

```

MEANS TABLES=Temperatue Turbidity Depthm Velocity DissolvedOxygen Total_Nitrate Total_
Phosphate
    pH_Level Distance Conductivity BY Stream
/CELLS=MEAN STDDEV
/STATISTICS ANOVA LINEARITY.

```

Means

Notes

Output Created		10-JUL-2024 02:37:05
Comments		
Input	Data	D:\Works\Godiva\Data Model Final.sav
	Active Dataset	DataSet1
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	Split File	<none>
	N of Rows in Working Data File	9
Missing Value Handling	Definition of Missing	For each dependent variable in a table, user-defined missing values for the dependent and all grouping variables are treated as missing.
	Cases Used	Cases used for each table have no missing values in any independent variable, and not all dependent variables have missing values.
Syntax		MEANS TABLES=Temperatue Turbidity Depthm Velocity DissolvedOxygen Total_Nitrate Total_Phosphate pH_Level Distance Conductivity BY Stream /CELLS=MEAN STDDEV /STATISTICS ANOVA LINEARITY.
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.37

Case Processing Summary

	Included		Cases Excluded		Total	
	N	Percent	N	Percent	N	Percent
Temperatue * Stream	9	100.0%	0	0.0%	9	100.0%
Turbidity * Stream	9	100.0%	0	0.0%	9	100.0%
Depth(m) * Stream	9	100.0%	0	0.0%	9	100.0%
Velocity * Stream	9	100.0%	0	0.0%	9	100.0%
Dissolved Oxygen(%) * Stream	9	100.0%	0	0.0%	9	100.0%
Total Nitrate * Stream	9	100.0%	0	0.0%	9	100.0%
Total Phosphate * Stream	9	100.0%	0	0.0%	9	100.0%
pH Level * Stream	9	100.0%	0	0.0%	9	100.0%
Distance * Stream	9	100.0%	0	0.0%	9	100.0%
Conductivity * Stream	9	100.0%	0	0.0%	9	100.0%

Report

Stream		Temperatue	Turbidity	Depth(m)	Velocity
UPSTREAM	Mean	31.70000	35.36667	.50000	.43100
	Std. Deviation	.700000	18.218763	.151327	.008544
MIDSTREAM	Mean	27.86667	292.20000	.62667	.36000
	Std. Deviation	.251661	223.108315	.028868	.020000
DOWNSTREAM	Mean	31.90000	17.42667	1.03000	.52797
	Std. Deviation	2.535744	13.981421	.599250	.047009
Total	Mean	30.48889	114.99778	.71889	.43966
	Std. Deviation	2.370888	174.067170	.391358	.077477

Report

Stream		Dissolved Oxygen(%)	Total Nitrate	Total Phosphate	pH Level
UPSTREAM	Mean	97.83333	7.067	1.1000	7.79000
	Std. Deviation	1.274101	.0577	.82614	.085440
MIDSTREAM	Mean	81.70000	3.100	1.1667	7.60000
	Std. Deviation	37.513331	.1000	.27538	.100000
DOWNSTREAM	Mean	38.76667	.967	2.4200	7.43000
	Std. Deviation	37.584084	.1155	.90205	.445758
Total	Mean	72.76667	3.711	1.5622	7.60667
	Std. Deviation	37.475492	2.6821	.89873	.279866

Report

Stream		Distance	Conductivity
UPSTREAM	Mean	20.81000	151.96667
	Std. Deviation	2.245462	18.986662
MIDSTREAM	Mean	11.24333	140.00000
	Std. Deviation	.456107	46.349218
DOWNSTREAM	Mean	15.63667	165.83333
	Std. Deviation	3.171519	72.274085
Total	Mean	15.89667	152.60000
	Std. Deviation	4.585346	45.369896

ANOVA Table

			Sum of Squares	df
Temperatue * Stream	Between Groups	(Combined)	31.002	2
		Linearity	.060	1
		Deviation from Linearity	30.942	1
	Within Groups		13.967	6
	Total		44.969	8
Turbidity * Stream	Between Groups	(Combined)	141785.589	2
		Linearity	482.765	1
		Deviation from Linearity	141302.824	1
	Within Groups		100609.447	6
	Total		242395.036	8
Depth(m) * Stream	Between Groups	(Combined)	.460	2
		Linearity	.421	1
		Deviation from Linearity	.038	1
	Within Groups		.766	6
	Total		1.225	8
Velocity * Stream	Between Groups	(Combined)	.043	2
		Linearity	.014	1
		Deviation from Linearity	.029	1
	Within Groups		.005	6
	Total		.048	8
Dissolved Oxygen(%) * Stream	Between Groups	(Combined)	5592.427	2
		Linearity	5233.307	1
		Deviation from Linearity	359.120	1
	Within Groups		5642.873	6
	Total		11235.300	8

ANOVA Table

			Mean Square	F
Temperatue * Stream	Between Groups	(Combined)	15.501	6.659
		Linearity	.060	.026
		Deviation from Linearity	30.942	13.293
	Within Groups		2.328	
	Total			
Turbidity * Stream	Between Groups	(Combined)	70892.795	4.228
		Linearity	482.765	.029
		Deviation from Linearity	141302.824	8.427
	Within Groups		16768.241	
	Total			
Depth(m) * Stream	Between Groups	(Combined)	.230	1.801
		Linearity	.421	3.302
		Deviation from Linearity	.038	.300
	Within Groups		.128	
	Total			
Velocity * Stream	Between Groups	(Combined)	.021	23.850
		Linearity	.014	15.771
		Deviation from Linearity	.029	31.928
	Within Groups		.001	
	Total			
Dissolved Oxygen(%) * Stream	Between Groups	(Combined)	2796.213	2.973
		Linearity	5233.307	5.565
		Deviation from Linearity	359.120	.382
	Within Groups		940.479	
	Total			

ANOVA Table

			Sig.
Temperatue * Stream	Between Groups	(Combined)	.030
		Linearity	.878
		Deviation from Linearity	.011
	Within Groups		
	Total		
Turbidity * Stream	Between Groups	(Combined)	.072
		Linearity	.871
		Deviation from Linearity	.027
	Within Groups		
	Total		
Depth(m) * Stream	Between Groups	(Combined)	.244
		Linearity	.119
		Deviation from Linearity	.604
	Within Groups		
	Total		
Velocity * Stream	Between Groups	(Combined)	.001
		Linearity	.007
		Deviation from Linearity	.001
	Within Groups		
	Total		
Dissolved Oxygen(%) * Stream	Between Groups	(Combined)	.127
		Linearity	.056
		Deviation from Linearity	.559
	Within Groups		
	Total		

ANOVA Table

			Sum of Squares	df
Total Nitrate * Stream	Between Groups	(Combined)	57.496	2
		Linearity	55.815	1
		Deviation from Linearity	1.681	1
	Within Groups		.053	6
	Total		57.549	8
Total Phosphate * Stream	Between Groups	(Combined)	3.318	2
		Linearity	2.614	1
		Deviation from Linearity	.704	1
	Within Groups		3.144	6
	Total		6.462	8
pH Level * Stream	Between Groups	(Combined)	.195	2
		Linearity	.194	1
		Deviation from Linearity	.000	1
	Within Groups		.432	6
	Total		.627	8
Distance * Stream	Between Groups	(Combined)	137.586	2
		Linearity	40.145	1
		Deviation from Linearity	97.441	1
	Within Groups		30.617	6
	Total		168.203	8
Conductivity * Stream	Between Groups	(Combined)	1002.847	2
		Linearity	288.427	1
		Deviation from Linearity	714.420	1
	Within Groups		15464.573	6
	Total		16467.420	8

ANOVA Table

			Mean Square	F
Total Nitrate * Stream	Between Groups	(Combined)	28.748	3234.125
		Linearity	55.815	6279.187
		Deviation from Linearity	1.681	189.062
	Within Groups		.009	
	Total			
Total Phosphate * Stream	Between Groups	(Combined)	1.659	3.166
		Linearity	2.614	4.988
		Deviation from Linearity	.704	1.344
	Within Groups		.524	
	Total			
pH Level * Stream	Between Groups	(Combined)	.097	1.351
		Linearity	.194	2.700
		Deviation from Linearity	.000	.003
	Within Groups		.072	
	Total			
Distance * Stream	Between Groups	(Combined)	68.793	13.481
		Linearity	40.145	7.867
		Deviation from Linearity	97.441	19.095
	Within Groups		5.103	
	Total			
Conductivity * Stream	Between Groups	(Combined)	501.423	.195
		Linearity	288.427	.112
		Deviation from Linearity	714.420	.277
	Within Groups		2577.429	
	Total			

ANOVA Table

			Sig.
Total Nitrate * Stream	Between Groups	(Combined)	.000
		Linearity	.000
		Deviation from Linearity	.000
	Within Groups		
	Total		
Total Phosphate * Stream	Between Groups	(Combined)	.115
		Linearity	.067
		Deviation from Linearity	.290
	Within Groups		
	Total		
pH Level * Stream	Between Groups	(Combined)	.328
		Linearity	.151
		Deviation from Linearity	.960
	Within Groups		
	Total		
Distance * Stream	Between Groups	(Combined)	.006
		Linearity	.031
		Deviation from Linearity	.005
	Within Groups		
	Total		
Conductivity * Stream	Between Groups	(Combined)	.828
		Linearity	.749
		Deviation from Linearity	.617
	Within Groups		
	Total		

Measures of Association

	R	R Squared	Eta	Eta Squared
Temperatue * Stream	.037	.001	.830	.689
Turbidity * Stream	-.045	.002	.765	.585
Depth(m) * Stream	.586	.344	.612	.375
Velocity * Stream	.542	.294	.942	.888
Dissolved Oxygen(%) * Stream	-.682	.466	.706	.498
Total Nitrate * Stream	-.985	.970	1.000	.999
Total Phosphate * Stream	.636	.404	.717	.513
pH Level * Stream	-.557	.310	.557	.311
Distance * Stream	-.489	.239	.904	.818
Conductivity * Stream	.132	.018	.247	.061

```

ONEWAY Temperatue Turbidity Depthm Velocity DissolvedOxygen Total_Nitrate Total_Phosph
ate pH_Level
      Distance Conductivity BY Stream
/MISSING ANALYSIS
/CRITERIA=CILEVEL(0.95)
/POSTHOC=TUKEY BTUKEY ALPHA(0.05) .

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Oneway

Notes

Output Created		10-JUL-2024 02:39:08
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	Active Dataset	DataSet1
	Filter	<none>
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	Split File	<none>
	N of Rows in Working Data File	9
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY Temperatue Turbidity Depthm Velocity DissolvedOxygen Total_Nitrate Total_Phosphate pH_Level Distance Conductivity BY Stream /MISSING ANALYSIS /CRITERIA=CILEVEL (0.95) /POSTHOC=TUKEY BTUKEY ALPHA(0.05).
Resources	Processor Time	00:00:00.50
	Elapsed Time	00:00:00.59

ANOVA

		Sum of Squares	df	Mean Square	F
Temperatue	Between Groups	31.002	2	15.501	6.659
	Within Groups	13.967	6	2.328	
	Total	44.969	8		
Turbidity	Between Groups	141785.589	2	70892.795	4.228
	Within Groups	100609.447	6	16768.241	
	Total	242395.036	8		
Depth(m)	Between Groups	.460	2	.230	1.801
	Within Groups	.766	6	.128	
	Total	1.225	8		
Velocity	Between Groups	.043	2	.021	23.850
	Within Groups	.005	6	.001	
	Total	.048	8		
Dissolved Oxygen(%)	Between Groups	5592.427	2	2796.213	2.973
	Within Groups	5642.873	6	940.479	
	Total	11235.300	8		
Total Nitrate	Between Groups	57.496	2	28.748	3234.125
	Within Groups	.053	6	.009	
	Total	57.549	8		
Total Phosphate	Between Groups	3.318	2	1.659	3.166
	Within Groups	3.144	6	.524	
	Total	6.462	8		
pH Level	Between Groups	.195	2	.097	1.351
	Within Groups	.432	6	.072	
	Total	.627	8		
Distance	Between Groups	137.586	2	68.793	13.481
	Within Groups	30.617	6	5.103	
	Total	168.203	8		
Conductivity	Between Groups	1002.847	2	501.423	.195
	Within Groups	15464.573	6	2577.429	
	Total	16467.420	8		

ANOVA

		Sig.
Temperatue	Between Groups	.030
	Within Groups	
	Total	
Turbidity	Between Groups	.072
	Within Groups	
	Total	
Depth(m)	Between Groups	.244
	Within Groups	
	Total	
Velocity	Between Groups	.001
	Within Groups	
	Total	
Dissolved Oxygen(%)	Between Groups	.127
	Within Groups	
	Total	
Total Nitrate	Between Groups	.000
	Within Groups	
	Total	
Total Phosphate	Between Groups	.115
	Within Groups	
	Total	
pH Level	Between Groups	.328
	Within Groups	
	Total	
Distance	Between Groups	.006
	Within Groups	
	Total	
Conductivity	Between Groups	.828
	Within Groups	
	Total	

Post Hoc Tests

Multiple Comparisons

Dependent Variable		(I) Stream	(J) Stream	Mean Difference (I-J)
Temperatue	Tukey HSD	UPSTREAM	MIDSTREAM	3.833333*
			DOWNSTREAM	-.200000
		MIDSTREAM	UPSTREAM	-3.833333*
			DOWNSTREAM	-4.033333*
		DOWNSTREAM	UPSTREAM	.200000
			MIDSTREAM	4.033333*
Turbidity	Tukey HSD	UPSTREAM	MIDSTREAM	-256.833333
			DOWNSTREAM	17.940000
		MIDSTREAM	UPSTREAM	256.833333
			DOWNSTREAM	274.773333
		DOWNSTREAM	UPSTREAM	-17.940000
			MIDSTREAM	-274.773333
Depth(m)	Tukey HSD	UPSTREAM	MIDSTREAM	-.126667
			DOWNSTREAM	-.530000
		MIDSTREAM	UPSTREAM	.126667
			DOWNSTREAM	-.403333
		DOWNSTREAM	UPSTREAM	.530000
			MIDSTREAM	.403333
Velocity	Tukey HSD	UPSTREAM	MIDSTREAM	.071000
			DOWNSTREAM	-.096967*
		MIDSTREAM	UPSTREAM	-.071000
			DOWNSTREAM	-.167967*
		DOWNSTREAM	UPSTREAM	.096967*
			MIDSTREAM	.167967*
Dissolved Oxygen(%)	Tukey HSD	UPSTREAM	MIDSTREAM	16.133333
			DOWNSTREAM	59.066667
		MIDSTREAM	UPSTREAM	-16.133333
			DOWNSTREAM	42.933333
		DOWNSTREAM	UPSTREAM	-59.066667
			MIDSTREAM	-42.933333
Total Nitrate	Tukey HSD	UPSTREAM	MIDSTREAM	3.9667*
			DOWNSTREAM	6.1000*
		MIDSTREAM	UPSTREAM	-3.9667*
			DOWNSTREAM	2.1333*
		DOWNSTREAM	UPSTREAM	-6.1000*
			MIDSTREAM	-2.1333*

Multiple Comparisons

Dependent Variable		(I) Stream	(J) Stream	Std. Error	Sig.
Temperatue	Tukey HSD	UPSTREAM	MIDSTREAM	1.245733	.049
			DOWNSTREAM	1.245733	.986
		MIDSTREAM	UPSTREAM	1.245733	.049
			DOWNSTREAM	1.245733	.041
		DOWNSTREAM	UPSTREAM	1.245733	.986
			MIDSTREAM	1.245733	.041
Turbidity	Tukey HSD	UPSTREAM	MIDSTREAM	105.729974	.112
			DOWNSTREAM	105.729974	.984
		MIDSTREAM	UPSTREAM	105.729974	.112
			DOWNSTREAM	105.729974	.090
		DOWNSTREAM	UPSTREAM	105.729974	.984
			MIDSTREAM	105.729974	.090
Depth(m)	Tukey HSD	UPSTREAM	MIDSTREAM	.291675	.903
			DOWNSTREAM	.291675	.243
		MIDSTREAM	UPSTREAM	.291675	.903
			DOWNSTREAM	.291675	.406
		DOWNSTREAM	UPSTREAM	.291675	.243
			MIDSTREAM	.291675	.406
Velocity	Tukey HSD	UPSTREAM	MIDSTREAM	.024417	.061
			DOWNSTREAM	.024417	.017
		MIDSTREAM	UPSTREAM	.024417	.061
			DOWNSTREAM	.024417	.001
		DOWNSTREAM	UPSTREAM	.024417	.017
			MIDSTREAM	.024417	.001
Dissolved Oxygen(%)	Tukey HSD	UPSTREAM	MIDSTREAM	25.039687	.802
			DOWNSTREAM	25.039687	.122
		MIDSTREAM	UPSTREAM	25.039687	.802
			DOWNSTREAM	25.039687	.275
		DOWNSTREAM	UPSTREAM	25.039687	.122
			MIDSTREAM	25.039687	.275
Total Nitrate	Tukey HSD	UPSTREAM	MIDSTREAM	.0770	.000
			DOWNSTREAM	.0770	.000
		MIDSTREAM	UPSTREAM	.0770	.000
			DOWNSTREAM	.0770	.000
		DOWNSTREAM	UPSTREAM	.0770	.000
			MIDSTREAM	.0770	.000

Multiple Comparisons

				95% ...
Dependent Variable		(I) Stream	(J) Stream	Lower Bound
Temperatue	Tukey HSD	UPSTREAM	MIDSTREAM	.01108
			DOWNSTREAM	-4.02225
		MIDSTREAM	UPSTREAM	-7.65559
			DOWNSTREAM	-7.85559
		DOWNSTREAM	UPSTREAM	-3.62225
			MIDSTREAM	.21108
Turbidity	Tukey HSD	UPSTREAM	MIDSTREAM	-581.24193
			DOWNSTREAM	-306.46860
		MIDSTREAM	UPSTREAM	-67.57526
			DOWNSTREAM	-49.63526
		DOWNSTREAM	UPSTREAM	-342.34860
			MIDSTREAM	-599.18193
Depth(m)	Tukey HSD	UPSTREAM	MIDSTREAM	-1.02160
			DOWNSTREAM	-1.42494
		MIDSTREAM	UPSTREAM	-.76827
			DOWNSTREAM	-1.29827
		DOWNSTREAM	UPSTREAM	-.36494
			MIDSTREAM	-.49160
Velocity	Tukey HSD	UPSTREAM	MIDSTREAM	-.00392
			DOWNSTREAM	-.17188
		MIDSTREAM	UPSTREAM	-.14592
			DOWNSTREAM	-.24288
		DOWNSTREAM	UPSTREAM	.02205
			MIDSTREAM	.09305
Dissolved Oxygen(%)	Tukey HSD	UPSTREAM	MIDSTREAM	-60.69530
			DOWNSTREAM	-17.76197
		MIDSTREAM	UPSTREAM	-92.96197
			DOWNSTREAM	-33.89530
		DOWNSTREAM	UPSTREAM	-135.89530
			MIDSTREAM	-119.76197
Total Nitrate	Tukey HSD	UPSTREAM	MIDSTREAM	3.730
			DOWNSTREAM	5.864
		MIDSTREAM	UPSTREAM	-4.203
			DOWNSTREAM	1.897
		DOWNSTREAM	UPSTREAM	-6.336
			MIDSTREAM	-2.370

Multiple Comparisons

95% Confidence .

Dependent Variable		(I) Stream	(J) Stream	Upper Bound
Temperatue	Tukey HSD	UPSTREAM	MIDSTREAM	7.65559
			DOWNSTREAM	3.62225
		MIDSTREAM	UPSTREAM	-.01108
			DOWNSTREAM	-.21108
		DOWNSTREAM	UPSTREAM	4.02225
			MIDSTREAM	7.85559
Turbidity	Tukey HSD	UPSTREAM	MIDSTREAM	67.57526
			DOWNSTREAM	342.34860
		MIDSTREAM	UPSTREAM	581.24193
			DOWNSTREAM	599.18193
		DOWNSTREAM	UPSTREAM	306.46860
			MIDSTREAM	49.63526
Depth(m)	Tukey HSD	UPSTREAM	MIDSTREAM	.76827
			DOWNSTREAM	.36494
		MIDSTREAM	UPSTREAM	1.02160
			DOWNSTREAM	.49160
		DOWNSTREAM	UPSTREAM	1.42494
			MIDSTREAM	1.29827
Velocity	Tukey HSD	UPSTREAM	MIDSTREAM	.14592
			DOWNSTREAM	-.02205
		MIDSTREAM	UPSTREAM	.00392
			DOWNSTREAM	-.09305
		DOWNSTREAM	UPSTREAM	.17188
			MIDSTREAM	.24288
Dissolved Oxygen(%)	Tukey HSD	UPSTREAM	MIDSTREAM	92.96197
			DOWNSTREAM	135.89530
		MIDSTREAM	UPSTREAM	60.69530
			DOWNSTREAM	119.76197
		DOWNSTREAM	UPSTREAM	17.76197
			MIDSTREAM	33.89530
Total Nitrate	Tukey HSD	UPSTREAM	MIDSTREAM	4.203
			DOWNSTREAM	6.336
		MIDSTREAM	UPSTREAM	-3.730
			DOWNSTREAM	2.370
		DOWNSTREAM	UPSTREAM	-5.864
			MIDSTREAM	-1.897

Multiple Comparisons

Dependent Variable		(I) Stream	(J) Stream	Mean Difference (I-J)
Total Phosphate	Tukey HSD	UPSTREAM	MIDSTREAM	-.06667
			DOWNSTREAM	-1.32000
		MIDSTREAM	UPSTREAM	.06667
			DOWNSTREAM	-1.25333
		DOWNSTREAM	UPSTREAM	1.32000
			MIDSTREAM	1.25333
pH Level	Tukey HSD	UPSTREAM	MIDSTREAM	.190000
			DOWNSTREAM	.360000
		MIDSTREAM	UPSTREAM	-.190000
			DOWNSTREAM	.170000
		DOWNSTREAM	UPSTREAM	-.360000
			MIDSTREAM	-.170000
Distance	Tukey HSD	UPSTREAM	MIDSTREAM	9.566667*
			DOWNSTREAM	5.173333
		MIDSTREAM	UPSTREAM	-9.566667*
			DOWNSTREAM	-4.393333
		DOWNSTREAM	UPSTREAM	-5.173333
			MIDSTREAM	4.393333
Conductivity	Tukey HSD	UPSTREAM	MIDSTREAM	11.966667
			DOWNSTREAM	-13.866667
		MIDSTREAM	UPSTREAM	-11.966667
			DOWNSTREAM	-25.833333
		DOWNSTREAM	UPSTREAM	13.866667
			MIDSTREAM	25.833333

Multiple Comparisons

Dependent Variable		(I) Stream	(J) Stream	Std. Error	Sig.
Total Phosphate	Tukey HSD	UPSTREAM	MIDSTREAM	.59105	.993
			DOWNSTREAM	.59105	.143
		MIDSTREAM	UPSTREAM	.59105	.993
			DOWNSTREAM	.59105	.166
		DOWNSTREAM	UPSTREAM	.59105	.143
			MIDSTREAM	.59105	.166
pH Level	Tukey HSD	UPSTREAM	MIDSTREAM	.219089	.679
			DOWNSTREAM	.219089	.300
		MIDSTREAM	UPSTREAM	.219089	.679
			DOWNSTREAM	.219089	.730
		DOWNSTREAM	UPSTREAM	.219089	.300
			MIDSTREAM	.219089	.730
Distance	Tukey HSD	UPSTREAM	MIDSTREAM	1.844431	.005
			DOWNSTREAM	1.844431	.069
		MIDSTREAM	UPSTREAM	1.844431	.005
			DOWNSTREAM	1.844431	.119
		DOWNSTREAM	UPSTREAM	1.844431	.069
			MIDSTREAM	1.844431	.119
Conductivity	Tukey HSD	UPSTREAM	MIDSTREAM	41.452213	.955
			DOWNSTREAM	41.452213	.941
		MIDSTREAM	UPSTREAM	41.452213	.955
			DOWNSTREAM	41.452213	.813
		DOWNSTREAM	UPSTREAM	41.452213	.941
			MIDSTREAM	41.452213	.813

Multiple Comparisons

				95% ...
Dependent Variable		(I) Stream	(J) Stream	Lower Bound
Total Phosphate	Tukey HSD	UPSTREAM	MIDSTREAM	-1.8802
			DOWNSTREAM	-3.1335
		MIDSTREAM	UPSTREAM	-1.7468
			DOWNSTREAM	-3.0668
		DOWNSTREAM	UPSTREAM	-.4935
			MIDSTREAM	-.5602
pH Level	Tukey HSD	UPSTREAM	MIDSTREAM	-.48223
			DOWNSTREAM	-.31223
		MIDSTREAM	UPSTREAM	-.86223
			DOWNSTREAM	-.50223
		DOWNSTREAM	UPSTREAM	-1.03223
			MIDSTREAM	-.84223
Distance	Tukey HSD	UPSTREAM	MIDSTREAM	3.90745
			DOWNSTREAM	-.48589
		MIDSTREAM	UPSTREAM	-15.22589
			DOWNSTREAM	-10.05255
		DOWNSTREAM	UPSTREAM	-10.83255
			MIDSTREAM	-1.26589
Conductivity	Tukey HSD	UPSTREAM	MIDSTREAM	-115.22010
			DOWNSTREAM	-141.05344
		MIDSTREAM	UPSTREAM	-139.15344
			DOWNSTREAM	-153.02010
		DOWNSTREAM	UPSTREAM	-113.32010
			MIDSTREAM	-101.35344

Multiple Comparisons

95% Confidence .

Dependent Variable		(I) Stream	(J) Stream	Upper Bound
Total Phosphate	Tukey HSD	UPSTREAM	MIDSTREAM	1.7468
			DOWNSTREAM	.4935
		MIDSTREAM	UPSTREAM	1.8802
			DOWNSTREAM	.5602
		DOWNSTREAM	UPSTREAM	3.1335
			MIDSTREAM	3.0668
pH Level	Tukey HSD	UPSTREAM	MIDSTREAM	.86223
			DOWNSTREAM	1.03223
		MIDSTREAM	UPSTREAM	.48223
			DOWNSTREAM	.84223
		DOWNSTREAM	UPSTREAM	.31223
			MIDSTREAM	.50223
Distance	Tukey HSD	UPSTREAM	MIDSTREAM	15.22589
			DOWNSTREAM	10.83255
		MIDSTREAM	UPSTREAM	-3.90745
			DOWNSTREAM	1.26589
		DOWNSTREAM	UPSTREAM	.48589
			MIDSTREAM	10.05255
Conductivity	Tukey HSD	UPSTREAM	MIDSTREAM	139.15344
			DOWNSTREAM	113.32010
		MIDSTREAM	UPSTREAM	115.22010
			DOWNSTREAM	101.35344
		DOWNSTREAM	UPSTREAM	141.05344
			MIDSTREAM	153.02010

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Temperatue

			Subset for alpha = 0.05	
	Stream	N	1	2
Tukey HSD ^a	MIDSTREAM	3	27.86667	
	UPSTREAM	3		31.70000
	DOWNSTREAM	3		31.90000
	Sig.		1.000	.986
Tukey B ^a	MIDSTREAM	3	27.86667	
	UPSTREAM	3		31.70000
	DOWNSTREAM	3		31.90000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Turbidity

			Subset for alpha = 0.05
	Stream	N	1
Tukey HSD ^a	DOWNSTREAM	3	17.42667
	UPSTREAM	3	35.36667
	MIDSTREAM	3	292.20000
	Sig.		.090
Tukey B ^a	DOWNSTREAM	3	17.42667
	UPSTREAM	3	35.36667
	MIDSTREAM	3	292.20000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Depth(m)

			Subset for alpha = 0.05
	Stream	N	1
Tukey HSD ^a	UPSTREAM	3	.50000
	MIDSTREAM	3	.62667
	DOWNSTREAM	3	1.03000
	Sig.		.243
Tukey B ^a	UPSTREAM	3	.50000
	MIDSTREAM	3	.62667
	DOWNSTREAM	3	1.03000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Velocity

			Subset for alpha = 0.05		
	Stream	N	1	2	3
Tukey HSD ^a	MIDSTREAM	3	.36000		
	UPSTREAM	3	.43100		
	DOWNSTREAM	3		.52797	
	Sig.		.061	1.000	
Tukey B ^a	MIDSTREAM	3	.36000		
	UPSTREAM	3		.43100	
	DOWNSTREAM	3			.52797

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Dissolved Oxygen(%)

			Subset for alpha = 0.05
	Stream	N	1
Tukey HSD ^a	DOWNSTREAM	3	38.76667
	MIDSTREAM	3	81.70000
	UPSTREAM	3	97.83333
	Sig.		.122
Tukey B ^a	DOWNSTREAM	3	38.76667
	MIDSTREAM	3	81.70000
	UPSTREAM	3	97.83333

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Total Nitrate

			Subset for alpha = 0.05		
	Stream	N	1	2	3
Tukey HSD ^a	DOWNSTREAM	3	.967		
	MIDSTREAM	3		3.100	
	UPSTREAM	3			7.067
	Sig.		1.000	1.000	1.000
Tukey B ^a	DOWNSTREAM	3	.967		
	MIDSTREAM	3		3.100	
	UPSTREAM	3			7.067

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Total Phosphate

			Subset for alpha = 0.05
	Stream	N	1
Tukey HSD ^a	UPSTREAM	3	1.1000
	MIDSTREAM	3	1.1667
	DOWNSTREAM	3	2.4200
	Sig.		.143
Tukey B ^a	UPSTREAM	3	1.1000
	MIDSTREAM	3	1.1667
	DOWNSTREAM	3	2.4200

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

pH Level

			Subset for alpha = 0.05
	Stream	N	1
Tukey HSD ^a	DOWNSTREAM	3	7.43000
	MIDSTREAM	3	7.60000
	UPSTREAM	3	7.79000
	Sig.		.300
Tukey B ^a	DOWNSTREAM	3	7.43000
	MIDSTREAM	3	7.60000
	UPSTREAM	3	7.79000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Distance

			Subset for alpha = 0.05	
	Stream	N	1	2
Tukey HSD ^a	MIDSTREAM	3	11.24333	
	DOWNSTREAM	3	15.63667	15.63667
	UPSTREAM	3		20.81000
	Sig.		.119	.069
Tukey B ^a	MIDSTREAM	3	11.24333	
	DOWNSTREAM	3	15.63667	
	UPSTREAM	3		20.81000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Conductivity

	Stream	N	Subset for alpha = 0.05 1
Tukey HSD ^a	MIDSTREAM	3	140.00000
	UPSTREAM	3	151.96667
	DOWNSTREAM	3	165.83333
	Sig.		.813
Tukey B ^a	MIDSTREAM	3	140.00000
	UPSTREAM	3	151.96667
	DOWNSTREAM	3	165.83333

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

```

T-TEST GROUPS=Stream(1 2)
/MISSING=ANALYSIS
/VARIABLES=Temperatue Turbidity Depthm Velocity DissolvedOxygen Total_Nitrate Total_
Phosphate
pH_Level Distance Conductivity
/ES DISPLAY(TRUE)
/CRITERIA=CI(.95).

```

T-Test

Notes

Output Created		10-JUL-2024 02:40:28
Comments		
Input	Data	D:\Works\Godiva\Data Model Final.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	9
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on the cases with no missing or out-of-range data for any variable in the analysis.
Syntax		T-TEST GROUPS=Stream(1 2) /MISSING=ANALYSIS /VARIABLES=Temperatue Turbidity Depthm Velocity DissolvedOxygen Total_Nitrate Total_Phosphate pH_Level Distance Conductivity /ES DISPLAY(TRUE) /CRITERIA=CI(.95).
Resources	Processor Time	00:00:00.05
	Elapsed Time	00:00:00.08

Group Statistics

	Stream	N	Mean	Std. Deviation	Std. Error Mean
Temperatue	UPSTREAM	3	31.70000	.700000	.404145
	MIDSTREAM	3	27.86667	.251661	.145297
Turbidity	UPSTREAM	3	35.36667	18.218763	10.518608
	MIDSTREAM	3	292.20000	223.108315	128.811645
Depth(m)	UPSTREAM	3	.50000	.151327	.087369
	MIDSTREAM	3	.62667	.028868	.016667
Velocity	UPSTREAM	3	.43100	.008544	.004933
	MIDSTREAM	3	.36000	.020000	.011547
Dissolved Oxygen(%)	UPSTREAM	3	97.83333	1.274101	.735603
	MIDSTREAM	3	81.70000	37.513331	21.658332
Total Nitrate	UPSTREAM	3	7.067	.0577	.0333
	MIDSTREAM	3	3.100	.1000	.0577
Total Phosphate	UPSTREAM	3	1.1000	.82614	.47697
	MIDSTREAM	3	1.1667	.27538	.15899
pH Level	UPSTREAM	3	7.79000	.085440	.049329
	MIDSTREAM	3	7.60000	.100000	.057735
Distance	UPSTREAM	3	20.81000	2.245462	1.296418
	MIDSTREAM	3	11.24333	.456107	.263333
Conductivity	UPSTREAM	3	151.96667	18.986662	10.961954
	MIDSTREAM	3	140.00000	46.349218	26.759733

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of .
		F	Sig.	t
Temperatue	Equal variances assumed	4.785	.094	8.926
	Equal variances not assumed			8.926
Turbidity	Equal variances assumed	13.383	.022	-1.987
	Equal variances not assumed			-1.987
Depth(m)	Equal variances assumed	6.684	.061	-1.424
	Equal variances not assumed			-1.424
Velocity	Equal variances assumed	1.059	.362	5.654
	Equal variances not assumed			5.654
Dissolved Oxygen(%)	Equal variances assumed	11.044	.029	.744
	Equal variances not assumed			.744
Total Nitrate	Equal variances assumed	.400	.561	59.500
	Equal variances not assumed			59.500
Total Phosphate	Equal variances assumed	5.955	.071	-.133
	Equal variances not assumed			-.133
pH Level	Equal variances assumed	.025	.881	2.502
	Equal variances not assumed			2.502
Distance	Equal variances assumed	4.740	.095	7.232
	Equal variances not assumed			7.232
Conductivity	Equal variances assumed	4.514	.101	.414
	Equal variances not assumed			.414

Independent Samples Test

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
Temperatue	Equal variances assumed	4	.001	3.833333
	Equal variances not assumed	2.509	.006	3.833333
Turbidity	Equal variances assumed	4	.118	-256.833333
	Equal variances not assumed	2.027	.184	-256.833333
Depth(m)	Equal variances assumed	4	.228	-.126667
	Equal variances not assumed	2.145	.282	-.126667
Velocity	Equal variances assumed	4	.005	.071000
	Equal variances not assumed	2.706	.014	.071000
Dissolved Oxygen(%)	Equal variances assumed	4	.498	16.133333
	Equal variances not assumed	2.005	.534	16.133333
Total Nitrate	Equal variances assumed	4	.000	3.9667
	Equal variances not assumed	3.200	.000	3.9667
Total Phosphate	Equal variances assumed	4	.901	-.06667
	Equal variances not assumed	2.439	.905	-.06667
pH Level	Equal variances assumed	4	.067	.190000
	Equal variances not assumed	3.905	.068	.190000
Distance	Equal variances assumed	4	.002	9.566667
	Equal variances not assumed	2.165	.015	9.566667
Conductivity	Equal variances assumed	4	.700	11.966667
	Equal variances not assumed	2.653	.710	11.966667

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
Temperatue	Equal variances assumed	.429470	2.640934	5.025733
	Equal variances not assumed	.429470	2.301847	5.364820
Turbidity	Equal variances assumed	129.240400	-615.662211	101.995544
	Equal variances not assumed	129.240400	-805.955561	292.288895
Depth(m)	Equal variances assumed	.088944	-.373616	.120283
	Equal variances not assumed	.088944	-.485557	.232224
Velocity	Equal variances assumed	.012557	.036137	.105863
	Equal variances not assumed	.012557	.028472	.113528
Dissolved Oxygen(%)	Equal variances assumed	21.670820	-44.034509	76.301176
	Equal variances not assumed	21.670820	-76.903310	109.169977
Total Nitrate	Equal variances assumed	.0667	3.7816	4.1518
	Equal variances not assumed	.0667	3.7618	4.1715
Total Phosphate	Equal variances assumed	.50277	-1.46258	1.32925
	Equal variances not assumed	.50277	-1.89645	1.76312
pH Level	Equal variances assumed	.075939	-.020839	.400839
	Equal variances not assumed	.075939	-.022880	.402880
Distance	Equal variances assumed	1.322892	5.893728	13.239605
	Equal variances not assumed	1.322892	4.270353	14.862981
Conductivity	Equal variances assumed	28.917949	-68.322431	92.255765
	Equal variances not assumed	28.917949	-87.265900	111.199233

Independent Samples Effect Sizes

		Standardizer ^a	Point Estimate	95% ... Lower
Temperatue	Cohen's d	.525991	7.288	2.216
	Hedges' correction	.659232	5.815	1.768
	Glass's delta	.251661	15.232	2.289
Turbidity	Cohen's d	158.286518	-1.623	-3.492
	Hedges' correction	198.382730	-1.295	-2.786
	Glass's delta	223.108315	-1.151	-2.980
Depth(m)	Cohen's d	.108934	-1.163	-2.887
	Hedges' correction	.136529	-.928	-2.303
	Glass's delta	.028868	-4.388	-8.675
Velocity	Cohen's d	.015379	4.617	1.129
	Hedges' correction	.019274	3.684	.901
	Glass's delta	.020000	3.550	.010
Dissolved Oxygen(%)	Cohen's d	26.541226	.608	-1.077
	Hedges' correction	33.264494	.485	-.860
	Glass's delta	37.513331	.430	-1.263
Total Nitrate	Cohen's d	.0816	48.582	16.857
	Hedges' correction	.1023	38.762	13.450
	Glass's delta	.1000	39.667	6.261
Total Phosphate	Cohen's d	.61577	-.108	-1.704
	Hedges' correction	.77175	-.086	-1.359
	Glass's delta	.27538	-.242	-1.831
pH Level	Cohen's d	.093005	2.043	-.125
	Hedges' correction	.116565	1.630	-.100
	Glass's delta	.100000	1.900	-.519
Distance	Cohen's d	1.620206	5.905	1.668
	Hedges' correction	2.030627	4.711	1.331
	Glass's delta	.456107	20.975	3.241
Conductivity	Cohen's d	35.417110	.338	-1.298
	Hedges' correction	44.388764	.270	-1.036
	Glass's delta	46.349218	.258	-1.388

Independent Samples Effect Sizes

		95% ... Upper
Temperatue	Cohen's d	12.383
	Hedges' correction	9.881
	Glass's delta	29.328
Turbidity	Cohen's d	.374
	Hedges' correction	.298
	Glass's delta	.843
Depth(m)	Cohen's d	.672
	Hedges' correction	.536
	Glass's delta	-.228
Velocity	Cohen's d	8.044
	Hedges' correction	6.418
	Glass's delta	7.121
Dissolved Oxygen(%)	Cohen's d	2.225
	Hedges' correction	1.775
	Glass's delta	2.032
Total Nitrate	Cohen's d	81.120
	Hedges' correction	64.724
	Glass's delta	76.214
Total Phosphate	Cohen's d	1.500
	Hedges' correction	1.197
	Glass's delta	1.400
pH Level	Cohen's d	4.081
	Hedges' correction	3.256
	Glass's delta	4.178
Distance	Cohen's d	10.124
	Hedges' correction	8.078
	Glass's delta	40.338
Conductivity	Cohen's d	1.934
	Hedges' correction	1.543
	Glass's delta	1.847

a. The denominator used in estimating the effect sizes.

Cohen's d uses the pooled standard deviation.

Hedges' correction uses the pooled standard deviation, plus a correction factor.

Glass's delta uses the sample standard deviation of the control group.