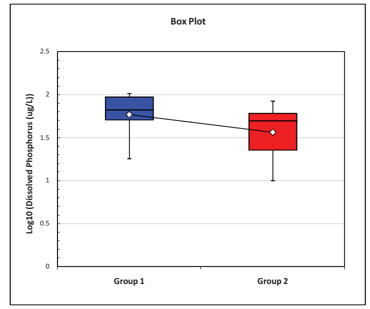


Shapiro-Wilk (SW) and Lilliefors (L) Normality Tests

	Group 1	Group 2
p-value (SW)	0.20411684	0.14212008
p-value (L)	1.00000000	1.00000000

Note: Values should be greater than alpha (0.

Box Plot



t Test (Independent)

	Data	LogData	RkData
Mean (robust ROS)			
Group 1	67.58333333	1.76806307	9.16666667
Group 2	46.08213168	1.561564342	6.25
Delta	0.00000000	0.00000000	0.00000000
Std (robust ROS)			
Group 1	32.75731470	0.28259262	4.16733328
Group 2	28.33876382	0.354948122	3.991061441
degrees of freedom	9.94938069	11.91609219	10.64644681
Effect Size (d)	-21.50120165	-0.20649872	-2.91666667
t Statistic	1.28672230	1.21138551	1.31956742
t Critical	1.83311292	1.79588481	1.81246110
p-value (2-sided)	0.23417333	0.25359626	0.21955915
Power	0.29903987	0.28533889	0.31636537
Power Analysis			
Beta	0.2	0.2	0.2
Additional n (each Group)	7	9	6

Summary Statistics

	Dissolved Phosphorus	n	% dect	min	max	mean	median	STDDEV	CV
Group 1	DSC-TC1	6	100%	0.018	0.1035	0.068	0.068	0.033	0.485
Group 2	DSC-TT1	8	88%	0.0100	0.084	0.046	0.050	0.028	0.615