

MW-5 TCE												
General Statistics												
Total Number of Observations					14	Number of Distinct Observations					7	
Number of Detects					6	Number of Non-Detects					8	
Number of Distinct Detects					6	Number of Distinct Non-Detects					1	
Minimum Detect					0.32	Minimum Non-Detect					0.3	
Maximum Detect					0.47	Maximum Non-Detect					0.3	
Variance Detects					0.00355	Percent Non-Detects					57.14%	
Mean Detects					0.403	SD Detects					0.0596	
Median Detects					0.405	CV Detects					0.148	
Skewness Detects					-0.249	Kurtosis Detects					-1.652	
Mean of Logged Detects					-0.917	SD of Logged Detects					0.151	
Normal GOF Test on Detects Only												
Shapiro Wilk Test Statistic					0.937	Shapiro Wilk GOF Test						
1% Shapiro Wilk Critical Value					0.713	Detected Data appear Normal at 1% Significance Level						
Lilliefors Test Statistic					0.173	Lilliefors GOF Test						
1% Lilliefors Critical Value					0.373	Detected Data appear Normal at 1% Significance Level						
Detected Data appear Normal at 1% Significance Level												
Note GOF tests may be unreliable for small sample sizes												
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs												
KM Mean					0.344	KM Standard Error of Mean					0.0182	
90KM SD					0.0623	95% KM (BCA) UCL					0.374	
95% KM (t) UCL					0.377	95% KM (Percentile Bootstrap) UCL					0.372	
95% KM (z) UCL					0.374	95% KM Bootstrap t UCL					0.374	
90% KM Chebyshev UCL					0.399	95% KM Chebyshev UCL					0.424	
97.5% KM Chebyshev UCL					0.458	99% KM Chebyshev UCL					0.526	
Gamma GOF Tests on Detected Observations Only												
A-D Test Statistic					0.284	Anderson-Darling GOF Test						
5% A-D Critical Value					0.697	Detected data appear Gamma Distributed at 5% Significance Level						
K-S Test Statistic					0.198	Kolmogorov-Smirnov GOF						
5% K-S Critical Value					0.332	Detected data appear Gamma Distributed at 5% Significance Level						
Detected data appear Gamma Distributed at 5% Significance Level												
Note GOF tests may be unreliable for small sample sizes												

Gamma Statistics on Detected Data Only												
k hat (MLE)					53.51	k star (bias corrected MLE)					26.87	
Theta hat (MLE)					0.00754	Theta star (bias corrected MLE)					0.015	
nu hat (MLE)					642.1	nu star (bias corrected)					322.4	
Mean (detects)					0.403							
Gamma ROS Statistics using Imputed Non-Detects												
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs												
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)												
For such situations, GROS method may yield incorrect values of UCLs and BTVs												
This is especially true when the sample size is small.												
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates												
Minimum					0.131	Mean					0.302	
Maximum					0.47	Median					0.291	
SD					0.107	CV					0.353	
k hat (MLE)					8.025	k star (bias corrected MLE)					6.353	
Theta hat (MLE)					0.0377	Theta star (bias corrected MLE)					0.0476	
nu hat (MLE)					224.7	nu star (bias corrected)					177.9	
Adjusted Level of Significance (β)					0.0312							
Approximate Chi Square Value (177.89, α)					148	Adjusted Chi Square Value (177.89, β)					144.4	
95% Gamma Approximate UCL					0.363	95% Gamma Adjusted UCL					0.372	
Estimates of Gamma Parameters using KM Estimates												
Mean (KM)					0.344	SD (KM)					0.0623	
Variance (KM)					0.00388	SE of Mean (KM)					0.0182	
k hat (KM)					30.54	k star (KM)					24.04	
nu hat (KM)					855	nu star (KM)					673.1	
theta hat (KM)					0.0113	theta star (KM)					0.0143	
80% gamma percentile (KM)					0.402	90% gamma percentile (KM)					0.437	
95% gamma percentile (KM)					0.467	99% gamma percentile (KM)					0.528	
Gamma Kaplan-Meier (KM) Statistics												
Approximate Chi Square Value (673.14, α)					613.9	Adjusted Chi Square Value (673.14, β)					606.4	
95% KM Approximate Gamma UCL					0.377	95% KM Adjusted Gamma UCL					0.382	
Lognormal GOF Test on Detected Observations Only												

Shapiro Wilk Test Statistic			0.935	Shapiro Wilk GOF Test					
10% Shapiro Wilk Critical Value			0.826	Detected Data appear Lognormal at 10% Significance Level					
Lilliefors Test Statistic			0.186	Lilliefors GOF Test					
10% Lilliefors Critical Value			0.298	Detected Data appear Lognormal at 10% Significance Level					
Detected Data appear Lognormal at 10% Significance Level									
Note GOF tests may be unreliable for small sample sizes									
Lognormal ROS Statistics Using Imputed Non-Detects									
Mean in Original Scale			0.316	Mean in Log Scale				-1.193	
SD in Original Scale			0.092	SD in Log Scale				0.292	
95% t UCL (assumes normality of ROS data)			0.359	95% Percentile Bootstrap UCL				0.355	
95% BCA Bootstrap UCL			0.354	95% Bootstrap t UCL				0.366	
95% H-UCL (Log ROS)			0.369						
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution									
KM Mean (logged)			-1.081	KM Geo Mean				0.339	
KM SD (logged)			0.168	95% Critical H Value (KM-Log)				1.797	
KM Standard Error of Mean (logged)			0.0492	95% H-UCL (KM -Log)				0.374	
KM SD (logged)			0.168	95% Critical H Value (KM-Log)				1.797	
KM Standard Error of Mean (logged)			0.0492						
DL/2 Statistics									
DL/2 Normal				DL/2 Log-Transformed					
Mean in Original Scale			0.259	Mean in Log Scale				-1.477	
SD in Original Scale			0.135	SD in Log Scale				0.512	
95% t UCL (Assumes normality)			0.323	95% H-Stat UCL				0.347	
DL/2 is not a recommended method, provided for comparisons and historical reasons									
Nonparametric Distribution Free UCL Statistics									
Detected Data appear Normal Distributed at 1% Significance Level									
Suggested UCL to Use									
95% KM (t) UCL			0.377						
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.									
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.									
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.									