	A	B	C	D	E	F	G	H	I	J	K	L
1				General UCL Statistics for Data Sets with Non-Detects								
2	User Selected Options											
3			From File	Sheet1.wst								
4			Full Precision	OFF								
5			Confidence Coefficient	95%								
6	mber of Bootstrap Operations			2000								
7												
8												
9	Result_Value (1,3-dichlorobenzene_ug/kg)											
10												
11						General Statistics						
12						Number of Valid Data	21			Number of Detected Data		0
13						Number of Distinct Detected Data	0			Number of Non-Detect Data		21
14										Percent Non-Detects		100.00%
15												
16				Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
17				Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
18	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
19												
20				The data set for variable Result_Value (1,3-dichlorobenzene_ug/kg) was not processed!								
21												
22												
23												
24	Result_Value (1,4-dichlorobenzene_ug/kg)											
25												
26						General Statistics						
27						Number of Valid Data	18			Number of Detected Data		0
28						Number of Distinct Detected Data	0			Number of Non-Detect Data		18
29										Percent Non-Detects		100.00%
30												
31				Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
32				Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
33	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
34												
35				The data set for variable Result_Value (1,4-dichlorobenzene_ug/kg) was not processed!								
36												
37												
38												
39	Result_Value (hexachlorobenzene_ug/kg)											
40												
41						General Statistics						
42						Number of Valid Data	21			Number of Detected Data		9
43						Number of Distinct Detected Data	9			Number of Non-Detect Data		12
44										Percent Non-Detects		57.14%
45												
46				Raw Statistics						Log-transformed Statistics		
47						Minimum Detected	191			Minimum Detected		5.252
48						Maximum Detected	5430			Maximum Detected		8.6
49						Mean of Detected	1021			Mean of Detected		6.33
50						SD of Detected	1668			SD of Detected		0.971
51						Minimum Non-Detect	347			Minimum Non-Detect		5.849
52						Maximum Non-Detect	748			Maximum Non-Detect		6.617
53												
54	Note: Data have multiple DLs - Use of KM Method is recommen									Number treated as Non-Detect		19
55	For all methods (except KM, DL/2, and ROS Methods),									Number treated as Detected		2
56	Observations < Largest ND are treated as NDs									Single DL Non-Detect Percentage		90.48%
57												
58				Warning: There are only 9 Detected Values in this data								
59				Note: It should be noted that even though bootstrap may be performed on this data set								
60				the resulting calculations may not be reliable enough to draw conclusions								
61												
62				It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.								
63												
64												
65						UCL Statistics						
66				Normal Distribution Test with Detected Values Only						Lognormal Distribution Test with Detected Values Only		
67						Shapiro Wilk Test Statistic	0.511			Shapiro Wilk Test Statistic		0.847
68						5% Shapiro Wilk Critical Value	0.829			5% Shapiro Wilk Critical Value		0.829
69				Data not Normal at 5% Significance Level						Data appear Lognormal at 5% Significance Level		
70												
71				Assuming Normal Distribution						Assuming Lognormal Distribution		
72						DL/2 Substitution Method				DL/2 Substitution Method		
73						Mean	568			Mean		5.786

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	A	B	C	D	E	F	G	H	I	J	K	L
74					SD	1131					SD	0.816
75					95% DL/2 (t) UCL	993.5					95% H-Stat (DL/2) UCL	694.3
76												
77				Maximum Likelihood Estimate(MLE) Method		N/A					Log ROS Method	
78				**MLE method failed to converge properly**							Mean in Log Scale	5.842
79											SD in Log Scale	0.757
80											Mean in Original Scale	575.3
81											SD in Original Scale	1127
82											95% t UCL	999.4
83											95% Percentile Bootstrap UCL	1028
84											95% BCA Bootstrap UCL	1355
85											95% H-UCL	672
86												
87				**Gamma Distribution Test with Detected Values Only**					**Data Distribution Test with Detected Values Only**			
88					k star (bias corrected)	0.719			**Data appear Lognormal at 5% Significance Level**			
89					Theta Star	1420						
90					nu star	12.94						
91												
92					A-D Test Statistic	1.166			**Nonparametric Statistics**			
93					5% A-D Critical Value	0.745			Kaplan-Meier (KM) Method			
94					K-S Test Statistic	0.745					Mean	600
95					5% K-S Critical Value	0.287					SD	1094
96				**Data not Gamma Distributed at 5% Significance Level**							SE of Mean	254.5
97											95% KM (t) UCL	1039
98				**Assuming Gamma Distribution**							95% KM (z) UCL	1019
99				Gamma ROS Statistics using Extrapolated Data							95% KM (jackknife) UCL	1026
100					Minimum	1E-06					95% KM (bootstrap t) UCL	2652
101					Maximum	5430					95% KM (BCA) UCL	1097
102					Mean	471.7					95% KM (Percentile Bootstrap) UCL	1088
103					Median	237.7					95% KM (Chebyshev) UCL	1709
104					SD	1165					97.5% KM (Chebyshev) UCL	2189
105					k star	0.119					99% KM (Chebyshev) UCL	3132
106					Theta star	3955						
107					Nu star	5.009			**Potential UCLs to Use**			
108					AppChi2	1.157					95% KM (t) UCL	1039
109				95% Gamma Approximate UCL (Use when n >= 40)		2043					95% KM (% Bootstrap) UCL	1088
110				95% Adjusted Gamma UCL (Use when n < 40)		2310						
111	**Note: DL/2 is not a recommended method.**											
112												
113	**ote: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UC**											
114	**These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006)**											
115				**For additional insight, the user may want to consult a statistician.**								
116												
117												
118	**Result_Value (hexachlorobutadiene_ug/kg)**											
119												
120					**General Statistics**							
121					Number of Valid Data	18					Number of Detected Data	0
122					Number of Distinct Detected Data	0					Number of Non-Detect Data	18
123											Percent Non-Detects	100.00%
124												
125				**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**								
126				**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**								
127	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**											
128												
129				**The data set for variable Result_Value (hexachlorobutadiene_ug/kg) was not processed!**								
130												
131												
132												
133	**Result_Value (lead_mg/kg)**											
134												
135					**General Statistics**							
136					Number of Valid Observations	18					Number of Distinct Observations	18
137												
138					**Raw Statistics**				**Log-transformed Statistics**			
139					Minimum	0.092					Minimum of Log Data	-2.386
140					Maximum	0.518					Maximum of Log Data	-0.658
141					Mean	0.178					Mean of log Data	-1.86
142					Geometric Mean	0.156					SD of log Data	0.494
143					Median	0.126						
144					SD	0.112						
145					Std. Error of Mean	0.0264						
146					Coefficient of Variation	0.629						

	A	B	C	D	E	F	G	H	I	J	K	L
147					Skewness	2.011						
148												
149					Relevant UCL Statistics							
150			Normal Distribution Test						Lognormal Distribution Test			
151					Shapiro Wilk Test Statistic	0.735				Shapiro Wilk Test Statistic		0.859
152					Shapiro Wilk Critical Value	0.897				Shapiro Wilk Critical Value		0.897
153			Data not Normal at 5% Significance Level						Data not Lognormal at 5% Significance Level			
154												
155			Assuming Normal Distribution						Assuming Lognormal Distribution			
156					95% Student's-t UCL	0.224				95% H-UCL		0.224
157			95% UCLs (Adjusted for Skewness)							95% Chebyshev (MVUE) UCL		0.266
158					95% Adjusted-CLT UCL (Chen-1995)	0.235				97.5% Chebyshev (MVUE) UCL		0.306
159					95% Modified-t UCL (Johnson-1978)	0.226				99% Chebyshev (MVUE) UCL		0.384
160												
161			Gamma Distribution Test						Data Distribution			
162					k star (bias corrected)	3.27			Data do not follow a Discernable Distribution (0.05)			
163					Theta Star	0.0545						
164					MLE of Mean	0.178						
165					MLE of Standard Deviation	0.0985						
166					nu star	117.7						
167					Approximate Chi Square Value (.05)	93.67			Nonparametric Statistics			
168					Adjusted Level of Significance	0.0357				95% CLT UCL		0.221
169					Adjusted Chi Square Value	91.61				95% Jackknife UCL		0.224
170										95% Standard Bootstrap UCL		0.219
171					Anderson-Darling Test Statistic	1.296				95% Bootstrap-t UCL		0.263
172					Anderson-Darling 5% Critical Value	0.743				95% Hall's Bootstrap UCL		0.251
173					Kolmogorov-Smirnov Test Statistic	0.232				95% Percentile Bootstrap UCL		0.221
174					Kolmogorov-Smirnov 5% Critical Value	0.205				95% BCA Bootstrap UCL		0.235
175			Data not Gamma Distributed at 5% Significance Level							95% Chebyshev(Mean, Sd) UCL		0.293
176										97.5% Chebyshev(Mean, Sd) UCL		0.343
177			Assuming Gamma Distribution							99% Chebyshev(Mean, Sd) UCL		0.441
178			95% Approximate Gamma UCL (Use when n >= 40)			0.224						
179			95% Adjusted Gamma UCL (Use when n < 40)			0.229						
180												
181			Potential UCL to Use							Use 95% Student's-t UCL		0.224
182										or 95% Modified-t UCL		0.226
183												
184	ote: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UC											
185	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
186	and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.											
187												
188												
189	Result_Value (mercury_mg/kg)											
190												
191					General Statistics							
192					Number of Valid Observations	21				Number of Distinct Observations		16
193												
194			Raw Statistics						Log-transformed Statistics			
195					Minimum	0.009				Minimum of Log Data		-4.711
196					Maximum	0.083				Maximum of Log Data		-2.489
197					Mean	0.0502				Mean of log Data		-3.073
198					Geometric Mean	0.0463				SD of log Data		0.475
199					Median	0.051						
200					SD	0.0171						
201					Std. Error of Mean	0.00373						
202					Coefficient of Variation	0.34						
203					Skewness	-0.416						
204												
205					Relevant UCL Statistics							
206			Normal Distribution Test						Lognormal Distribution Test			
207					Shapiro Wilk Test Statistic	0.979				Shapiro Wilk Test Statistic		0.804
208					Shapiro Wilk Critical Value	0.908				Shapiro Wilk Critical Value		0.908
209			Data appear Normal at 5% Significance Level						Data not Lognormal at 5% Significance Level			
210												
211			Assuming Normal Distribution						Assuming Lognormal Distribution			
212					95% Student's-t UCL	0.0567				95% H-UCL		0.0639
213			95% UCLs (Adjusted for Skewness)							95% Chebyshev (MVUE) UCL		0.0756
214					95% Adjusted-CLT UCL (Chen-1995)	0.056				97.5% Chebyshev (MVUE) UCL		0.086
215					95% Modified-t UCL (Johnson-1978)	0.0566				99% Chebyshev (MVUE) UCL		0.106
216												
217			Gamma Distribution Test						Data Distribution			
218					k star (bias corrected)	5.406			Data appear Normal at 5% Significance Level			
219					Theta Star	0.00929						

	A	B	C	D	E	F	G	H	I	J	K	L
220					MLE of Mean	0.0502						
221					MLE of Standard Deviation	0.0216						
222					nu star	227.1						
223					Approximate Chi Square Value (.05)	193.2			Nonparametric Statistics			
224					Adjusted Level of Significance	0.0383					95% CLT UCL	0.0564
225					Adjusted Chi Square Value	190.8					95% Jackknife UCL	0.0567
226											95% Standard Bootstrap UCL	0.056
227					Anderson-Darling Test Statistic	0.712					95% Bootstrap-t UCL	0.0567
228					Anderson-Darling 5% Critical Value	0.745					95% Hall's Bootstrap UCL	0.0562
229					Kolmogorov-Smirnov Test Statistic	0.208					95% Percentile Bootstrap UCL	0.056
230					Kolmogorov-Smirnov 5% Critical Value	0.19					95% BCA Bootstrap UCL	0.0559
231	Data follow Appr. Gamma Distribution at 5% Significance Leve										95% Chebyshev(Mean, Sd) UCL	0.0665
232											97.5% Chebyshev(Mean, Sd) UCL	0.0735
233			Assuming Gamma Distribution								99% Chebyshev(Mean, Sd) UCL	0.0874
234	95% Approximate Gamma UCL (Use when n >= 40)					0.059						
235		95% Adjusted Gamma UCL (Use when n < 40)				0.0598						
236												
237			Potential UCL to Use								Use 95% Student's-t UCL	0.0567
238												
239	ote: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UC											
240	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
241	and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.											
242												
243	Note: For highly negative-skewed data, confidence limits											
244	(e.g., Chen, Johnson, Lognormal, and Gamma) may not be											
245	reliable. Chen's and Johnson's methods provide											
246	adjustments for positvely skewed data sets.											
247												
248												
249	Result_Value (total dioxin/furan teq 1998 (avian) (u = 1/2)_ng/kg)											
250												
251					General Statistics							
252					Number of Valid Observations	19					Number of Distinct Observations	19
253												
254					Raw Statistics				Log-transformed Statistics			
255					Minimum	2.513					Minimum of Log Data	0.921
256					Maximum	44.76					Maximum of Log Data	3.801
257					Mean	18.42					Mean of log Data	2.774
258					Geometric Mean	16.02					SD of log Data	0.605
259					Median	17.53						
260					SD	9.218						
261					Std. Error of Mean	2.115						
262					Coefficient of Variation	0.5						
263					Skewness	1.142						
264												
265					Relevant UCL Statistics							
266			Normal Distribution Test						Lognormal Distribution Test			
267					Shapiro Wilk Test Statistic	0.926					Shapiro Wilk Test Statistic	0.885
268					Shapiro Wilk Critical Value	0.901					Shapiro Wilk Critical Value	0.901
269			Data appear Normal at 5% Significance Level						Data not Lognormal at 5% Significance Level			
270												
271			Assuming Normal Distribution						Assuming Lognormal Distribution			
272					95% Student's-t UCL	22.09					95% H-UCL	26.02
273			95% UCLs (Adjusted for Skewness)								95% Chebyshev (MVUE) UCL	31.13
274					95% Adjusted-CLT UCL (Chen-1995)	22.5					97.5% Chebyshev (MVUE) UCL	36.36
275					95% Modified-t UCL (Johnson-1978)	22.18					99% Chebyshev (MVUE) UCL	46.64
276												
277			Gamma Distribution Test						Data Distribution			
278					k star (bias corrected)	3.184			Data appear Normal at 5% Significance Level			
279					Theta Star	5.786						
280					MLE of Mean	18.42						
281					MLE of Standard Deviation	10.33						
282					nu star	121						
283					Approximate Chi Square Value (.05)	96.6			Nonparametric Statistics			
284					Adjusted Level of Significance	0.0369					95% CLT UCL	21.9
285					Adjusted Chi Square Value	94.69					95% Jackknife UCL	22.09
286											95% Standard Bootstrap UCL	21.71
287					Anderson-Darling Test Statistic	0.427					95% Bootstrap-t UCL	23
288					Anderson-Darling 5% Critical Value	0.746					95% Hall's Bootstrap UCL	24.37
289					Kolmogorov-Smirnov Test Statistic	0.137					95% Percentile Bootstrap UCL	21.92
290					Kolmogorov-Smirnov 5% Critical Value	0.199					95% BCA Bootstrap UCL	22.64
291			Data appear Gamma Distributed at 5% Significance Level								95% Chebyshev(Mean, Sd) UCL	27.64
292											97.5% Chebyshev(Mean, Sd) UCL	31.63

	A	B	C	D	E	F	G	H	I	J	K	L
293			Assuming Gamma Distribution							99% Chebyshev(Mean, Sd) UCL		39.47
294		95% Approximate Gamma UCL (Use when n >= 40)				23.08						
295			95% Adjusted Gamma UCL (Use when n < 40)			23.54						
296												
297			Potential UCL to Use							Use 95% Student's-t UCL		22.09
298												
299	ote: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UC											
300	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
301	and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.											
302												
303												
304	Result_Value (total pah (16) (u = 1/2)_ug/kg)											
305												
306					General Statistics							
307					Number of Valid Data	18				Number of Detected Data		5
308					Number of Distinct Detected Data	5				Number of Non-Detect Data		13
309										Percent Non-Detects		72.22%
310												
311					Raw Statistics					Log-transformed Statistics		
312					Minimum Detected	60.91				Minimum Detected		4.109
313					Maximum Detected	123.8				Maximum Detected		4.819
314					Mean of Detected	77.22				Mean of Detected		4.308
315					SD of Detected	26.45				SD of Detected		0.294
316					Minimum Non-Detect	6.93				Minimum Non-Detect		1.936
317					Maximum Non-Detect	14.8				Maximum Non-Detect		2.695
318												
319	Note: Data have multiple DLs - Use of KM Method is recommen									Number treated as Non-Detect		13
320	For all methods (except KM, DL/2, and ROS Methods),									Number treated as Detected		5
321	Observations < Largest ND are treated as NDs									Single DL Non-Detect Percentage		72.22%
322												
323					Warning: There are only 5 Detected Values in this data							
324					Note: It should be noted that even though bootstrap may be performed on this data set							
325					the resulting calculations may not be reliable enough to draw conclusions							
326												
327					It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.							
328												
329												
330					UCL Statistics							
331					Normal Distribution Test with Detected Values Only					Lognormal Distribution Test with Detected Values Only		
332					Shapiro Wilk Test Statistic	0.694				Shapiro Wilk Test Statistic		0.741
333					5% Shapiro Wilk Critical Value	0.762				5% Shapiro Wilk Critical Value		0.762
334					Data not Normal at 5% Significance Level					Data not Lognormal at 5% Significance Level		
335												
336					Assuming Normal Distribution					Assuming Lognormal Distribution		
337					DL/2 Substitution Method					DL/2 Substitution Method		
338					Mean	25.88				Mean		2.473
339					SD	35.22				SD		1.213
340					95% DL/2 (t) UCL	40.32				95% H-Stat (DL/2) UCL		59.09
341												
342					Maximum Likelihood Estimate(MLE) Method	N/A				Log ROS Method		
343					MLE yields a negative mean					Mean in Log Scale		3.525
344										SD in Log Scale		0.538
345										Mean in Original Scale		39.83
346										SD in Original Scale		27.32
347										95% t UCL		51.03
348										95% Percentile Bootstrap UCL		51.13
349										95% BCA Bootstrap UCL		54.45
350										95% H-UCL		51.36
351												
352					Gamma Distribution Test with Detected Values Only					Data Distribution Test with Detected Values Only		
353					k star (bias corrected)	5.409				Data do not follow a Discernable Distribution (0.05)		
354					Theta Star	14.28						
355					nu star	54.09						
356												
357					A-D Test Statistic	0.794				Nonparametric Statistics		
358					5% A-D Critical Value	0.679				Kaplan-Meier (KM) Method		
359					K-S Test Statistic	0.679				Mean		65.44
360					5% K-S Critical Value	0.357				SD		14.45
361					Data not Gamma Distributed at 5% Significance Level					SE of Mean		3.808
362										95% KM (t) UCL		72.07
363					Assuming Gamma Distribution					95% KM (z) UCL		71.7
364					Gamma ROS Statistics using Extrapolated Data					95% KM (jackknife) UCL		71.53
365					Minimum	1E-06				95% KM (bootstrap t) UCL		83.69

	A	B	C	D	E	F	G	H	I	J	K	L
366					Maximum	123.8				95% KM (BCA) UCL		76.32
367					Mean	21.45				95% KM (Percentile Bootstrap) UCL		75.92
368					Median	1E-06				95% KM (Chebyshev) UCL		82.04
369					SD	37.83				97.5% KM (Chebyshev) UCL		89.22
370					k star	0.0965				99% KM (Chebyshev) UCL		103.3
371					Theta star	222.4						
372					Nu star	3.473				**Potential UCLs to Use**		
373					AppChi2	0.525				95% KM (t) UCL		72.07
374	95% Gamma Approximate UCL (Use when n >= 40)					141.8				95% KM (% Bootstrap) UCL		75.92
375	95% Adjusted Gamma UCL (Use when n < 40)					172.3						
376	**Note: DL/2 is not a recommended method.**											
377												
378	**ote: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UC**											
379	**These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006)**											
380	**For additional insight, the user may want to consult a statistician.**											
381												
382												
383	**Result_Value (total pcb congener (u = 1/2)_ng/kg)**											
384												
385	**General Statistics**											
386	Number of Valid Observations					21	Number of Distinct Observations					21
387												
388	**Raw Statistics**						**Log-transformed Statistics**					
389	Minimum					228677	Minimum of Log Data					12.34
390	Maximum					1264098	Maximum of Log Data					14.05
391	Mean					676644	Mean of log Data					13.35
392	Geometric Mean					629815	SD of log Data					0.405
393	Median					680864						
394	SD					250421						
395	Std. Error of Mean					54646						
396	Coefficient of Variation					0.37						
397	Skewness					0.508						
398												
399	**Relevant UCL Statistics**											
400	**Normal Distribution Test**						**Lognormal Distribution Test**					
401	Shapiro Wilk Test Statistic					0.967	Shapiro Wilk Test Statistic					0.955
402	Shapiro Wilk Critical Value					0.908	Shapiro Wilk Critical Value					0.908
403	**Data appear Normal at 5% Significance Level**						**Data appear Lognormal at 5% Significance Level**					
404												
405	**Assuming Normal Distribution**						**Assuming Lognormal Distribution**					
406	95% Student's-t UCL					770894	95% H-UCL					812766
407	**95% UCLs (Adjusted for Skewness)**						95% Chebyshev (MVUE) UCL					949862
408	95% Adjusted-CLT UCL (Chen-1995)					773006	97.5% Chebyshev (MVUE) UCL					1066272
409	95% Modified-t UCL (Johnson-1978)					771904	99% Chebyshev (MVUE) UCL					1294936
410												
411	**Gamma Distribution Test**						**Data Distribution**					
412	k star (bias corrected)					6.147	**Data appear Normal at 5% Significance Level**					
413	Theta Star					110083						
414	MLE of Mean					676644						
415	MLE of Standard Deviation					272923						
416	nu star					258.2						
417	Approximate Chi Square Value (.05)					222	**Nonparametric Statistics**					
418	Adjusted Level of Significance					0.0383	95% CLT UCL					766529
419	Adjusted Chi Square Value					219.4	95% Jackknife UCL					770894
420							95% Standard Bootstrap UCL					762692
421	Anderson-Darling Test Statistic					0.284	95% Bootstrap-t UCL					778889
422	Anderson-Darling 5% Critical Value					0.744	95% Hall's Bootstrap UCL					782611
423	Kolmogorov-Smirnov Test Statistic					0.131	95% Percentile Bootstrap UCL					759399
424	Kolmogorov-Smirnov 5% Critical Value					0.19	95% BCA Bootstrap UCL					772942
425	**Data appear Gamma Distributed at 5% Significance Level**						95% Chebyshev(Mean, Sd) UCL					914842
426							97.5% Chebyshev(Mean, Sd) UCL					1017910
427	**Assuming Gamma Distribution**						99% Chebyshev(Mean, Sd) UCL					1220368
428	95% Approximate Gamma UCL (Use when n >= 40)					787015						
429	95% Adjusted Gamma UCL (Use when n < 40)					796255						
430												
431	**Potential UCL to Use**						Use 95% Student's-t UCL					770894
432												
433	**ote: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UC**											
434	**These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)**											
435	**and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.**											
436												
437												
438	**Result_Value (total pcb congener teq 1998 (avian) (u = 1/2)_ng/kg)**											

	A	B	C	D	E	F	G	H	I	J	K	L
439												
440						General Statistics						
441					Number of Valid Observations	21				Number of Distinct Observations		21
442												
443					Raw Statistics					Log-transformed Statistics		
444					Minimum	97.57				Minimum of Log Data		4.581
445					Maximum	782.9				Maximum of Log Data		6.663
446					Mean	378.7				Mean of log Data		5.84
447					Geometric Mean	343.9				SD of log Data		0.474
448					Median	340.8						
449					SD	163.7						
450					Std. Error of Mean	35.73						
451					Coefficient of Variation	0.432						
452					Skewness	0.813						
453												
454						Relevant UCL Statistics						
455					Normal Distribution Test					Lognormal Distribution Test		
456					Shapiro Wilk Test Statistic	0.942				Shapiro Wilk Test Statistic		0.941
457					Shapiro Wilk Critical Value	0.908				Shapiro Wilk Critical Value		0.908
458					Data appear Normal at 5% Significance Level					Data appear Lognormal at 5% Significance Level		
459												
460					Assuming Normal Distribution					Assuming Lognormal Distribution		
461					95% Student's-t UCL	440.3				95% H-UCL		473.9
462					95% UCLs (Adjusted for Skewness)					95% Chebyshev (MVUE) UCL		560.9
463					95% Adjusted-CLT UCL (Chen-1995)	444.2				97.5% Chebyshev (MVUE) UCL		638.1
464					95% Modified-t UCL (Johnson-1978)	441.4				99% Chebyshev (MVUE) UCL		789.7
465												
466					Gamma Distribution Test					Data Distribution		
467					k star (bias corrected)	4.611				Data appear Normal at 5% Significance Level		
468					Theta Star	82.14						
469					MLE of Mean	378.7						
470					MLE of Standard Deviation	176.4						
471					nu star	193.7						
472					Approximate Chi Square Value (.05)	162.5				Nonparametric Statistics		
473					Adjusted Level of Significance	0.0383				95% CLT UCL		437.5
474					Adjusted Chi Square Value	160.3				95% Jackknife UCL		440.3
475										95% Standard Bootstrap UCL		436.1
476					Anderson-Darling Test Statistic	0.313				95% Bootstrap-t UCL		452.3
477					Anderson-Darling 5% Critical Value	0.745				95% Hall's Bootstrap UCL		454.1
478					Kolmogorov-Smirnov Test Statistic	0.115				95% Percentile Bootstrap UCL		438
479					Kolmogorov-Smirnov 5% Critical Value	0.19				95% BCA Bootstrap UCL		441.6
480					Data appear Gamma Distributed at 5% Significance Level					95% Chebyshev(Mean, Sd) UCL		534.4
481										97.5% Chebyshev(Mean, Sd) UCL		601.8
482					Assuming Gamma Distribution					99% Chebyshev(Mean, Sd) UCL		734.2
483					95% Approximate Gamma UCL (Use when n >= 40)	451.4						
484					95% Adjusted Gamma UCL (Use when n < 40)	457.6						
485												
486					Potential UCL to Use					Use 95% Student's-t UCL		440.3
487												
488	ote: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UC											
489	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
490	and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.											
491												
492												
493	Result_Value (total pcb congener teq 2005 (mammal) (u = 1/2)_ng/kg)											
494												
495						General Statistics						
496					Number of Valid Observations	21				Number of Distinct Observations		21
497												
498					Raw Statistics					Log-transformed Statistics		
499					Minimum	8.35				Minimum of Log Data		2.122
500					Maximum	49.2				Maximum of Log Data		3.896
501					Mean	26.38				Mean of log Data		3.179
502					Geometric Mean	24.03				SD of log Data		0.46
503					Median	24.8						
504					SD	11.1						
505					Std. Error of Mean	2.422						
506					Coefficient of Variation	0.421						
507					Skewness	0.412						
508												
509						Relevant UCL Statistics						
510					Normal Distribution Test					Lognormal Distribution Test		
511					Shapiro Wilk Test Statistic	0.97				Shapiro Wilk Test Statistic		0.971

	A	B	C	D	E	F	G	H	I	J	K	L
512					Shapiro Wilk Critical Value	0.908					Shapiro Wilk Critical Value	0.908
513	**Data appear Normal at 5% Significance Level**						**Data appear Lognormal at 5% Significance Level**					
514												
515	**Assuming Normal Distribution**						**Assuming Lognormal Distribution**					
516					95% Student's-t UCL	30.55					95% H-UCL	32.67
517	**95% UCLs (Adjusted for Skewness)**										95% Chebyshev (MVUE) UCL	38.58
518					95% Adjusted-CLT UCL (Chen-1995)	30.59					97.5% Chebyshev (MVUE) UCL	43.77
519					95% Modified-t UCL (Johnson-1978)	30.59					99% Chebyshev (MVUE) UCL	53.98
520												
521	**Gamma Distribution Test**						**Data Distribution**					
522					k star (bias corrected)	4.767	**Data appear Normal at 5% Significance Level**					
523					Theta Star	5.533						
524					MLE of Mean	26.38						
525					MLE of Standard Deviation	12.08						
526					nu star	200.2						
527					Approximate Chi Square Value (.05)	168.5	**Nonparametric Statistics**					
528					Adjusted Level of Significance	0.0383					95% CLT UCL	30.36
529					Adjusted Chi Square Value	166.3					95% Jackknife UCL	30.55
530											95% Standard Bootstrap UCL	30.27
531					Anderson-Darling Test Statistic	0.155					95% Bootstrap-t UCL	30.87
532					Anderson-Darling 5% Critical Value	0.745					95% Hall's Bootstrap UCL	30.62
533					Kolmogorov-Smirnov Test Statistic	0.107					95% Percentile Bootstrap UCL	30.48
534					Kolmogorov-Smirnov 5% Critical Value	0.19					95% BCA Bootstrap UCL	30.39
535	**Data appear Gamma Distributed at 5% Significance Level**										95% Chebyshev(Mean, Sd) UCL	36.93
536											97.5% Chebyshev(Mean, Sd) UCL	41.5
537	**Assuming Gamma Distribution**										99% Chebyshev(Mean, Sd) UCL	50.48
538	95% Approximate Gamma UCL (Use when n >= 40)					31.35						
539	95% Adjusted Gamma UCL (Use when n < 40)					31.77						
540												
541	**Potential UCL to Use**										Use 95% Student's-t UCL	30.55
542												
543	**ote: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UC**											
544	**These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)**											
545	**and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.**											
546												