2.7

Response Action Contract
Contract No. 68-W-98-228

EPA United States Environmental Protection Agency
REGION 10

Final (Revision 2)

REMEDIAL INVESTIGATION REPORT

Coeur d'Alene Basin
Remedial Investigation/Feasibility Study

VOLUME 9

Appendix C (Continued)

September 2001

URS Greiner
in association with
CH2M HILL
White Shield, Inc.

155306
USEPA SF
1131604

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: PC305 **Date:** 20-Jun-00
Chemical: dCd **Analyst:** J.MacLachlan
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,557	200	1	4	0.00	0.00	0.00
SD:	362	375	1	4	1.00	1.00	1.00
CV:	0.01	1.88	0.69	1.23			
Min:	33,372	5	0.3	0.04	-0.52	-1.08	-0.80
Max:	35,465	2,033	3	13	4.89	2.60	2.21
Median:	34,536	67	1	2	-0.35	-0.25	-0.40

dCd PC305			: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.0848)		update r2	0.08	0.0848		r2:	0.044	0.081
r2 Q,[COC]:	0.08	[dCd]	Q			m:	0.2165	0.00113
slope, m:	0.0004	1	4.6			b:	-7281	-34.69
intercept, b:	1.0	1	199.5					
N: 12		2	2033					
LnConc. = mLn(Q)+b (r2=0.571)			update r2	0.57	0.571			
r2 lnQ,ln[COC]:	0.57	ln[dCd]	ln Q	[dCd]	Q			
slope, m:	0.40	-1.62	1.52	0.2	5			
intercept, b:	-2.22	-0.13	5.30	1	200			
N: 12		0.79	7.62	2	2,033			

N= 38

	Sampling Date	Q Discharge	dCd Concentration	dCd Load	Ln Q	Ln dCd Conc.	Ln dCd Load	dCd PC305 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	*14-May-91*	*87.6*			4.47			-0.30		
MFG	*3-Oct-91*	*4.58*			1.52			-0.52		
IDEQ	*29-Oct-93*	*14.04*			2.64			-0.50		
IDEQ	*1-Dec-93*	*12.36*			2.51			-0.50		
IDEQ	*21-Dec-93*	*21.18*			3.05			-0.48		
IDEQ	*21-Dec-93*	*22.65*			3.12			-0.47		
IDEQ	*21-Jan-94*	*44.92*			3.80			-0.41		
IDEQ	*21-Jan-94*	*52.23*			3.96			-0.39		
IDEQ	*17-Feb-94*	*17.53*			2.86			-0.49		
IDEQ	*17-Feb-94*	*16.63*			2.81			-0.49		
IDEQ	8-Mar-94	153.41	0.6	0.495	5.03	-0.51	-0.70	-0.12	-0.70	-0.70
IDEQ	*23-Mar-94*	*137.43*			4.92			-0.17		
IDEQ	*8-Apr-94*	*148.7*			5.00			-0.14		
IDEQ	*8-Apr-94*	*143.89*			4.97			-0.15		
IDEQ	*18-Apr-94*	*665.65*			6.50			1.24		
IDEQ	3-May-94	135.26	0.7	0.509	4.91	-0.36	-0.67	-0.17	-0.57	-0.69
IDEQ	*19-May-94*	*81.81*			4.40			-0.31		
IDEQ	*8-Jun-94*	*39.8*			3.68			-0.43		
IDEQ	24-Jun-94	25.41	0.4	0.055	3.24	-0.92	-2.91	-0.46	-0.95	-0.80
IDEQ	*17-Aug-94*	*19.75*			2.98			-0.48		
IDEQ	*26-Sep-94*	*19.75*			2.98			-0.48		
IDEQ	*5-Oct-94*	*137.43*			4.92			-0.17		
IDEQ	*16-Nov-94*	*131.01*			4.88			-0.18		
IDEQ	*14-Dec-94*	*131.01*			4.88			-0.18		
IDEQ	10-Jan-95	729.43	1.5	5.887	6.59	0.41	1.77	1.41	0.44	0.54
IDEQ	9-Feb-95	360.33	0.9	1.745	5.89	-0.11	0.56	0.43	-0.32	-0.41
IDEQ	22-Mar-95	2032.81	1.2	13.124	7.62	0.18	2.57	4.89	0.06	2.21
IDEQ	14-Apr-95	342.88	1	1.845	5.84	0.00	0.61	0.38	-0.19	-0.39
IDEQ	27-Apr-95	285.77	3.2	4.920	5.66	1.16	1.59	0.23	2.60	0.32
IDEQ	11-May-95	1077.37	2	11.593	6.98	0.69	2.45	2.34	1.08	1.86
IDEQ	24-May-95	103.6	0.5	0.279	4.64	-0.69	-1.28	-0.26	-0.82	-0.75
IDEQ	*12-Jun-95*	*48.62*			3.88			-0.40		
IDEQ	*27-Jun-95*	*51.5*			3.94			-0.40		
IDEQ	11-Jul-95	27.47	0.3	0.044	3.31	-1.20	-3.12	-0.46	-1.08	-0.80
IDEQ	*25-Jul-95*	*18.52*			2.92			-0.48		
IDEQ	*14-Aug-95*	*12.2*			2.50			-0.50		
IDEQ	*13-Sep-95*	*6.32*			1.84			-0.52		
EPAREG10	*4-Feb-97*	*221.6*	*1.5*	1.788	5.40	0.41	0.58	0.06	0.44	-0.40

for graph 0

dCd

Concentration over time analysis

	dCd	PC305		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.114**	**0.00086**
	Time	**Ln[COC]**	**[COC]**		
first:	14-May-91	-1.28	0		
mid:	21-Jul-94	-0.28	1		
last:	4-Feb-97	0.52	2		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	4-Feb-97	0.00	1		

Load over time analysis

	dCd	PC305			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.052**	**0.00160**
	Time	**LnLoad**	**Load**		
first:	14-May-91	-2.11	0		
mid:	21-Jul-94	-0.25	1		
last:	4-Feb-97	1.23	3		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	4-Feb-97	0.00	1		

	max r2:	0.147		max r2:	0.052	
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.114	0.00086	-29.90	0.052	0.00160	-55.35
	0.114	0.00086	-29.90	0.052	0.00160	-55.35
	0.114	0.00086	-29.90	0.052	0.00160	-55.35
	0.114	0.00086	-29.90	0.052	0.00160	-55.35
	0.114	0.00086	-29.90	0.052	0.00160	-55.35
	0.114	0.00086	-29.90	0.052	0.00160	-55.35
	0.114	0.00086	-29.90	0.052	0.00160	-55.35
	0.114	0.00086	-29.90	0.052	0.00160	-55.35
	0.114	0.00086	-29.90	0.052	0.00160	-55.35
	0.114	0.00086	-29.90	0.052	0.00160	-55.35
	0.114	0.00086	-29.90	0.052	0.00160	-55.35
	0.114	0.00086	-29.90	0.052	0.00160	-55.35
	0.081	0.00079	-27.45	0.036	0.00145	-50.38
	0.081	0.00079	-27.45	0.036	0.00145	-50.38
	0.081	0.00079	-27.45	0.036	0.00145	-50.38
	0.081	0.00079	-27.45	0.036	0.00145	-50.38
	0.081	0.00079	-27.45	0.036	0.00145	-50.38
	0.061	0.00076	-26.33	0.020	0.00119	-41.23
	0.061	0.00076	-26.33	0.020	0.00119	-41.23
	0.061	0.00076	-26.33	0.020	0.00119	-41.23
	0.003	0.00017	-5.95	0.025	-0.00128	45.12
	0.003	0.00017	-5.95	0.025	-0.00128	45.12
	0.003	0.00017	-5.95	0.025	-0.00128	45.12
	0.003	0.00017	-5.95	0.025	-0.00128	45.12
	0.003	0.00017	-5.95	0.025	-0.00128	45.12
	0.003	0.00017	-5.95	0.025	-0.00128	45.12
	0.011	0.00034	-11.77	0.010	-0.00083	29.35
	0.007	0.00028	-9.86	0.010	-0.00086	30.59
	0.011	0.00035	-12.31	0.000	0.00009	-2.97
	0.010	0.00035	-12.09	0.002	0.00035	-12.11
	0.147	0.00112	-39.57	0.034	0.00143	-50.57

update for EV, CV:

dCd **PC305**

LN Analysis **dCd**

Load **Load Data, EV=3.52 lbs/day CV=1.23**

Load Data-based LN

		u	ln dCd Load	dCd Load
Avg:	**4**			
SD:	**4**	u	ln dCd Load	dCd Load
CV:	**1.23**	3	3.7	40
Min:	**0.04**	0	0.80	2
Max:	**13**	-3	-2.09	0.1
Median:	**2**			
		4	3.52	
		1.23	1.23	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.954, EV=5.38lbs/day CV=96.4; max r2=0.95**

r2 u,lnLoad:	0.954	u	lnLoad	Load			
slope, m:	0.331	3	6.18	484			
intercept, b:	0.955	0	-2.89	0.06			
N:	12	-3	-11.95	0.00001			
E[Load]:	5.4	Parameter Estimates				0.954	0.954
SD[Load]:	519	from LN regression				5.4	5.38
CV[Load]:	96.37	update graph label				96.4	96.4
						max r2	
		N: 38				0.954	

Date	dCd Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
3-Oct-91		1	0.0163	-2.136		
13-Sep-95		2	0.0425	-1.723		
14-Aug-95		3	0.0686	-1.486		
1-Dec-93		4	0.0948	-1.312		
29-Oct-93		5	0.1209	-1.170		
17-Feb-94		6	0.1471	-1.049		
17-Feb-94		7	0.1732	-0.942		
25-Jul-95		8	0.1993	-0.844		
17-Aug-94		9	0.2255	-0.754		
26-Sep-94		10	0.2516	-0.669		
21-Dec-93		11	0.2778	-0.589		
21-Dec-93		12	0.3039	-0.513		
8-Jun-94		13	0.3301	-0.440		
21-Jan-94		14	0.3562	-0.369		
12-Jun-95		15	0.3824	-0.299		
27-Jun-95		16	0.4085	-0.231		
21-Jan-94		17	0.4346	-0.165		
11-Jul-95	**0.044**	18	0.4608	-0.098	-3.116	
14-May-91		19	0.4869	-0.033		
24-Jun-94	**0.055**	20	0.5131	0.033	-2.906	
19-May-94		21	0.5392	0.098		
16-Nov-94		22	0.5654	0.165		
14-Dec-94		23	0.5915	0.231		
23-Mar-94		24	0.6176	0.299		
5-Oct-94		25	0.6438	0.369		
8-Apr-94		26	0.6699	0.440		
8-Apr-94		27	0.6961	0.513		
24-May-95	**0.279**	28	0.7222	0.589	-1.278	
18-Apr-94		29	0.7484	0.669		
8-Mar-94	**0.495**	30	0.7745	0.754	-0.703	
3-May-94	**0.509**	31	0.8007	0.844	-0.675	
9-Feb-95	**1.745**	32	0.8268	0.942	0.557	
4-Feb-97	**1.788**	33	0.8529	1.049	0.581	
14-Apr-95	**1.845**	34	0.8791	1.170	0.612	
27-Apr-95	**4.920**	35	0.9052	1.312	1.593	
10-Jan-95	**5.887**	36	0.9314	1.486	1.773	
11-May-95	**11.593**	37	0.9575	1.723	2.450	
22-Mar-95	**13.124**	38	0.9837	2.136	2.574	

		update for EV, CV:				
dCd		PC305		1	1.15	
LN Analysis		dCd		0.69	0.686	
Concentration		Conc. Data, EV=1.15 ug/L CV=0.686				
Avg:	1.2	Data-based LN				
SD:	0.8	u	ln[dCd]	[dCd]		
CV:	0.69	3	1.8	6		
Min:	0.3	0	-0.05	1		
Max:	3	-3	-1.92	0.1		
Median:	1.0					

					0.945	0.945
	u=mLn(Conc.)+b:				0.5	0.538
update for r2, EV, CV:	r2=0.945, EV=0.538 ug/L CV=2.68; max r2=0.98				2.682	2.68
	r2 u,lnConc:	0.945	u	lnConc.	Conc.	
	slope, m:	0.690	3	2.68	15	
	intercept, b:	1.153	0	-1.67	0.188	
	N:	12	-3	-6.02	0.002	
	E[Conc]:	0.5	Parameter Estimates			
	SD[Conc]:	1.4	from LN regression			
	CV[Conc]:	2.68	update graph label			

		dCd	N: 38				max r2 0.982
		Concentration	i	i-3/8 / N+1/4	u	Ln	r2
	Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
	update and rank for new data						
	####		1	0.0163	-2.136		
	####		2	0.0425	-1.723		
	####		3	0.0686	-1.486		
	####		4	0.0948	-1.312		
	####		5	0.1209	-1.170		
	####		6	0.1471	-1.049		
	####		7	0.1732	-0.942		
	####		8	0.1993	-0.844		
	####		9	0.2255	-0.754		
	####		10	0.2516	-0.669		
	####		11	0.2778	-0.589		
	####		12	0.3039	-0.513		
	####		13	0.3301	-0.440		
	####		14	0.3562	-0.369		
	####		15	0.3824	-0.299		
	####		16	0.4085	-0.231		
	####		17	0.4346	-0.165		
0.954	####		18	0.4608	-0.098		
	####		19	0.4869	-0.033		
0.936	####		20	0.5131	0.033		
	####		21	0.5392	0.098		
	####		22	0.5654	0.165		
	####		23	0.5915	0.231		
	####		24	0.6176	0.299		
	####		25	0.6438	0.369		
	####		26	0.6699	0.440		
	####	0.3	27	0.6961	0.513	-1.204	0.945
0.898	####	0.4	28	0.7222	0.589	-0.916	0.959
	####	0.5	29	0.7484	0.669	-0.693	0.967
0.876	####	0.6	30	0.7745	0.754	-0.511	0.971
0.853	####	0.7	31	0.8007	0.844	-0.357	0.975
0.883	####	0.9	32	0.8268	0.942	-0.105	0.982
0.854	####	1	33	0.8529	1.049	0.000	0.977
0.798	####	1.2	34	0.8791	1.170	0.182	0.971
	####	1.5	35	0.9052	1.312	0.405	
	####	1.5	36	0.9314	1.486	0.405	
	####	2	37	0.9575	1.723	0.693	
	####	3.2	38	0.9837	2.136	1.163	

update for EV, CV:

dCd		**PC305**			200	200
LN Analysis		**dCd**			1.88	1.88
Discharge, Q		**Q Data, EV=200 cfs CV=1.88**				
Avg:	200	**Q Data-based LN**				
SD:	375	u	lnQ	Q		
CV:	1.88	3	8.2	3740		
Min:	5	0	4.54	94		
Max:	2,033	-3	0.86	2		
Median:	67					
					0.977	0.977
					215.2	215
u=mLn(Q)+b:					2.94	2.94

update for r2, EV, CV: **r2=0.977, EV=215 cfs CV=2.94; max r2=0.98**

r2 u,lnQ:	0.977	u	lnQ	Q
slope, m:	0.664	3	8.75	6340
intercept, b:	-2.816	0	4.24	69
N:	38	-3	-0.28	1
E[Q]:	215.2	Parameter Estimates		
SD[Q]:	633	from LN regression		
CV[Q]:	2.94	update graph label		

	Q	N: 38				max r2 0.983
	Discharge	i	i-3/8 / N+1/4	u	Ln	r2
Date	cfs	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
3-Oct-91	*4.58*	1	0.0163	-2.136	1.522	0.977
13-Sep-95	*6.32*	2	0.0425	-1.723	1.844	0.977
14-Aug-95	*12.2*	3	0.0686	-1.486	2.501	0.976
1-Dec-93	*12.36*	4	0.0948	-1.312	2.514	0.980
29-Oct-93	*14.04*	5	0.1209	-1.170	2.642	0.981
17-Feb-94	*16.63*	6	0.1471	-1.049	2.811	0.982
17-Feb-94	*17.53*	7	0.1732	-0.942	2.864	0.983
25-Jul-95	*18.52*	8	0.1993	-0.844	2.919	0.983
17-Aug-94	*19.75*	9	0.2255	-0.754	2.983	0.982
26-Sep-94	*19.75*	10	0.2516	-0.669	2.983	0.981
21-Dec-93	*21.18*	11	0.2778	-0.589	3.053	0.979
21-Dec-93	*22.65*	12	0.3039	-0.513	3.120	0.978
24-Jun-94	25.41	13	0.3301	-0.440	3.235	0.976
11-Jul-95	27.47	14	0.3562	-0.369	3.313	0.975
8-Jun-94	*39.8*	15	0.3824	-0.299	3.684	0.975
21-Jan-94	*44.92*	16	0.4085	-0.231	3.805	0.973
12-Jun-95	*48.62*	17	0.4346	-0.165	3.884	0.971
27-Jun-95	*51.5*	18	0.4608	-0.098	3.942	0.968
21-Jan-94	*52.23*	19	0.4869	-0.033	3.956	0.965
19-May-94	*81.81*	20	0.5131	0.033	4.404	0.964
14-May-91	*87.6*	21	0.5392	0.098	4.473	0.962
24-May-95	103.6	22	0.5654	0.165	4.641	0.959
16-Nov-94	*131.01*	23	0.5915	0.231	4.875	0.958
14-Dec-94	*131.01*	24	0.6176	0.299	4.875	0.967
3-May-94	135.26	25	0.6438	0.369	4.907	0.973
23-Mar-94	*137.43*	26	0.6699	0.440	4.923	0.978
5-Oct-94	*137.43*	27	0.6961	0.513	4.923	0.981
8-Apr-94	*143.89*	28	0.7222	0.589	4.969	0.980
8-Apr-94	*148.7*	29	0.7484	0.669	5.002	0.978
8-Mar-94	153.41	30	0.7745	0.754	5.033	0.973
4-Feb-97	*221.6*	31	0.8007	0.844	5.401	0.979
27-Apr-95	285.77	32	0.8268	0.942	5.655	0.975
14-Apr-95	342.88	33	0.8529	1.049	5.837	0.967
9-Feb-95	360.33	34	0.8791	1.170	5.887	0.954
18-Apr-94	*665.65*	35	0.9052	1.312	6.501	
10-Jan-95	729.43	36	0.9314	1.486	6.592	
11-May-95	1077.37	37	0.9575	1.723	6.982	
22-Mar-95	2032.81	38	0.9837	2.136	7.617	

Secondary Scale For LN graphs

n	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	PC305	**Date:**	20-Jun-00
Chemical:	dPb	**Analyst:**	J.MacLachlan
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,557	200	4	12	0.00	0.00	0.00
SD:	362	375	1	15	1.00	1.00	1.00
CV:	0.01	1.88	0.27	1.31			
Min:	33,372	5	3	0.1	-0.52	-1.45	-0.76
Max:	35,465	2,033	6	44	4.89	1.78	2.09
Median:	34,536	67	4	0.5	-0.35	-0.07	-0.74

dPb	PC305		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.0131)		update r2	0.01	0.0131	r2:	0.044	0.081
r2 Q,[COC]:	0.01	[dPb]	Q		m:	0.2165	0.00113
slope, m:	-0.0002	4	4.6		b:	-7281	-34.69
intercept, b:	4.2	4	199.5				
N: 7		4	2033				
LnConc. = mLn(Q)+b (r2=0.00447)		update r2	0.00	0.00447			
r2 lnQ,ln[COC]:	0.004	ln[dPb]	ln Q	[dPb]	Q		
slope, m:	-0.01	1.39	1.52	4	5		
intercept, b:	1.40	1.36	5.30	4	200		
N: 7		1.34	7.62	4	2,033		

N= 38

	Sampling Date	Q Discharge	dPb Concentration	dPb Load	Ln Q	Ln dPb Conc.	Ln dPb Load	for graph 0 dPb PC305 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	*14-May-91*	*87.6*			4.47			-0.30		
MFG	*3-Oct-91*	*4.58*			1.52			-0.52		
IDEQ	29-Oct-93	14.04	6	0.45	2.64	1.79	-0.79	-0.50	1.78	-0.74
IDEQ	*1-Dec-93*	*12.36*			2.51			-0.50		
IDEQ	*21-Dec-93*	*21.18*			3.05			-0.48		
IDEQ	*21-Dec-93*	*22.65*			3.12			-0.47		
IDEQ	*21-Jan-94*	*44.92*			3.80			-0.41		
IDEQ	*21-Jan-94*	*52.23*			3.96			-0.39		
IDEQ	*17-Feb-94*	*17.53*			2.86			-0.49		
IDEQ	*17-Feb-94*	*16.63*			2.81			-0.49		
IDEQ	*8-Mar-94*	*153.41*			5.03			-0.12		
IDEQ	*23-Mar-94*	*137.43*			4.92			-0.17		
IDEQ	*8-Apr-94*	*148.7*			5.00			-0.14		
IDEQ	*8-Apr-94*	*143.89*			4.97			-0.15		
IDEQ	*18-Apr-94*	*665.65*			6.50			1.24		
IDEQ	*3-May-94*	*135.26*			4.91			-0.17		
IDEQ	*19-May-94*	*81.81*			4.40			-0.31		
IDEQ	*8-Jun-94*	*39.8*			3.68			-0.43		
IDEQ	*24-Jun-94*	*25.41*			3.24			-0.46		
IDEQ	17-Aug-94	19.75	2.5	0.27	2.98	0.92	-1.33	-0.48	-1.45	-0.75
IDEQ	*26-Sep-94*	*19.75*			2.98			-0.48		
IDEQ	*5-Oct-94*	*137.43*			4.92			-0.17		
IDEQ	*16-Nov-94*	*131.01*			4.88			-0.18		
IDEQ	*14-Dec-94*	*131.01*			4.88			-0.18		
IDEQ	10-Jan-95	729.43	5	19.62	6.59	1.61	2.98	1.41	0.86	0.52
IDEQ	*9-Feb-95*	*360.33*			5.89			0.43		
IDEQ	22-Mar-95	2032.81	4	43.75	7.62	1.39	3.78	4.89	-0.07	2.09
IDEQ	*14-Apr-95*	*342.88*			5.84			0.38		
IDEQ	*27-Apr-95*	*285.77*			5.66			0.23		
IDEQ	11-May-95	1077.37	3	17.39	6.98	1.10	2.86	2.34	-0.99	0.37
IDEQ	*24-May-95*	*103.6*			4.64			-0.26		
IDEQ	*12-Jun-95*	*48.62*			3.88			-0.40		
IDEQ	*27-Jun-95*	*51.5*			3.94			-0.40		
IDEQ	*11-Jul-95*	*27.47*			3.31			-0.46		
IDEQ	25-Jul-95	18.52	4	0.40	2.92	1.39	-0.92	-0.48	-0.07	-0.74
IDEQ	*14-Aug-95*	*12.2*			2.50			-0.50		
IDEQ	13-Sep-95	6.32	4	0.14	1.84	1.39	-2.00	-0.52	-0.07	-0.76
EPAREG10	*4-Feb-97*	*221.6*			5.40			0.06		

dPb

Concentration over time analysis

	dPb	PC305		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.119**	**-0.00043**
	Time	**Ln[COC]**	**[COC]**		
first:	14-May-91	1.95	7		
mid:	21-Jul-94	1.45	4		
last:	4-Feb-97	1.05	3		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	4-Feb-97	0.00	1		

Load over time analysis

	dPb	PC305			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.017**	**0.00136**
	Time	**LnLoad**	**Load**		
first:	14-May-91	-1.17	0.3		
mid:	21-Jul-94	0.41	2		
last:	4-Feb-97	1.67	5		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	4-Feb-97	0.00	1		

max r2: 0.842

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.119	-0.00043	16.33
0.119	-0.00043	16.33
0.119	-0.00043	16.33
0.195	0.00077	-25.53
0.195	0.00077	-25.53
0.195	0.00077	-25.53
0.195	0.00077	-25.53
0.195	0.00077	-25.53
0.195	0.00077	-25.53
0.195	0.00077	-25.53
0.195	0.00077	-25.53
0.195	0.00077	-25.53
0.195	0.00077	-25.53
0.195	0.00077	-25.53
0.195	0.00077	-25.53
0.195	0.00077	-25.53
0.195	0.00077	-25.53
0.195	0.00077	-25.53
0.195	0.00077	-25.53
0.195	0.00077	-25.53
0.195	0.00077	-25.53
0.195	0.00077	-25.53
0.141	-0.00070	25.64
0.141	-0.00070	25.64
0.141	-0.00070	25.64
0.141	-0.00070	25.64
0.141	-0.00070	25.64
0.103	0.00060	-19.44
0.103	0.00060	-19.44
0.842	0.00242	-83.25
0.842	0.00242	-83.25
0.842	0.00242	-83.25

max r2: 0.970

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.017	0.00136	-46.50
0.017	0.00136	-46.50
0.017	0.00136	-46.50
0.027	-0.00300	105.19
0.027	-0.00300	105.19
0.027	-0.00300	105.19
0.027	-0.00300	105.19
0.027	-0.00300	105.19
0.027	-0.00300	105.19
0.027	-0.00300	105.19
0.027	-0.00300	105.19
0.027	-0.00300	105.19
0.027	-0.00300	105.19
0.027	-0.00300	105.19
0.027	-0.00300	105.19
0.027	-0.00300	105.19
0.027	-0.00300	105.19
0.027	-0.00300	105.19
0.027	-0.00300	105.19
0.027	-0.00300	105.19
0.027	-0.00300	105.19
0.027	-0.00300	105.19
0.791	-0.02371	827.33
0.791	-0.02371	827.33
0.791	-0.02371	827.33
0.791	-0.02371	827.33
0.791	-0.02371	827.33
0.970	-0.03568	1245.13
0.970	-0.03568	1245.13
0.962	-0.03972	1386.00
0.962	-0.03972	1386.00
0.962	-0.03972	1386.00

update for EV, CV:

dPb
LN Analysis
PC305
dPb

Load

Load Data, EV=11.7 lbs/day CV=1.31

		Load Data-based LN		
Avg:	**12**	u	ln dPb Load	dPb Load
SD:	**15**	3	5.0	142
CV:	**1.31**	0	1.96	7
Min:	**0.1**	-3	-1.03	0.4
Max:	**44**			
Median:	**0.5**			
		12	11.7	
		1.31	1.31	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.993, EV=5.46lbs/day CV=12.7; max r2=0.99**

r2 u,lnLoad:	0.993	u	lnLoad	Load
slope, m:	0.443	3	5.92	373
intercept, b:	0.375	0	-0.85	0.4
N: 7		-3	-7.61	0.0005
E[Load]:	5.5	Parameter Estimates		
SD[Load]:	69	from LN regression		
CV[Load]:	12.69	update graph label		

N: 38

Date	**dPb Load lbs/day Ranked**	**i rank**	**i-3/8 / N+1/4 plotting points**	**u y-axis**	**Ln x-axis**
update and rank for new data					
3-Oct-91		1	0.0163	-2.136	
14-Aug-95		2	0.0425	-1.723	
1-Dec-93		3	0.0686	-1.486	
17-Feb-94		4	0.0948	-1.312	
17-Feb-94		5	0.1209	-1.170	
26-Sep-94		6	0.1471	-1.049	
21-Dec-93		7	0.1732	-0.942	
21-Dec-93		8	0.1993	-0.844	
24-Jun-94		9	0.2255	-0.754	
11-Jul-95		10	0.2516	-0.669	
13-Sep-95	**0.14**	11	0.2778	-0.589	-1.995
8-Jun-94		12	0.3039	-0.513	
21-Jan-94		13	0.3301	-0.440	
12-Jun-95		14	0.3562	-0.369	
27-Jun-95		15	0.3824	-0.299	
21-Jan-94		16	0.4085	-0.231	
17-Aug-94	**0.27**	17	0.4346	-0.165	-1.326
19-May-94		18	0.4608	-0.098	
25-Jul-95	**0.40**	19	0.4869	-0.033	-0.920
24-May-95		20	0.5131	0.033	
29-Oct-93	**0.45**	21	0.5392	0.098	-0.791
16-Nov-94		22	0.5654	0.165	
14-Dec-94		23	0.5915	0.231	
3-May-94		24	0.6176	0.299	
23-Mar-94		25	0.6438	0.369	
5-Oct-94		26	0.6699	0.440	
8-Apr-94		27	0.6961	0.513	
8-Apr-94		28	0.7222	0.589	
8-Mar-94		29	0.7484	0.669	
14-May-91		30	0.7745	0.754	
4-Feb-97		31	0.8007	0.844	
27-Apr-95		32	0.8268	0.942	
14-Apr-95		33	0.8529	1.049	
9-Feb-95		34	0.8791	1.170	
18-Apr-94		35	0.9052	1.312	
11-May-95	**17.39**	36	0.9314	1.486	2.856
10-Jan-95	**19.62**	37	0.9575	1.723	2.977
22-Mar-95	**43.75**	38	0.9837	2.136	3.778

		update for EV, CV:				
dPb		**PC305**			4	4.07
LN Analysis		**dPb**			0.27	0.266
Concentration		**Conc. Data, EV=4.07 ug/L CV=0.166**				
Avg:	4	**Data-based LN**				
SD:	1	u	ln[dPb]	[dPb]		
CV:	0.27	3	2.2	9		
Min:	3	0	1.37	4		
Max:	6	-3	0.59	2		
Median:	4					

							0.875	0.875
		u=mLn(Conc.)+b:					1.8	1.82
		update for r2, EV, CV:	**r2=0.875, EV=1.82 ug/L CV=0.869; max r2=0.91**				0.869	0.869
			r2 u,lnConc:	0.875	u	lnConc.	Conc.	
			slope, m:	1.333	3	2.57	13	
			intercept, b:	-0.421	0	0.32	1	
			N:	7	-3	-1.93	0.1	
0.993	0.993		E[Conc]:	1.8	Parameter Estimates			
5.5	5.46		SD[Conc]:	2	from LN regression			
12.7	12.7		CV[Conc]:	0.87	update graph label			

max r2									max r2
0.993			**dPb**		N: 38				0.910
r2			**Concentration**	**i**	***i-3/8 / N+1/4***	**u**	**Ln**		**r2**
forward		**Date**	**ug/L**	**rank**	**plotting points**	**y-axis**	**x-axis**		**forward**
			Ranked						
			update and rank for new data						
		##		1	0.0163	-2.136			
		##		2	0.0425	-1.723			
		##		3	0.0686	-1.486			
		##		4	0.0948	-1.312			
		##		5	0.1209	-1.170			
		##		6	0.1471	-1.049			
		##		7	0.1732	-0.942			
		##		8	0.1993	-0.844			
		##		9	0.2255	-0.754			
		##		10	0.2516	-0.669			
0.993		##		11	0.2778	-0.589			
		##		12	0.3039	-0.513			
		##		13	0.3301	-0.440			
		##		14	0.3562	-0.369			
		##		15	0.3824	-0.299			
		##		16	0.4085	-0.231			
0.993		##		17	0.4346	-0.165			
		##		18	0.4608	-0.098			
0.991		##		19	0.4869	-0.033			
		##		20	0.5131	0.033			
0.985		##		21	0.5392	0.098			
		##		22	0.5654	0.165			
		##		23	0.5915	0.231			
		##		24	0.6176	0.299			
		##		25	0.6438	0.369			
		##		26	0.6699	0.440			
		##		27	0.6961	0.513			
		##		28	0.7222	0.589			
		##		29	0.7484	0.669			
		##		30	0.7745	0.754			
		##		31	0.8007	0.844			
		##	2.5	32	0.8268	0.942	0.916		0.875
		##	3	33	0.8529	1.049	1.099		0.890
		##	4	34	0.8791	1.170	1.386		0.910
		##	4	35	0.9052	1.312	1.386		
		##	4	36	0.9314	1.486	1.386		
		##	5	37	0.9575	1.723	1.609		
		##	6	38	0.9837	2.136	1.792		

update for EV, CV:

dPb		**PC305**			200	200
LN Analysis		**dPb**			1.88	1.88
Discharge, Q		**Q Data, EV=200 cfs CV=1.88**				
Avg:	**200**	**Q Data-based LN**				
SD:	**375**	u	lnQ	Q		
CV:	**1.88**	3	8.2	3740		
Min:	**5**	0	4.54	94		
Max:	**2,033**	-3	0.86	2		
Median:	**67**					
					0.977	0.977
					215.2	215
	u=mLn(Q)+b:				2.94	2.94

pdate for r2, EV, CV: **r2=0.977, EV=215 cfs CV=2.94; max r2=0.98**

r2 u,lnQ:	0.977	u	lnQ	Q
slope, m:	0.664	3	8.75	6340
intercept, b:	-2.816	0	4.24	69
N:	38	-3	-0.28	1
E[Q]:	215.2	Parameter Estimates		
SD[Q]:	633	from LN regression		
CV[Q]:	2.94	update graph label		

N: 38

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.983 r2 forward
update and rank for new data						
####	*4.58*	1	0.0163	-2.136	1.522	0.977
####	*6.32*	2	0.0425	-1.723	1.844	0.977
####	*12.2*	3	0.0686	-1.486	2.501	0.976
####	*12.36*	4	0.0948	-1.312	2.514	0.980
####	14.04	5	0.1209	-1.170	2.642	0.981
####	*16.63*	6	0.1471	-1.049	2.811	0.982
####	*17.53*	7	0.1732	-0.942	2.864	0.983
####	18.52	8	0.1993	-0.844	2.919	0.983
####	19.75	9	0.2255	-0.754	2.983	0.982
####	*19.75*	10	0.2516	-0.669	2.983	0.981
####	*21.18*	11	0.2778	-0.589	3.053	0.979
####	*22.65*	12	0.3039	-0.513	3.120	0.978
####	*25.41*	13	0.3301	-0.440	3.235	0.976
####	*27.47*	14	0.3562	-0.369	3.313	0.975
####	*39.8*	15	0.3824	-0.299	3.684	0.975
####	*44.92*	16	0.4085	-0.231	3.805	0.973
####	*48.62*	17	0.4346	-0.165	3.884	0.971
####	*51.5*	18	0.4608	-0.098	3.942	0.968
####	*52.23*	19	0.4869	-0.033	3.956	0.965
####	*81.81*	20	0.5131	0.033	4.404	0.964
####	*87.6*	21	0.5392	0.098	4.473	0.962
####	*103.6*	22	0.5654	0.165	4.641	0.959
####	*131.01*	23	0.5915	0.231	4.875	0.958
####	*131.01*	24	0.6176	0.299	4.875	0.967
####	*135.26*	25	0.6438	0.369	4.907	0.973
####	*137.43*	26	0.6699	0.440	4.923	0.978
####	*137.43*	27	0.6961	0.513	4.923	0.981
####	*143.89*	28	0.7222	0.589	4.969	0.980
####	*148.7*	29	0.7484	0.669	5.002	0.978
####	*153.41*	30	0.7745	0.754	5.033	0.973
####	*221.6*	31	0.8007	0.844	5.401	0.979
####	*285.77*	32	0.8268	0.942	5.655	0.975
####	*342.88*	33	0.8529	1.049	5.837	0.967
####	*360.33*	34	0.8791	1.170	5.887	0.954
####	*665.65*	35	0.9052	1.312	6.501	
####	729.43	36	0.9314	1.486	6.592	
####	1077.37	37	0.9575	1.723	6.982	
####	2032.81	38	0.9837	2.136	7.617	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	PC305	**Date:**	20-Jun-00
Chemical:	dZn	**Analyst:**	J.MacLachlan
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	34,557	200	113	174	0.00	0.00	0.00
SD:	362	375	59	431	1.00	1.00	1.00
CV:	0.01	1.88	0.52	2.47			
Min:	33,372	5	46	1.1	-0.52	-1.15	-0.40
Max:	35,465	2,033	402	2,209	4.89	4.92	4.72
Median:	34,536	67	101	29	-0.35	-0.21	-0.34

dZn	PC305		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.181)		update r2	0.18	0.181	r2:	0.044	0.081
r2 Q,[COC]:	0.18		[dZn]	Q	m:	0.2165	0.00113
slope, m:	0.1		100	4.6	b:	-7281	-34.69
intercept, b:	100.1		113	199.5			
N: 37			234	2033			
LnConc. = mLn(Q)+b (r2=0.19)		update r2		0.19	0.19		
r2 lnQ,ln[COC]:	0.19		ln[dZn]	ln Q	[dZn]	Q	
slope, m:	0.11		4.35	1.52	77	5	
intercept, b:	4.18		4.77	5.30	118	200	
N: 37			5.02	7.62	152	2,033	

N= 38

	Sampling Date	Q Discharge	dZn Concentration	dZn Load	Ln Q	Ln dZn Conc.	Ln dZn Load	dZn PC305 Standardized Values = (x - Avg)/SD for graph 0		
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	*14-May-91*	*87.6*			4.47			-0.30		
MFG	3-Oct-91	4.58	46	1.1	1.52	3.83	0.13	-0.52	-1.15	-0.40
IDEQ	29-Oct-93	14.04	131	9.9	2.64	4.88	2.29	-0.50	0.30	-0.38
IDEQ	1-Dec-93	12.36	108	7.2	2.51	4.68	1.97	-0.50	-0.09	-0.39
IDEQ	21-Dec-93	21.18	115	13.1	3.05	4.74	2.57	-0.48	0.03	-0.37
IDEQ	21-Dec-93	22.65	115	14.0	3.12	4.74	2.64	-0.47	0.03	-0.37
IDEQ	21-Jan-94	44.92	103	24.9	3.80	4.63	3.21	-0.41	-0.18	-0.35
IDEQ	21-Jan-94	52.23	103	28.9	3.96	4.63	3.37	-0.39	-0.18	-0.34
IDEQ	17-Feb-94	17.53	95	9.0	2.86	4.55	2.19	-0.49	-0.31	-0.38
IDEQ	17-Feb-94	16.63	95	8.5	2.81	4.55	2.14	-0.49	-0.31	-0.39
IDEQ	8-Mar-94	153.41	135	111.4	5.03	4.91	4.71	-0.12	0.37	-0.15
IDEQ	23-Mar-94	137.43	121	89.5	4.92	4.80	4.49	-0.17	0.13	-0.20
IDEQ	8-Apr-94	148.7	104	83.2	5.00	4.64	4.42	-0.14	-0.16	-0.21
IDEQ	8-Apr-94	143.89	104	80.5	4.97	4.64	4.39	-0.15	-0.16	-0.22
IDEQ	18-Apr-94	665.65	57	204.1	6.50	4.04	5.32	1.24	-0.96	0.07
IDEQ	3-May-94	135.26	71	51.7	4.91	4.26	3.94	-0.17	-0.72	-0.28
IDEQ	19-May-94	81.81	73	32.1	4.40	4.29	3.47	-0.31	-0.69	-0.33
IDEQ	8-Jun-94	39.8	86	18.4	3.68	4.45	2.91	-0.43	-0.47	-0.36
IDEQ	24-Jun-94	25.41	78	10.7	3.24	4.36	2.37	-0.46	-0.60	-0.38
IDEQ	17-Aug-94	19.75	89	9.5	2.98	4.49	2.25	-0.48	-0.42	-0.38
IDEQ	26-Sep-94	19.75	100	10.6	2.98	4.61	2.36	-0.48	-0.23	-0.38
IDEQ	5-Oct-94	137.43	98	72.5	4.92	4.58	4.28	-0.17	-0.26	-0.24
IDEQ	16-Nov-94	131.01	129	90.9	4.88	4.86	4.51	-0.18	0.27	-0.19
IDEQ	14-Dec-94	131.01	124	87.4	4.88	4.82	4.47	-0.18	0.18	-0.20
IDEQ	10-Jan-95	729.43	402	1577.6	6.59	6.00	7.36	1.41	4.92	3.26
IDEQ	9-Feb-95	360.33	224	434.2	5.89	5.41	6.07	0.43	1.89	0.60
IDEQ	22-Mar-95	2032.81	202	2209.2	7.62	5.31	7.70	4.89	1.51	4.72
IDEQ	14-Apr-95	342.88	152	280.4	5.84	5.02	5.64	0.38	0.66	0.25
IDEQ	27-Apr-95	285.77	104	159.9	5.66	4.64	5.07	0.23	-0.16	-0.03
IDEQ	11-May-95	1077.37	77	446.3	6.98	4.34	6.10	2.34	-0.62	0.63
IDEQ	24-May-95	103.6	82	45.7	4.64	4.41	3.82	-0.26	-0.54	-0.30
IDEQ	12-Jun-95	48.62	85	22.2	3.88	4.44	3.10	-0.40	-0.48	-0.35
IDEQ	27-Jun-95	51.5	88	24.4	3.94	4.48	3.19	-0.40	-0.43	-0.35
IDEQ	11-Jul-95	27.47	85	12.6	3.31	4.44	2.53	-0.46	-0.48	-0.38
IDEQ	25-Jul-95	18.52	89	8.9	2.92	4.49	2.18	-0.48	-0.42	-0.38
IDEQ	14-Aug-95	12.2	101	6.6	2.50	4.62	1.89	-0.50	-0.21	-0.39
IDEQ	13-Sep-95	6.32	97	3.3	1.84	4.57	1.19	-0.52	-0.28	-0.40
EPAREG10	4-Feb-97	221.6	128	152.6	5.40	4.85	5.03	0.06	0.25	-0.05

dZn

Concentration over time analysis

	dZn	PC305		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.087**	**0.00035**
	Time	**Ln[COC]**	**[COC]**		
first:	14-May-91	4.22	68		
mid:	21-Jul-94	4.63	103		
last:	4-Feb-97	4.96	142		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	4-Feb-97	0.00	1		

Load over time analysis

	dZn	PC305		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.143**	**0.00202**
	Time	**LnLoad**	**Load**		
first:	14-May-91	1.20	3		
mid:	21-Jul-94	3.55	35		
last:	4-Feb-97	5.43	228		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	4-Feb-97	0.00	1		

	max r2: 0.879			max r2: 0.818		
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.087	0.00035	-7.57	0.143	0.00202	-66.25
	0.087	0.00035	-7.57	0.143	0.00202	-66.25
	0.011	0.00014	-0.34	0.051	0.00138	-43.98
	0.018	0.00019	-1.76	0.039	0.00122	-38.46
	0.019	0.00020	-2.18	0.025	0.00099	-30.57
	0.023	0.00022	-2.97	0.018	0.00084	-25.14
	0.027	0.00025	-3.90	0.011	0.00067	-19.15
	0.027	0.00026	-4.20	0.008	0.00058	-16.06
	0.028	0.00027	-4.54	0.005	0.00050	-13.38
	0.025	0.00026	-4.34	0.001	0.00019	-2.59
	0.023	0.00025	-4.09	0.001	-0.00019	10.79
	0.035	0.00032	-6.44	0.000	-0.00007	6.58
	0.044	0.00037	-8.26	0.000	0.00002	3.42
	0.046	0.00039	-9.06	0.000	0.00011	0.34
	0.049	0.00042	-10.06	0.001	0.00021	-3.21
	0.021	0.00028	-4.97	0.006	0.00061	-17.33
	0.007	0.00017	-1.09	0.006	0.00066	-19.08
	0.000	0.00004	3.50	0.004	0.00055	-15.17
	0.001	-0.00007	7.09	0.000	0.00018	-2.32
	0.013	-0.00025	13.35	0.003	-0.00055	23.28
	0.030	-0.00039	18.36	0.021	-0.00143	54.09
	0.046	-0.00050	22.18	0.057	-0.00238	87.18
	0.071	-0.00065	27.50	0.065	-0.00268	97.91
	0.071	-0.00068	28.62	0.068	-0.00287	104.61
	0.074	-0.00073	30.30	0.072	-0.00308	111.92
	0.011	-0.00020	11.83	0.030	-0.00188	69.67
	0.006	0.00012	0.31	0.010	-0.00108	41.81
	0.141	0.00041	-9.92	0.002	0.00044	-11.62
	0.642	0.00062	-17.14	0.024	0.00129	-41.55
	0.848	0.00070	-20.05	0.069	0.00207	-69.27
	0.875	0.00066	-18.62	0.360	0.00351	-119.94
	0.879	0.00064	-17.74	0.543	0.00421	-144.60
	0.878	0.00062	-17.04	0.643	0.00469	-161.44
	0.869	0.00060	-16.60	0.818	0.00539	-186.18

update for EV, CV:

dZn **PC305**

LN Analysis **dZn**

Load

Load Data, EV=174 lbs/day CV=2.47

Load Data-based LN

		u	ln dZn Load	dZn Load
Avg:	**174**	3	8.4	4365
SD:	**431**	0	4.18	65
CV:	**2.47**	-3	-0.02	1.0
Min:	**1.1**			
Max:	**2,209**			
Median:	**29**			

174 174
2.47 2.47

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.969, EV=173lbs/day CV=4.69; max r2=0.99**

		u	lnLoad	Load		
r2 u,lnLoad:	0.969	u	lnLoad	Load		
slope, m:	0.565	3	8.90	7328		
intercept, b:	-2.025	0	3.59	36		
N: 37		-3	-1.73	0.2		
E[Load]:	173.2	Parameter Estimates			0.969	0.969
SD[Load]:	813	from LN regression			173.2	173
CV[Load]:	4.69	update graph label			4.7	4.69
					max r2	
		N: 38			0.985	

Date	dZn Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
3-Oct-91	**1.1**	1	0.0163	-2.136	0.125	0.969
13-Sep-95	**3.3**	2	0.0425	-1.723	1.193	0.965
14-May-91		3	0.0686	-1.486		
14-Aug-95	**6.6**	4	0.0948	-1.312	1.891	0.967
1-Dec-93	**7.2**	5	0.1209	-1.170	1.972	0.972
17-Feb-94	**8.5**	6	0.1471	-1.049	2.140	0.975
25-Jul-95	**8.9**	7	0.1732	-0.942	2.182	0.980
17-Feb-94	**9.0**	8	0.1993	-0.844	2.193	0.983
17-Aug-94	**9.5**	9	0.2255	-0.754	2.247	0.985
29-Oct-93	**9.9**	10	0.2516	-0.669	2.292	0.985
26-Sep-94	**10.6**	11	0.2778	-0.589	2.363	0.985
24-Jun-94	**10.7**	12	0.3039	-0.513	2.367	0.985
11-Jul-95	**12.6**	13	0.3301	-0.440	2.531	0.984
21-Dec-93	**13.1**	14	0.3562	-0.369	2.573	0.983
21-Dec-93	**14.0**	15	0.3824	-0.299	2.640	0.981
8-Jun-94	**18.4**	16	0.4085	-0.231	2.913	0.979
12-Jun-95	**22.2**	17	0.4346	-0.165	3.102	0.978
27-Jun-95	**24.4**	18	0.4608	-0.098	3.194	0.976
21-Jan-94	**24.9**	19	0.4869	-0.033	3.215	0.973
21-Jan-94	**28.9**	20	0.5131	0.033	3.365	0.971
19-May-94	**32.1**	21	0.5392	0.098	3.470	0.968
24-May-95	**45.7**	22	0.5654	0.165	3.822	0.965
3-May-94	**51.7**	23	0.5915	0.231	3.945	0.961
5-Oct-94	**72.5**	24	0.6176	0.299	4.283	0.957
8-Apr-94	**80.5**	25	0.6438	0.369	4.388	0.961
8-Apr-94	**83.2**	26	0.6699	0.440	4.421	0.966
14-Dec-94	**87.4**	27	0.6961	0.513	4.470	0.969
23-Mar-94	**89.5**	28	0.7222	0.589	4.494	0.971
16-Nov-94	**90.9**	29	0.7484	0.669	4.510	0.968
8-Mar-94	**111.4**	30	0.7745	0.754	4.713	0.962
4-Feb-97	**152.6**	31	0.8007	0.844	5.028	0.954
27-Apr-95	**159.9**	32	0.8268	0.942	5.075	0.947
18-Apr-94	**204.1**	33	0.8529	1.049	5.319	0.931
14-Apr-95	**280.4**	34	0.8791	1.170	5.636	0.905
9-Feb-95	**434.2**	35	0.9052	1.312	6.074	
11-May-95	**446.3**	36	0.9314	1.486	6.101	
10-Jan-95	**1577.6**	37	0.9575	1.723	7.364	
22-Mar-95	**2209.2**	38	0.9837	2.136	7.700	

update for EV, CV:

dZn		PC305		113	113
LN Analysis		dZn		0.52	0.517
Concentration		Conc. Data, EV=113 ug/L CV=0.517			
Avg:	113	Data-based LN			
SD:	59	u	ln[dZn]	[dZn]	
CV:	0.52	3	6.1	434	
Min:	46	0	4.61	101	
Max:	402	-3	3.15	23	
Median:	101				

					0.879	0.879
u=mLn(Conc.)+b:					112.0	112
update for r2, EV, CV:	r2=0.879, EV=112 ug/L CV=0.453; max r2=0.98				0.453	0.453
	r2 u,lnConc:	0.879	u	lnConc.	Conc.	
	slope, m:	2.312	3	5.92	373	
	intercept, b:	-10.694	0	4.62	102	
	N:	37	-3	3.33	28	
	E[Conc]:	112.0	Parameter Estimates			
	SD[Conc]:	51	from LN regression			
	CV[Conc]:	0.45	update graph label			

	dZn	N: 38				max r2 0.979
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
14-May-91		1	0.0163	-2.136		
3-Oct-91	46	2	0.0425	-1.723	3.829	0.879
18-Apr-94	57	3	0.0686	-1.486	4.043	0.865
3-May-94	71	4	0.0948	-1.312	4.263	0.851
19-May-94	73	5	0.1209	-1.170	4.290	0.847
11-May-95	77	6	0.1471	-1.049	4.344	0.843
24-Jun-94	78	7	0.1732	-0.942	4.357	0.841
24-May-95	82	8	0.1993	-0.844	4.407	0.838
12-Jun-95	85	9	0.2255	-0.754	4.443	0.838
11-Jul-95	85	10	0.2516	-0.669	4.443	0.841
8-Jun-94	86	11	0.2778	-0.589	4.454	0.841
27-Jun-95	88	12	0.3039	-0.513	4.477	0.841
17-Aug-94	89	13	0.3301	-0.440	4.489	0.842
25-Jul-95	89	14	0.3562	-0.369	4.489	0.842
17-Feb-94	95	15	0.3824	-0.299	4.554	0.840
17-Feb-94	95	16	0.4085	-0.231	4.554	0.846
13-Sep-95	97	17	0.4346	-0.165	4.575	0.849
5-Oct-94	98	18	0.4608	-0.098	4.585	0.854
26-Sep-94	100	19	0.4869	-0.033	4.605	0.860
14-Aug-95	101	20	0.5131	0.033	4.615	0.866
21-Jan-94	103	21	0.5392	0.098	4.635	0.873
21-Jan-94	103	22	0.5654	0.165	4.635	0.881
8-Apr-94	104	23	0.5915	0.231	4.644	0.888
8-Apr-94	104	24	0.6176	0.299	4.644	0.893
27-Apr-95	104	25	0.6438	0.369	4.644	0.896
1-Dec-93	108	26	0.6699	0.440	4.682	0.895
21-Dec-93	115	27	0.6961	0.513	4.745	0.895
21-Dec-93	115	28	0.7222	0.589	4.745	0.905
23-Mar-94	121	29	0.7484	0.669	4.796	0.910
14-Dec-94	124	30	0.7745	0.754	4.820	0.924
4-Feb-97	128	31	0.8007	0.844	4.852	0.939
16-Nov-94	129	32	0.8268	0.942	4.860	0.959
29-Oct-93	131	33	0.8529	1.049	4.875	0.974
8-Mar-94	135	34	0.8791	1.170	4.905	0.979
14-Apr-95	152	35	0.9052	1.312	5.024	
22-Mar-95	202	36	0.9314	1.486	5.308	
9-Feb-95	224	37	0.9575	1.723	5.412	
10-Jan-95	402	38	0.9837	2.136	5.996	

update for EV, CV:

dZn		**PC305**			200	200
LN Analysis		**dZn**			1.88	1.88
Discharge, Q		**Q Data, EV=200 cfs CV=1.88**				
Avg:	**200**	**Q Data-based LN**				
SD:	**375**	u	lnQ	Q		
CV:	**1.88**	3	8.2	3740		
Min:	**5**	0	4.54	94		
Max:	**2,033**	-3	0.86	2		
Median:	**67**					
					0.977	0.977
					215.2	215
u=mLn(Q)+b:					2.94	2.94

update for r2, EV, CV: **r2=0.977, EV=215 cfs CV=2.94; max r2=0.98**

r2 u,lnQ:	0.977	u	lnQ	Q
slope, m:	0.664	3	8.75	6340
intercept, b:	-2.816	0	4.24	69
N:	38	-3	-0.28	1
E[Q]:	215.2	Parameter Estimates		
SD[Q]:	633	from LN regression		
CV[Q]:	2.94	update graph label		

N: 38

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.983 r2 forward
update and rank for new data						
3-Oct-91	4.58	1	0.0163	-2.136	1.522	0.977
13-Sep-95	6.32	2	0.0425	-1.723	1.844	0.977
14-Aug-95	12.2	3	0.0686	-1.486	2.501	0.976
1-Dec-93	12.36	4	0.0948	-1.312	2.514	0.980
29-Oct-93	14.04	5	0.1209	-1.170	2.642	0.981
17-Feb-94	16.63	6	0.1471	-1.049	2.811	0.982
17-Feb-94	17.53	7	0.1732	-0.942	2.864	0.983
25-Jul-95	18.52	8	0.1993	-0.844	2.919	0.983
17-Aug-94	19.75	9	0.2255	-0.754	2.983	0.982
26-Sep-94	19.75	10	0.2516	-0.669	2.983	0.981
21-Dec-93	21.18	11	0.2778	-0.589	3.053	0.979
21-Dec-93	22.65	12	0.3039	-0.513	3.120	0.978
24-Jun-94	25.41	13	0.3301	-0.440	3.235	0.976
11-Jul-95	27.47	14	0.3562	-0.369	3.313	0.975
8-Jun-94	39.8	15	0.3824	-0.299	3.684	0.975
21-Jan-94	44.92	16	0.4085	-0.231	3.805	0.973
12-Jun-95	48.62	17	0.4346	-0.165	3.884	0.971
27-Jun-95	51.5	18	0.4608	-0.098	3.942	0.968
21-Jan-94	52.23	19	0.4869	-0.033	3.956	0.965
19-May-94	81.81	20	0.5131	0.033	4.404	0.964
14-May-91	*87.6*	21	0.5392	0.098	4.473	0.962
24-May-95	103.6	22	0.5654	0.165	4.641	0.959
16-Nov-94	131.01	23	0.5915	0.231	4.875	0.958
14-Dec-94	131.01	24	0.6176	0.299	4.875	0.967
3-May-94	135.26	25	0.6438	0.369	4.907	0.973
23-Mar-94	137.43	26	0.6699	0.440	4.923	0.978
5-Oct-94	137.43	27	0.6961	0.513	4.923	0.981
8-Apr-94	143.89	28	0.7222	0.589	4.969	0.980
8-Apr-94	148.7	29	0.7484	0.669	5.002	0.978
8-Mar-94	153.41	30	0.7745	0.754	5.033	0.973
4-Feb-97	221.6	31	0.8007	0.844	5.401	0.979
27-Apr-95	285.77	32	0.8268	0.942	5.655	0.975
14-Apr-95	342.88	33	0.8529	1.049	5.837	0.967
9-Feb-95	360.33	34	0.8791	1.170	5.887	0.954
18-Apr-94	665.65	35	0.9052	1.312	6.501	
10-Jan-95	729.43	36	0.9314	1.486	6.592	
11-May-95	1077.37	37	0.9575	1.723	6.982	
22-Mar-95	2032.81	38	0.9837	2.136	7.617	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.		see comment
Station:	PC305	**Date:** 20-Jun-00
Chemical:	tCd	**Analyst:** J.MacLachlan
Notes:		
Input Discharge and Concentration Data below (in red)		

	Date	Discharge	Concentration	Load			
Avg:	34,557	200	1	4	0.00	0.00	0.00
SD:	362	375	1	7	1.00	1.00	1.00
CV:	0.01	1.88	0.55	1.54			
Min:	33,372	5	0.3	0.04	-0.52	-1.37	-0.64
Max:	35,465	2,033	3	24	4.89	1.98	2.93
Median:	34,536	67	1	2	-0.35	0.00	-0.37

tCd	PC305		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.41)		update r2	**0.41**	0.41	r2:	0.044	0.081
r2 Q,[COC]:	0.41	[tCd]	Q		m:	0.2165	0.00113
slope, m:	0.001	1	4.6		b:	-7281	-34.69
intercept, b:	0.9	1	199.5				
N: 11		2	2033				
LnConc. = mLn(Q)+b (r2=0.753)		update r2	0.75	0.753			
r2 lnQ,ln[COC]:	0.75	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	0.37	-1.40	1.52	0.2	5		
intercept, b:	-1.97	0.01	5.30	1	200		
N: 11		0.88	7.62	2	2,033		

N= 38

	Sampling Date	Q Discharge cfs	tCd Concentration ug/L	tCd Load lbs/day	Ln Q	Ln tCd Conc.	Ln tCd Load	tCd PC305 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data									for graph 0	
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	*14-May-91*	*87.6*			4.47			-0.30		
MFG	*3-Oct-91*	*4.58*			1.52			-0.52		
IDEQ	*29-Oct-93*	*14.04*			2.64			-0.50		
IDEQ	*1-Dec-93*	*12.36*			2.51			-0.50		
IDEQ	*21-Dec-93*	*21.18*			3.05			-0.48		
IDEQ	*21-Dec-93*	*22.65*			3.12			-0.47		
IDEQ	*21-Jan-94*	*44.92*			3.80			-0.41		
IDEQ	*21-Jan-94*	*52.23*			3.96			-0.39		
IDEQ	*17-Feb-94*	*17.53*			2.86			-0.49		
IDEQ	*17-Feb-94*	*16.63*			2.81			-0.49		
IDEQ	*8-Mar-94*	*153.41*			5.03			-0.12		
IDEQ	*23-Mar-94*	*137.43*			4.92			-0.17		
IDEQ	*8-Apr-94*	*148.7*			5.00			-0.14		
IDEQ	*8-Apr-94*	*143.89*			4.97			-0.15		
IDEQ	*18-Apr-94*	*665.65*			6.50			1.24		
IDEQ	3-May-94	135.26	1.3	0.946	4.91	0.26	-0.06	-0.17	0.15	-0.51
IDEQ	*19-May-94*	*81.81*			4.40			-0.31		
IDEQ	*8-Jun-94*	*39.8*			3.68			-0.43		
IDEQ	24-Jun-94	25.41	0.3	0.041	3.24	-1.20	-3.19	-0.46	-1.37	-0.64
IDEQ	17-Aug-94	19.75	0.5	0.053	2.98	-0.69	-2.94	-0.48	-1.07	-0.64
IDEQ	*26-Sep-94*	*19.75*			2.98			-0.48		
IDEQ	*5-Oct-94*	*137.43*			4.92			-0.17		
IDEQ	*16-Nov-94*	*131.01*			4.88			-0.18		
IDEQ	*14-Dec-94*	*131.01*			4.88			-0.18		
IDEQ	10-Jan-95	729.43	1.4	5.494	6.59	0.34	1.70	1.41	0.30	0.17
IDEQ	9-Feb-95	360.33	1.1	2.132	5.89	0.10	0.76	0.43	-0.15	-0.33
IDEQ	22-Mar-95	2032.81	2.2	24.060	7.62	0.79	3.18	4.89	1.52	2.93
IDEQ	14-Apr-95	342.88	2.5	4.612	5.84	0.92	1.53	0.38	1.98	0.04
IDEQ	27-Apr-95	285.77	1.2	1.845	5.66	0.18	0.61	0.23	0.00	-0.37
IDEQ	11-May-95	1077.37	1.4	8.115	6.98	0.34	2.09	2.34	0.30	0.56
IDEQ	24-May-95	103.6	0.8	0.446	4.64	-0.22	-0.81	-0.26	-0.61	-0.58
IDEQ	12-Jun-95	48.62	0.5	0.131	3.88	-0.69	-2.03	-0.40	-1.07	-0.63
IDEQ	*27-Jun-95*	*51.5*			3.94			-0.40		
IDEQ	*11-Jul-95*	*27.47*			3.31			-0.46		
IDEQ	*25-Jul-95*	*18.52*			2.92			-0.48		
IDEQ	*14-Aug-95*	*12.2*			2.50			-0.50		
IDEQ	*13-Sep-95*	*6.32*			1.84			-0.52		
EPAREG10	*4-Feb-97*	*221.6*			5.40			0.06		

tCd

Concentration over time analysis

	tCd	PC305		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.135**	**0.00167**
	Time	**Ln[COC]**	**[COC]**		
first:	14-May-91	-2.24	0.1		
mid:	21-Jul-94	-0.30	1		
last:	4-Feb-97	1.26	4		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	4-Feb-97	0.00	1		

Load over time analysis

	tCd	PC305		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.204**	**0.00663**
	Time	**LnLoad**	**Load**		
first:	14-May-91	-8.85	0.0001		
mid:	21-Jul-94	-1.14	0.321		
last:	4-Feb-97	5.02	151		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	4-Feb-97	0.00	1		

max r2: 0.901

max r2: 0.788

Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.135	0.00167	-58.00	0.204	0.00663	-229.95
0.135	0.00167	-58.00	0.204	0.00663	-229.95
0.135	0.00167	-58.00	0.204	0.00663	-229.95
0.135	0.00167	-58.00	0.204	0.00663	-229.95
0.135	0.00167	-58.00	0.204	0.00663	-229.95
0.135	0.00167	-58.00	0.204	0.00663	-229.95
0.135	0.00167	-58.00	0.204	0.00663	-229.95
0.135	0.00167	-58.00	0.204	0.00663	-229.95
0.135	0.00167	-58.00	0.204	0.00663	-229.95
0.135	0.00167	-58.00	0.204	0.00663	-229.95
0.135	0.00167	-58.00	0.204	0.00663	-229.95
0.135	0.00167	-58.00	0.204	0.00663	-229.95
0.135	0.00167	-58.00	0.204	0.00663	-229.95
0.135	0.00167	-58.00	0.204	0.00663	-229.95
0.135	0.00167	-58.00	0.204	0.00663	-229.95
0.319	0.00320	-111.21	0.305	0.01018	-353.49
0.319	0.00320	-111.21	0.305	0.01018	-353.49
0.319	0.00320	-111.21	0.305	0.01018	-353.49
0.062	0.00154	-53.36	0.098	0.00679	-235.73
0.200	-0.00443	154.29	0.298	-0.01731	603.18
0.200	-0.00443	154.29	0.298	-0.01731	603.18
0.200	-0.00443	154.29	0.298	-0.01731	603.18
0.200	-0.00443	154.29	0.298	-0.01731	603.18
0.200	-0.00443	154.29	0.298	-0.01731	603.18
0.280	-0.00715	248.97	0.328	-0.02437	849.24
0.846	-0.01917	667.83	0.788	-0.05847	2036.91
0.901	-0.02496	869.54	0.659	-0.05984	2084.63

update for EV, CV:

tCd		**PC305**		
LN Analysis		**tCd**		
Load		**Load Data, EV=4.35 lbs/day CV=1.54**		
Avg:	**4**	**Load Data-based LN**		
SD:	**7**	u	ln tCd Load	tCd Load
CV:	**1.54**	3	4.2	65
Min:	**0.04**	0	0.86	2
Max:	**24**	-3	-2.45	0.1
Median:	**2**			
		4	4.35	
		1.54	1.54	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.966, EV=5.78lbs/day CV=107; max r2=0.98**

r2 u,lnLoad:	0.966	u	lnLoad	Load	
slope, m:	0.327	3	6.25	519	
intercept, b:	0.955	0	-2.92	0.0540	
N: 11		-3	-12.09	0.00001	
E[Load]:	5.8	Parameter Estimates			0.966 0.966
SD[Load]:	618	from LN regression			5.8 5.78
CV[Load]:	106.98	update graph label			107.0 107
					max r2
		N: 38			0.978

Date	tCd Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
3-Oct-91		1	0.0163	-2.136		
13-Sep-95		2	0.0425	-1.723		
14-Aug-95		3	0.0686	-1.486		
1-Dec-93		4	0.0948	-1.312		
29-Oct-93		5	0.1209	-1.170		
17-Feb-94		6	0.1471	-1.049		
17-Feb-94		7	0.1732	-0.942		
25-Jul-95		8	0.1993	-0.844		
26-Sep-94		9	0.2255	-0.754		
21-Dec-93		10	0.2516	-0.669		
21-Dec-93		11	0.2778	-0.589		
11-Jul-95		12	0.3039	-0.513		
8-Jun-94		13	0.3301	-0.440		
21-Jan-94		14	0.3562	-0.369		
27-Jun-95		15	0.3824	-0.299		
21-Jan-94		16	0.4085	-0.231		
24-Jun-94	**0.041**	17	0.4346	-0.165	-3.194	0.966
14-May-91		18	0.4608	-0.098		
17-Aug-94	**0.053**	19	0.4869	-0.033	-2.935	0.955
19-May-94		20	0.5131	0.033		
16-Nov-94		21	0.5392	0.098		
14-Dec-94		22	0.5654	0.165		
23-Mar-94		23	0.5915	0.231		
5-Oct-94		24	0.6176	0.299		
8-Apr-94		25	0.6438	0.369		
8-Apr-94		26	0.6699	0.440		
8-Mar-94		27	0.6961	0.513		
12-Jun-95	**0.131**	28	0.7222	0.589	-2.034	0.927
24-May-95	**0.446**	29	0.7484	0.669	-0.808	0.975
18-Apr-94		30	0.7745	0.754		
3-May-94	**0.946**	31	0.8007	0.844	-0.056	0.978
4-Feb-97		32	0.8268	0.942		
27-Apr-95	**1.845**	33	0.8529	1.049	0.612	0.973
9-Feb-95	**2.132**	34	0.8791	1.170	0.757	0.963
14-Apr-95	**4.612**	35	0.9052	1.312	1.529	
10-Jan-95	**5.494**	36	0.9314	1.486	1.704	
11-May-95	**8.115**	37	0.9575	1.723	2.094	
22-Mar-95	**24.060**	38	0.9837	2.136	3.181	

update for EV, CV:

tCd		PC305		1	1.2
LN Analysis		tCd		0.55	0.547
Concentration		Conc. Data, EV=1.2 ug/L CV=0.547			
Avg:	1	Data-based LN			
SD:	1	u	ln[tCd]	[tCd]	
CV:	0.55	3	1.6	5	
Min:	0.3	0	0.05	1	
Max:	3	-3	-1.48	0.2	
Median:	1				

					0.795	0.795
u=m.Ln(Conc.)+b:					0.6	0.621
update for r2, EV, CV:	r2=0.795, EV=0.621 ug/L CV=2.74; max r2=0.97				2.744	2.74
	r2 u,lnConc:	0.795	u	lnConc.	Conc.	
	slope, m:	0.683	3	2.84	17	
	intercept, b:	1.057	0	-1.55	0.213	
	N:	11	-3	-5.94	0.003	
	E[Conc]:	0.6	Parameter Estimates			
	SD[Conc]:	2	from LN regression			
	CV[Conc]:	2.74	update graph label			

	tCd	N: 38				max r2 0.967
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
14-May-91		1	0.0163	-2.136		
3-Oct-91		2	0.0425	-1.723		
29-Oct-93		3	0.0686	-1.486		
1-Dec-93		4	0.0948	-1.312		
21-Dec-93		5	0.1209	-1.170		
21-Dec-93		6	0.1471	-1.049		
21-Jan-94		7	0.1732	-0.942		
21-Jan-94		8	0.1993	-0.844		
17-Feb-94		9	0.2255	-0.754		
17-Feb-94		10	0.2516	-0.669		
8-Mar-94		11	0.2778	-0.589		
23-Mar-94		12	0.3039	-0.513		
8-Apr-94		13	0.3301	-0.440		
8-Apr-94		14	0.3562	-0.369		
18-Apr-94		15	0.3824	-0.299		
19-May-94		16	0.4085	-0.231		
8-Jun-94		17	0.4346	-0.165		
26-Sep-94		18	0.4608	-0.098		
5-Oct-94		19	0.4869	-0.033		
16-Nov-94		20	0.5131	0.033		
14-Dec-94		21	0.5392	0.098		
27-Jun-95		22	0.5654	0.165		
11-Jul-95		23	0.5915	0.231		
25-Jul-95		24	0.6176	0.299		
14-Aug-95		25	0.6438	0.369		
13-Sep-95		26	0.6699	0.440		
24-Jun-94	0.3	27	0.6961	0.513	-1.204	0.795
17-Aug-94	0.5	28	0.7222	0.589	-0.693	0.827
12-Jun-95	0.5	29	0.7484	0.669	-0.693	0.816
24-May-95	0.8	30	0.7745	0.754	-0.223	0.922
9-Feb-95	1.1	31	0.8007	0.844	0.095	0.967
27-Apr-95	1.2	32	0.8268	0.942	0.182	0.959
3-May-94	1.3	33	0.8529	1.049	0.262	0.947
10-Jan-95	1.4	34	0.8791	1.170	0.336	0.932
11-May-95	1.4	35	0.9052	1.312	0.336	
4-Feb-97		36	0.9314	1.486		
22-Mar-95	2.2	37	0.9575	1.723	0.788	
14-Apr-95	2.5	38	0.9837	2.136	0.916	

update for EV, CV:

tCd		**PC305**			200	200
LN Analysis		**tCd**			1.88	1.88
Discharge, Q		**Q Data, EV=200 cfs CV=1.88**				
Avg:	**200**	**Q Data-based LN**				
SD:	**375**	u	lnQ	Q		
CV:	**1.88**	3	8.2	3740		
Min:	**5**	0	4.54	94		
Max:	**2,033**	-3	0.86	2		
Median:	**67**					
					0.977	0.977
					215.2	215
	u=mLn(Q)+b:				2.94	2.94

update for r2, EV, CV: **r2=0.977, EV=215 cfs CV=2.94; max r2=0.98**

r2 u,lnQ:	0.977	u	lnQ	Q
slope, m:	0.664	3	8.75	6340
intercept, b:	-2.816	0	4.24	69
N:	38	-3	-0.28	1
E[Q]:	215.2	Parameter Estimates		
SD[Q]:	633	from LN regression		
CV[Q]:	2.94	update graph label		

N: 38

max r2 0.983

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
3-Oct-91	*4.58*	1	0.0163	-2.136	1.522	0.977
13-Sep-95	*6.32*	2	0.0425	-1.723	1.844	0.977
14-Aug-95	*12.2*	3	0.0686	-1.486	2.501	0.976
1-Dec-93	*12.36*	4	0.0948	-1.312	2.514	0.980
29-Oct-93	*14.04*	5	0.1209	-1.170	2.642	0.981
17-Feb-94	*16.63*	6	0.1471	-1.049	2.811	0.982
17-Feb-94	*17.53*	7	0.1732	-0.942	2.864	0.983
25-Jul-95	*18.52*	8	0.1993	-0.844	2.919	0.983
17-Aug-94	19.75	9	0.2255	-0.754	2.983	0.982
26-Sep-94	*19.75*	10	0.2516	-0.669	2.983	0.981
21-Dec-93	*21.18*	11	0.2778	-0.589	3.053	0.979
21-Dec-93	*22.65*	12	0.3039	-0.513	3.120	0.978
24-Jun-94	25.41	13	0.3301	-0.440	3.235	0.976
11-Jul-95	*27.47*	14	0.3562	-0.369	3.313	0.975
8-Jun-94	*39.8*	15	0.3824	-0.299	3.684	0.975
21-Jan-94	*44.92*	16	0.4085	-0.231	3.805	0.973
12-Jun-95	48.62	17	0.4346	-0.165	3.884	0.971
27-Jun-95	*51.5*	18	0.4608	-0.098	3.942	0.968
21-Jan-94	*52.23*	19	0.4869	-0.033	3.956	0.965
19-May-94	*81.81*	20	0.5131	0.033	4.404	0.964
14-May-91	*87.6*	21	0.5392	0.098	4.473	0.962
24-May-95	103.6	22	0.5654	0.165	4.641	0.959
16-Nov-94	*131.01*	23	0.5915	0.231	4.875	0.958
14-Dec-94	*131.01*	24	0.6176	0.299	4.875	0.967
3-May-94	135.26	25	0.6438	0.369	4.907	0.973
23-Mar-94	*137.43*	26	0.6699	0.440	4.923	0.978
5-Oct-94	*137.43*	27	0.6961	0.513	4.923	0.981
8-Apr-94	*143.89*	28	0.7222	0.589	4.969	0.980
8-Apr-94	*148.7*	29	0.7484	0.669	5.002	0.978
8-Mar-94	*153.41*	30	0.7745	0.754	5.033	0.973
4-Feb-97	*221.6*	31	0.8007	0.844	5.401	0.979
27-Apr-95	285.77	32	0.8268	0.942	5.655	0.975
14-Apr-95	342.88	33	0.8529	1.049	5.837	0.967
9-Feb-95	360.33	34	0.8791	1.170	5.887	0.954
18-Apr-94	*665.65*	35	0.9052	1.312	6.501	
10-Jan-95	729.43	36	0.9314	1.486	6.592	
11-May-95	1077.37	37	0.9575	1.723	6.982	
22-Mar-95	2032.81	38	0.9837	2.136	7.617	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: PC305 **Date:** 20-Jun-00
Chemical: tPb **Analyst:** J.MacLachlan
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,557	200	9	20	0.00	0.00	0.00
SD:	362	375	5	35	1.00	1.00	1.00
CV:	0.01	1.88	0.56	1.70			
Min:	33,372	5	5	0.3	-0.52	-0.83	-0.58
Max:	35,465	2,033	24	98	4.89	2.81	2.26
Median:	34,536	67	8	2	-0.35	-0.26	-0.53

tPb PC305			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.0656)		update r2	0.07	0.0656	r2:	0.044	0.081
r2 Q,[COC]:	0.07	[tPb]	Q		m:	0.2165	0.00113
slope, m:	0.002	9	4.6		b:	-7281	-34.69
intercept, b:	8.6	9	199.5				
N: 12		13	2033				
LnConc. = mLn(Q)+b (r2=0.102)			update r2	0.10	0.102		
r2 lnQ,ln[COC]:	0.10	ln[tPb]	ln Q	[tPb]	Q		
slope, m:	0.08	1.87	1.52	6	5		
intercept, b:	1.74	2.19	5.30	9	200		
N: 12		2.39	7.62	11	2,033		

N= 38

	Sampling Date	Q Discharge cfs	tPb Concentration ug/L	tPb Load lbs/day	Ln Q	Ln tPb Conc.	Ln tPb Load	for graph: tPb 0 PC305 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data										
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	*14-May-91*	*87.6*			4.47			-0.30		
MFG	*3-Oct-91*	*4.58*			1.52			-0.52		
IDEQ	29-Oct-93	14.04	6	0.453	2.64	1.79	-0.79	-0.50	-0.64	-0.58
IDEQ	1-Dec-93	12.36	13	0.864	2.51	2.56	-0.15	-0.50	0.70	-0.56
IDEQ	*21-Dec-93*	*21.18*			3.05			-0.48		
IDEQ	*21-Dec-93*	*22.65*			3.12			-0.47		
IDEQ	*21-Jan-94*	*44.92*			3.80			-0.41		
IDEQ	*21-Jan-94*	*52.23*			3.96			-0.39		
IDEQ	*17-Feb-94*	*17.53*			2.86			-0.49		
IDEQ	*17-Feb-94*	*16.63*			2.81			-0.49		
IDEQ	*8-Mar-94*	*153.41*			5.03			-0.12		
IDEQ	*23-Mar-94*	*137.43*			4.92			-0.17		
IDEQ	*8-Apr-94*	*148.7*			5.00			-0.14		
IDEQ	*8-Apr-94*	*143.89*			4.97			-0.15		
IDEQ	*18-Apr-94*	*665.65*			6.50			1.24		
IDEQ	*3-May-94*	*135.26*			4.91			-0.17		
IDEQ	19-May-94	81.81	6	2.641	4.40	1.79	0.97	-0.31	-0.64	-0.51
IDEQ	8-Jun-94	39.8	5	1.071	3.68	1.61	0.07	-0.43	-0.83	-0.56
IDEQ	*24-Jun-94*	*25.41*			3.24			-0.46		
IDEQ	*17-Aug-94*	*19.75*			2.98			-0.48		
IDEQ	26-Sep-94	19.75	8	0.850	2.98	2.08	-0.16	-0.48	-0.26	-0.57
IDEQ	*5-Oct-94*	*137.43*			4.92			-0.17		
IDEQ	*16-Nov-94*	*131.01*			4.88			-0.18		
IDEQ	*14-Dec-94*	*131.01*			4.88			-0.18		
IDEQ	10-Jan-95	729.43	24	94.184	6.59	3.18	4.55	1.41	2.81	2.14
IDEQ	9-Feb-95	360.33	10	19.386	5.89	2.30	2.96	0.43	0.13	-0.03
IDEQ	22-Mar-95	2032.81	9	98.429	7.62	2.20	4.59	4.89	-0.07	2.26
IDEQ	14-Apr-95	342.88	5	9.223	5.84	1.61	2.22	0.38	-0.83	-0.32
IDEQ	*27-Apr-95*	*285.77*			5.66			0.23		
IDEQ	*11-May-95*	*1077.37*			6.98			2.34		
IDEQ	*24-May-95*	*103.6*			4.64			-0.26		
IDEQ	12-Jun-95	48.62	5	1.308	3.88	1.61	0.27	-0.40	-0.83	-0.55
IDEQ	*27-Jun-95*	*51.5*			3.94			-0.40		
IDEQ	*11-Jul-95*	*27.47*			3.31			-0.46		
IDEQ	*25-Jul-95*	*18.52*			2.92			-0.48		
IDEQ	*14-Aug-95*	*12.2*			2.50			-0.50		
IDEQ	13-Sep-95	6.32	8	0.272	1.84	2.08	-1.30	-0.52	-0.26	-0.58
EPAREG10	4-Feb-97	221.6	13.1	15.618	5.40	2.57	2.75	0.06	0.72	-0.14

tPb

Concentration over time analysis

	tPb	PC305		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.048**	**0.00033**
	Time	**Ln[COC]**	**[COC]**		
first:	14-May-91	1.68	5		
mid:	21-Jul-94	2.06	8		
last:	4-Feb-97	2.36	11		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	4-Feb-97	0.00	1		

Load over time analysis

	tPb	PC305		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.139**	**0.00234**
	Time	**LnLoad**	**Load**		
first:	14-May-91	-1.79	0		
mid:	21-Jul-94	0.94	3		
last:	4-Feb-97	3.11	22		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	4-Feb-97	0.00	1		

	max r2: 1.000			max r2: 1.000		
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.048	0.00033	-9.23	0.139	0.00234	-79.96
	0.048	0.00033	-9.23	0.139	0.00234	-79.96
	0.048	0.00033	-9.23	0.139	0.00234	-79.96
	0.021	0.00023	-6.01	0.074	0.00178	-60.38
	0.110	0.00059	-18.28	0.027	0.00119	-39.61
	0.110	0.00059	-18.28	0.027	0.00119	-39.61
	0.110	0.00059	-18.28	0.027	0.00119	-39.61
	0.110	0.00059	-18.28	0.027	0.00119	-39.61
	0.110	0.00059	-18.28	0.027	0.00119	-39.61
	0.110	0.00059	-18.28	0.027	0.00119	-39.61
	0.110	0.00059	-18.28	0.027	0.00119	-39.61
	0.110	0.00059	-18.28	0.027	0.00119	-39.61
	0.110	0.00059	-18.28	0.027	0.00119	-39.61
	0.110	0.00059	-18.28	0.027	0.00119	-39.61
	0.110	0.00059	-18.28	0.027	0.00119	-39.61
	0.110	0.00059	-18.28	0.027	0.00119	-39.61
	0.075	0.00051	-15.75	0.016	0.00099	-32.66
	0.015	0.00024	-6.19	0.000	-0.00006	4.05
	0.015	0.00024	-6.19	0.000	-0.00006	4.05
	0.015	0.00024	-6.19	0.000	-0.00006	4.05
	0.009	0.00020	-4.62	0.039	-0.00164	59.38
	0.009	0.00020	-4.62	0.039	-0.00164	59.38
	0.009	0.00020	-4.62	0.039	-0.00164	59.38
	0.009	0.00020	-4.62	0.039	-0.00164	59.38
	0.319	0.00081	-26.12	0.003	-0.00045	17.47
	0.570	0.00110	-36.35	0.001	0.00026	-7.28
	0.901	0.00144	-48.63	0.213	0.00284	-98.38
	0.872	0.00139	-46.53	0.737	0.00540	-188.95
	0.872	0.00139	-46.53	0.737	0.00540	-188.95
	0.872	0.00139	-46.53	0.737	0.00540	-188.95
	0.872	0.00139	-46.53	0.737	0.00540	-188.95
	1.000	0.00097	-31.72	1.000	0.00794	-278.91
	1.000	0.00097	-31.72	1.000	0.00794	-278.91

update for EV, CV:

tPb
LN Analysis
Load

PC305
tPb
Load Data, EV=20.4 lbs/day CV=1.7
Load Data-based LN

		u	ln tPb Load	tPb Load
Avg:	**20**			
SD:	**35**	3	5.8	340
CV:	**1.70**	0	2.34	10
Min:	**0.3**	-3	-1.16	0.3
Max:	**98**			
Median:	**2**			

20	20.4
1.70	1.7

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.923, EV=12.3lbs/day CV=19.9; max r2=0.96**

r2 u,lnLoad:	0.923	u	lnLoad	Load		
slope, m:	0.409	3	6.85	947		
intercept, b:	0.198	0	-0.48	1		
N:	12	-3	-7.82	0.0004		
E[Load]:	12.3	Parameter Estimates			0.923	0.923
SD[Load]:	244	from LN regression			12.3	12.3
CV[Load]:	19.89	update graph label			19.9	19.9
					max r2	
		N: 38			0.955	

Date	tPb Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
3-Oct-91		1	0.0163	-2.136		
14-Aug-95		2	0.0425	-1.723		
17-Feb-94		3	0.0686	-1.486		
17-Feb-94		4	0.0948	-1.312		
25-Jul-95		5	0.1209	-1.170		
17-Aug-94		6	0.1471	-1.049		
21-Dec-93		7	0.1732	-0.942		
21-Dec-93		8	0.1993	-0.844		
24-Jun-94		9	0.2255	-0.754		
11-Jul-95		10	0.2516	-0.669		
13-Sep-95	**0.272**	11	0.2778	-0.589	-1.302	0.923
21-Jan-94		12	0.3039	-0.513		
27-Jun-95		13	0.3301	-0.440		
21-Jan-94		14	0.3562	-0.369		
29-Oct-93	**0.453**	15	0.3824	-0.299	-0.791	0.913
24-May-95		16	0.4085	-0.231		
14-May-91		17	0.4346	-0.165		
26-Sep-94	**0.850**	18	0.4608	-0.098	-0.162	0.902
1-Dec-93	**0.864**	19	0.4869	-0.033	-0.146	0.912
16-Nov-94		20	0.5131	0.033		
14-Dec-94		21	0.5392	0.098		
3-May-94		22	0.5654	0.165		
23-Mar-94		23	0.5915	0.231		
5-Oct-94		24	0.6176	0.299		
8-Apr-94		25	0.6438	0.369		
8-Apr-94		26	0.6699	0.440		
8-Mar-94		27	0.6961	0.513		
8-Jun-94	**1.071**	28	0.7222	0.589	0.068	0.955
12-Jun-95	**1.308**	29	0.7484	0.669	0.268	0.941
27-Apr-95		30	0.7745	0.754		
19-May-94	**2.641**	31	0.8007	0.844	0.971	0.913
18-Apr-94		32	0.8268	0.942		
11-May-95		33	0.8529	1.049		
14-Apr-95	**9.223**	34	0.8791	1.170	2.222	0.851
4-Feb-97	**15.618**	35	0.9052	1.312	2.748	
9-Feb-95	**19.386**	36	0.9314	1.486	2.965	
10-Jan-95	**94.184**	37	0.9575	1.723	4.545	
22-Mar-95	**98.429**	38	0.9837	2.136	4.589	

update for EV, CV:

tPb		PC305	9	9.34
LN Analysis		tPb	0.56	0.557

Concentration — Conc. Data, EV=9.34 ug/L CV=0.557

		Data-based LN		
Avg:	9	u	ln[tPb]	[tPb]
SD:	5	3	3.7	39
CV:	0.56	0	2.10	8
Min:	5	-3	0.54	2
Max:	24			
Median:	8			

					0.976	0.976
u=mLn(Conc.)+b:					4.6	4.56
update for r2, EV, CV:	r2=0.976, EV=4.56 ug/L CV=1.3; max r2=0.98				1.296	1.3
	r2 u,lnConc:	0.976	u	lnConc.	Conc.	
	slope, m:	1.007	3	4.00	55	
	intercept, b:	-1.031	0	1.02	3	
	N:	12	-3	-1.95	0.1	
	E[Conc]:	4.6	Parameter Estimates			
	SD[Conc]:	6	from LN regression			
	CV[Conc]:	1.30	update graph label			

	tPb	N: 38				max r2 0.976
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
3-Oct-91		1	0.0163	-2.136		
21-Dec-93		2	0.0425	-1.723		
21-Dec-93		3	0.0686	-1.486		
21-Jan-94		4	0.0948	-1.312		
21-Jan-94		5	0.1209	-1.170		
17-Feb-94		6	0.1471	-1.049		
17-Feb-94		7	0.1732	-0.942		
8-Mar-94		8	0.1993	-0.844		
23-Mar-94		9	0.2255	-0.754		
8-Apr-94		10	0.2516	-0.669		
8-Apr-94		11	0.2778	-0.589		
18-Apr-94		12	0.3039	-0.513		
3-May-94		13	0.3301	-0.440		
24-Jun-94		14	0.3562	-0.369		
17-Aug-94		15	0.3824	-0.299		
5-Oct-94		16	0.4085	-0.231		
16-Nov-94		17	0.4346	-0.165		
14-Dec-94		18	0.4608	-0.098		
27-Apr-95		19	0.4869	-0.033		
11-May-95		20	0.5131	0.033		
24-May-95		21	0.5392	0.098		
27-Jun-95		22	0.5654	0.165		
11-Jul-95		23	0.5915	0.231		
25-Jul-95		24	0.6176	0.299		
14-Aug-95		25	0.6438	0.369		
14-May-91		26	0.6699	0.440		
8-Jun-94	5	27	0.6961	0.513	1.609	0.976
14-Apr-95	5	28	0.7222	0.589	1.609	0.975
12-Jun-95	5	29	0.7484	0.669	1.609	0.970
29-Oct-93	6	30	0.7745	0.754	1.792	0.967
19-May-94	6	31	0.8007	0.844	1.792	0.960
26-Sep-94	8	32	0.8268	0.942	2.079	0.956
13-Sep-95	8	33	0.8529	1.049	2.079	0.960
22-Mar-95	9	34	0.8791	1.170	2.197	0.947
9-Feb-95	10	35	0.9052	1.312	2.303	
1-Dec-93	13	36	0.9314	1.486	2.565	
4-Feb-97	13.1	37	0.9575	1.723	2.573	
10-Jan-95	24	38	0.9837	2.136	3.178	

update for EV, CV:

tPb		**PC305**			200	200
LN Analysis		**tPb**			1.88	1.88
Discharge, Q		**Q Data, EV=200 cfs CV=1.88**				
Avg:	**200**	**Q Data-based LN**				
SD:	**375**	u	lnQ	Q		
CV:	**1.88**	3	8.2	3740		
Min:	**5**	0	4.54	94		
Max:	**2,033**	-3	0.86	2		
Median:	**67**					

					0.977	0.977
					215.2	215
u=mLn(Q)+b:					2.94	2.94

update for r2, EV, CV: **r2=0.977, EV=215 cfs CV=2.94; max r2=0.98**

r2 u,lnQ:	0.977	u	lnQ	Q
slope, m:	0.664	3	8.75	6340
intercept, b:	-2.816	0	4.24	69
N:	38	-3	-0.28	1
E[Q]:	215.2	Parameter Estimates		
SD[Q]:	633	from LN regression		
CV[Q]:	2.94	update graph label		

N: 38

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.983 r2 forward
update and rank for new data						
3-Oct-91	*4.58*	1	0.0163	-2.136	1.522	0.977
13-Sep-95	6.32	2	0.0425	-1.723	1.844	0.977
14-Aug-95	*12.2*	3	0.0686	-1.486	2.501	0.976
1-Dec-93	12.36	4	0.0948	-1.312	2.514	0.980
29-Oct-93	14.04	5	0.1209	-1.170	2.642	0.981
17-Feb-94	*16.63*	6	0.1471	-1.049	2.811	0.982
17-Feb-94	*17.53*	7	0.1732	-0.942	2.864	0.983
25-Jul-95	*18.52*	8	0.1993	-0.844	2.919	0.983
17-Aug-94	*19.75*	9	0.2255	-0.754	2.983	0.982
26-Sep-94	19.75	10	0.2516	-0.669	2.983	0.981
21-Dec-93	*21.18*	11	0.2778	-0.589	3.053	0.979
21-Dec-93	*22.65*	12	0.3039	-0.513	3.120	0.978
24-Jun-94	*25.41*	13	0.3301	-0.440	3.235	0.976
11-Jul-95	*27.47*	14	0.3562	-0.369	3.313	0.975
8-Jun-94	39.8	15	0.3824	-0.299	3.684	0.975
21-Jan-94	*44.92*	16	0.4085	-0.231	3.805	0.973
12-Jun-95	48.62	17	0.4346	-0.165	3.884	0.971
27-Jun-95	*51.5*	18	0.4608	-0.098	3.942	0.968
21-Jan-94	*52.23*	19	0.4869	-0.033	3.956	0.965
19-May-94	81.81	20	0.5131	0.033	4.404	0.964
14-May-91	*87.6*	21	0.5392	0.098	4.473	0.962
24-May-95	*103.6*	22	0.5654	0.165	4.641	0.959
16-Nov-94	*131.01*	23	0.5915	0.231	4.875	0.958
14-Dec-94	*131.01*	24	0.6176	0.299	4.875	0.967
3-May-94	*135.26*	25	0.6438	0.369	4.907	0.973
23-Mar-94	*137.43*	26	0.6699	0.440	4.923	0.978
5-Oct-94	*137.43*	27	0.6961	0.513	4.923	0.981
8-Apr-94	*143.89*	28	0.7222	0.589	4.969	0.980
8-Apr-94	*148.7*	29	0.7484	0.669	5.002	0.978
8-Mar-94	*153.41*	30	0.7745	0.754	5.033	0.973
4-Feb-97	221.6	31	0.8007	0.844	5.401	0.979
27-Apr-95	*285.77*	32	0.8268	0.942	5.655	0.975
14-Apr-95	342.88	33	0.8529	1.049	5.837	0.967
9-Feb-95	360.33	34	0.8791	1.170	5.887	0.954
18-Apr-94	*665.65*	35	0.9052	1.312	6.501	
10-Jan-95	729.43	36	0.9314	1.486	6.592	
11-May-95	*1077.37*	37	0.9575	1.723	6.982	
22-Mar-95	2032.81	38	0.9837	2.136	7.617	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: PC305 **Date:** 20-Jun-00
Chemical: tZn **Analyst:** J.MacLachlan
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,557	200	114	181		0.00	0.00	0.00
SD:	362	375	57	447		1.00	1.00	1.00
CV:	0.01	1.88	0.50	2.47				
Min:	33,372	5	30	1		-0.52	-1.47	-0.40
Max:	35,465	2,033	374	2,384		4.89	4.55	4.93
Median:	34,536	67	100	30		-0.35	-0.24	-0.34

tZn PC305 : Concentration v. Discharge, Q — Q = mTime +b — LnQ = mTime +b

Conc. = mQ+b (r2=0.24)	update r2	0.24	0.24		r2:	0.044	0.081	
r2 Q,[COC]:	0.24	[tZn]	Q		m:	0.2165	0.00113	
slope, m:	0.1	99	4.6		b:	-7281	-34.69	
intercept, b:	99.0	114	199.5					
N: 37		249	2033					
LnConc. = mLn(Q)+b (r2=0.264)	update r2		0.26	0.264				
r2 lnQ,ln[COC]:	0.26	ln[tZn]	ln Q	[tZn]	Q			
slope, m:	0.14	4.26	1.52	71	5			
intercept, b:	4.05	4.80	5.30	121	200			
N: 37		5.13	7.62	169	2,033			

N= 38

	Sampling Date	Q Discharge cfs	tZn Concentration ug/L	tZn Load lbs/day	Ln Q	Ln tZn Conc.	Ln tZn Load	for graph 0 tZn PC305 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data										
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	*14-May-91*	*87.6*			4.47			-0.30		
MFG	3-Oct-91	4.58	30	0.7	1.52	3.40	-0.30	-0.52	-1.47	-0.40
IDEQ	29-Oct-93	14.04	117	8.8	2.64	4.76	2.18	-0.50	0.05	-0.39
IDEQ	1-Dec-93	12.36	107	7.1	2.51	4.67	1.96	-0.50	-0.12	-0.39
IDEQ	21-Dec-93	21.18	124	14.1	3.05	4.82	2.65	-0.48	0.18	-0.37
IDEQ	21-Dec-93	22.65	124	15.1	3.12	4.82	2.72	-0.47	0.18	-0.37
IDEQ	21-Jan-94	44.92	105	25.4	3.80	4.65	3.23	-0.41	-0.16	-0.35
IDEQ	21-Jan-94	52.23	105	29.5	3.96	4.65	3.38	-0.39	-0.16	-0.34
IDEQ	17-Feb-94	17.53	91	8.6	2.86	4.51	2.15	-0.49	-0.40	-0.39
IDEQ	17-Feb-94	16.63	91	8.1	2.81	4.51	2.10	-0.49	-0.40	-0.39
IDEQ	8-Mar-94	153.41	133	109.8	5.03	4.89	4.70	-0.12	0.33	-0.16
IDEQ	23-Mar-94	137.43	117	86.5	4.92	4.76	4.46	-0.17	0.05	-0.21
IDEQ	8-Apr-94	148.7	96	76.8	5.00	4.56	4.34	-0.14	-0.31	-0.23
IDEQ	8-Apr-94	143.89	96	74.3	4.97	4.56	4.31	-0.15	-0.31	-0.24
IDEQ	18-Apr-94	665.65	60	214.9	6.50	4.09	5.37	1.24	-0.95	0.08
IDEQ	3-May-94	135.26	74	53.8	4.91	4.30	3.99	-0.17	-0.70	-0.28
IDEQ	19-May-94	81.81	76	33.5	4.40	4.33	3.51	-0.31	-0.67	-0.33
IDEQ	8-Jun-94	39.8	83	17.8	3.68	4.42	2.88	-0.43	-0.54	-0.37
IDEQ	24-Jun-94	25.41	68	9.3	3.24	4.22	2.23	-0.46	-0.81	-0.38
IDEQ	17-Aug-94	19.75	89	9.5	2.98	4.49	2.25	-0.48	-0.44	-0.38
IDEQ	26-Sep-94	19.75	99	10.5	2.98	4.60	2.35	-0.48	-0.26	-0.38
IDEQ	5-Oct-94	137.43	100	73.9	4.92	4.61	4.30	-0.17	-0.24	-0.24
IDEQ	16-Nov-94	131.01	110	77.5	4.88	4.70	4.35	-0.18	-0.07	-0.23
IDEQ	14-Dec-94	131.01	129	90.9	4.88	4.86	4.51	-0.18	0.26	-0.20
IDEQ	10-Jan-95	729.43	374	1467.7	6.59	5.92	7.29	1.41	4.55	2.88
IDEQ	9-Feb-95	360.33	225	436.2	5.89	5.42	6.08	0.43	1.94	0.57
IDEQ	22-Mar-95	2032.81	218	2384.2	7.62	5.38	7.78	4.89	1.82	4.93
IDEQ	14-Apr-95	342.88	178	328.4	5.84	5.18	5.79	0.38	1.12	0.33
IDEQ	27-Apr-95	285.77	110	169.1	5.66	4.70	5.13	0.23	-0.07	-0.03
IDEQ	11-May-95	1077.37	96	556.4	6.98	4.56	6.32	2.34	-0.31	0.84
IDEQ	24-May-95	103.6	84	46.8	4.64	4.43	3.85	-0.26	-0.53	-0.30
IDEQ	12-Jun-95	48.62	87	22.8	3.88	4.47	3.12	-0.40	-0.47	-0.35
IDEQ	27-Jun-95	51.5	87	24.1	3.94	4.47	3.18	-0.40	-0.47	-0.35
IDEQ	11-Jul-95	27.47	86	12.7	3.31	4.45	2.54	-0.46	-0.49	-0.38
IDEQ	25-Jul-95	18.52	89	8.9	2.92	4.49	2.18	-0.48	-0.44	-0.39
IDEQ	14-Aug-95	12.2	102	6.7	2.50	4.62	1.90	-0.50	-0.21	-0.39
IDEQ	13-Sep-95	6.32	104	3.5	1.84	4.64	1.26	-0.52	-0.17	-0.40
EPAREG10	4-Feb-97	221.6	153	182.4	5.40	5.03	5.21	0.06	0.68	0.00

tZn

Concentration over time analysis

	tZn	PC305		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.198**	**0.00058**
	Time	**Ln[COC]**	**[COC]**		
first:	14-May-91	3.94	52		
mid:	21-Jul-94	4.62	101		
last:	4-Feb-97	5.16	173		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	4-Feb-97	0.00	1		

Load over time analysis

	tZn	PC305			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.167**	**0.00225**
	Time	**LnLoad**	**Load**		
first:	14-May-91	0.92	3		
mid:	21-Jul-94	3.54	34		
last:	4-Feb-97	5.62	277		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	4-Feb-97	0.00	1		

	max r2:	0.931		max r2:	0.840	
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.198	0.00058	-15.37	0.167	0.00225	-74.05
	0.198	0.00058	-15.37	0.167	0.00225	-74.05
	0.043	0.00028	-5.13	0.060	0.00152	-48.78
	0.050	0.00031	-6.13	0.046	0.00135	-42.83
	0.052	0.00033	-6.65	0.032	0.00112	-35.04
	0.062	0.00037	-8.01	0.024	0.00098	-30.18
	0.075	0.00041	-9.62	0.016	0.00083	-24.87
	0.077	0.00043	-10.26	0.013	0.00075	-22.13
	0.081	0.00045	-11.03	0.010	0.00069	-19.86
	0.075	0.00045	-10.84	0.003	0.00038	-9.09
	0.069	0.00044	-10.61	0.000	0.00000	4.27
	0.089	0.00051	-13.16	0.000	0.00012	-0.15
	0.102	0.00057	-15.05	0.001	0.00021	-3.37
	0.100	0.00058	-15.51	0.001	0.00029	-6.11
	0.098	0.00060	-16.09	0.002	0.00038	-9.24
	0.062	0.00048	-11.83	0.010	0.00081	-24.19
	0.040	0.00039	-8.84	0.011	0.00089	-26.82
	0.021	0.00029	-5.31	0.008	0.00080	-23.97
	0.009	0.00019	-1.95	0.002	0.00044	-11.35
	0.000	-0.00003	5.66	0.001	-0.00033	15.59
	0.005	-0.00016	10.33	0.015	-0.00120	46.06
	0.014	-0.00026	14.04	0.045	-0.00214	79.04
	0.028	-0.00040	18.74	0.052	-0.00243	89.15
	0.041	-0.00050	22.29	0.058	-0.00269	98.28
	0.043	-0.00054	23.60	0.062	-0.00289	105.22
	0.001	-0.00006	6.70	0.024	-0.00173	64.54
	0.021	0.00026	-4.23	0.007	-0.00095	37.27
	0.173	0.00056	-14.84	0.004	0.00058	-16.54
	0.720	0.00081	-23.62	0.029	0.00147	-48.04
	0.891	0.00090	-26.84	0.076	0.00227	-76.06
	0.931	0.00094	-28.43	0.397	0.00379	-129.75
	0.929	0.00093	-27.91	0.582	0.00450	-154.77
	0.925	0.00092	-27.56	0.681	0.00499	-171.96
	0.923	0.00090	-26.76	0.840	0.00568	-196.33

update for EV, CV:

tZn **PC305**

LN Analysis **tZn**

Load **Load Data, EV=181 lbs/day CV=2.47**

Avg:	**181**	**Load Data-based LN**		
SD:	**447**	u	ln tZn Load	tZn Load
CV:	**2.47**	3	8.4	4532
Min:	**0.7**	0	4.22	68
Max:	**2,384**	-3	0.02	1.0
Median:	**30**			
		181	181	
		2.47	2.47	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.971, EV=188lbs/day CV=5.14; max r2=0.99**

r2 u,lnLoad:	0.971	u	lnLoad	Load	
slope, m:	0.550	3	9.04	8448	
intercept, b:	-1.969	0	3.58	36	
N: 37		-3	-1.88	0.2	
E[Load]:	188.3	Parameter Estimates			0.971 0.971
SD[Load]:	968	from LN regression			188.3 188
CV[Load]:	5.14	update graph label			5.1 5.14

N: 38

Date	tZn Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.991 r2 forward
update and rank for new data						
3-Oct-91	**0.7**	1	0.0163	-2.136	-0.302	0.971
13-Sep-95	**3.5**	2	0.0425	-1.723	1.263	0.966
14-May-91		3	0.0686	-1.486		
14-Aug-95	**6.7**	4	0.0948	-1.312	1.901	0.970
1-Dec-93	**7.1**	5	0.1209	-1.170	1.962	0.976
17-Feb-94	**8.1**	6	0.1471	-1.049	2.097	0.980
17-Feb-94	**8.6**	7	0.1732	-0.942	2.150	0.985
29-Oct-93	**8.8**	8	0.1993	-0.844	2.179	0.988
25-Jul-95	**8.9**	9	0.2255	-0.754	2.182	0.990
24-Jun-94	**9.3**	10	0.2516	-0.669	2.230	0.991
17-Aug-94	**9.5**	11	0.2778	-0.589	2.247	0.991
26-Sep-94	**10.5**	12	0.3039	-0.513	2.353	0.990
11-Jul-95	**12.7**	13	0.3301	-0.440	2.542	0.989
21-Dec-93	**14.1**	14	0.3562	-0.369	2.648	0.989
21-Dec-93	**15.1**	15	0.3824	-0.299	2.715	0.988
8-Jun-94	**17.8**	16	0.4085	-0.231	2.878	0.987
12-Jun-95	**22.8**	17	0.4346	-0.165	3.125	0.985
27-Jun-95	**24.1**	18	0.4608	-0.098	3.182	0.984
21-Jan-94	**25.4**	19	0.4869	-0.033	3.234	0.983
21-Jan-94	**29.5**	20	0.5131	0.033	3.385	0.981
19-May-94	**33.5**	21	0.5392	0.098	3.510	0.979
24-May-95	**46.8**	22	0.5654	0.165	3.846	0.977
3-May-94	**53.8**	23	0.5915	0.231	3.986	0.975
5-Oct-94	**73.9**	24	0.6176	0.299	4.303	0.974
8-Apr-94	**74.3**	25	0.6438	0.369	4.308	0.981
8-Apr-94	**76.8**	26	0.6699	0.440	4.341	0.984
16-Nov-94	**77.5**	27	0.6961	0.513	4.351	0.986
23-Mar-94	**86.5**	28	0.7222	0.589	4.460	0.985
14-Dec-94	**90.9**	29	0.7484	0.669	4.510	0.983
8-Mar-94	**109.8**	30	0.7745	0.754	4.698	0.980
27-Apr-95	**169.1**	31	0.8007	0.844	5.131	0.977
4-Feb-97	**182.4**	32	0.8268	0.942	5.206	0.974
18-Apr-94	**214.9**	33	0.8529	1.049	5.370	0.966
14-Apr-95	**328.4**	34	0.8791	1.170	5.794	0.955
9-Feb-95	**436.2**	35	0.9052	1.312	6.078	
11-May-95	**556.4**	36	0.9314	1.486	6.322	
10-Jan-95	**1467.7**	37	0.9575	1.723	7.291	
22-Mar-95	**2384.2**	38	0.9837	2.136	7.777	

update for EV, CV:

tZn		PC305	114	114
LN Analysis		tZn	0.50	0.501

Concentration

Conc. Data, EV=114 ug/L CV=0.501

Avg:	114
SD:	57
CV:	0.50
Min:	30
Max:	374
Median:	100

Data-based LN

u	ln[tZn]	[tZn]
3	6.0	421
0	4.62	102
-3	3.20	25

				0.861	0.861
u=mLn{Conc.}+b:				113.7	114
update for r2, EV, CV:	r2=0.861, EV=114 ug/L CV=0.504; max r2=0.98			0.504	0.504
r2 u,lnConc:	0.861	u	lnConc.	Conc.	
slope, m:	2.103	3	6.05	423	
intercept, b:	-9.715	0	4.62	102	
N:	37	-3	3.19	24	
E[Conc]:	113.7	Parameter Estimates			
SD[Conc]:	57	from LN regression			
CV[Conc]:	0.50	update graph label			

	tZn	N: 38				max r2 0.975
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
14-May-91		1	0.0163	-2.136		
3-Oct-91	30	2	0.0425	-1.723	3.401	0.861
18-Apr-94	60	3	0.0686	-1.486	4.094	0.881
24-Jun-94	68	4	0.0948	-1.312	4.220	0.870
3-May-94	74	5	0.1209	-1.170	4.304	0.864
19-May-94	76	6	0.1471	-1.049	4.331	0.861
8-Jun-94	83	7	0.1732	-0.942	4.419	0.858
24-May-95	84	8	0.1993	-0.844	4.431	0.862
11-Jul-95	86	9	0.2255	-0.754	4.454	0.866
12-Jun-95	87	10	0.2516	-0.669	4.466	0.871
27-Jun-95	87	11	0.2778	-0.589	4.466	0.875
17-Aug-94	89	12	0.3039	-0.513	4.489	0.878
25-Jul-95	89	13	0.3301	-0.440	4.489	0.882
17-Feb-94	91	14	0.3562	-0.369	4.511	0.885
17-Feb-94	91	15	0.3824	-0.299	4.511	0.888
8-Apr-94	96	16	0.4085	-0.231	4.564	0.889
8-Apr-94	96	17	0.4346	-0.165	4.564	0.896
11-May-95	96	18	0.4608	-0.098	4.564	0.901
26-Sep-94	99	19	0.4869	-0.033	4.595	0.905
5-Oct-94	100	20	0.5131	0.033	4.605	0.911
14-Aug-95	102	21	0.5392	0.098	4.625	0.917
13-Sep-95	104	22	0.5654	0.165	4.644	0.923
21-Jan-94	105	23	0.5915	0.231	4.654	0.931
21-Jan-94	105	24	0.6176	0.299	4.654	0.939
1-Dec-93	107	25	0.6438	0.369	4.673	0.944
16-Nov-94	110	26	0.6699	0.440	4.700	0.949
27-Apr-95	110	27	0.6961	0.513	4.700	0.955
29-Oct-93	117	28	0.7222	0.589	4.762	0.957
23-Mar-94	117	29	0.7484	0.669	4.762	0.965
21-Dec-93	124	30	0.7745	0.754	4.820	0.968
21-Dec-93	124	31	0.8007	0.844	4.820	0.976
14-Dec-94	129	32	0.8268	0.942	4.860	0.976
8-Mar-94	133	33	0.8529	1.049	4.890	0.971
4-Feb-97	153	34	0.8791	1.170	5.030	0.961
14-Apr-95	178	35	0.9052	1.312	5.182	
22-Mar-95	218	36	0.9314	1.486	5.384	
9-Feb-95	225	37	0.9575	1.723	5.416	
10-Jan-95	374	38	0.9837	2.136	5.924	

update for EV, CV:

tZn		**PC305**			200	200
LN Analysis		**tZn**			1.88	1.88
Discharge, Q		**Q Data, EV=200 cfs CV=1.88**				
Avg:	**200**	**Q Data-based LN**				
SD:	**375**	**u**	**lnQ**	Q		
CV:	**1.88**	3	8.2	3740		
Min:	**5**	0	4.54	94		
Max:	**2,033**	-3	0.86	2		
Median:	**67**					
					0.977	0.977
					215.2	215
u=mLn(Q)+b:					2.94	2.94

update for r2, EV, CV: **r2=0.977, EV=215 cfs CV=2.94; max r2=0.98**

r2 u,lnQ:	0.977	u	lnQ	Q
slope, m:	0.664	3	8.75	6340
intercept, b:	-2.816	0	4.24	69
N:	38	-3	-0.28	1
E[Q]:	215.2	Parameter Estimates		
SD[Q]:	633	from LN regression		
CV[Q]:	2.94	update graph label		

N: 38

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.983 r2 forward
update and rank for new data						
3-Oct-91	4.58	1	0.0163	-2.136	1.522	0.977
13-Sep-95	6.32	2	0.0425	-1.723	1.844	0.977
14-Aug-95	12.2	3	0.0686	-1.486	2.501	0.976
1-Dec-93	12.36	4	0.0948	-1.312	2.514	0.980
29-Oct-93	14.04	5	0.1209	-1.170	2.642	0.981
17-Feb-94	16.63	6	0.1471	-1.049	2.811	0.982
17-Feb-94	17.53	7	0.1732	-0.942	2.864	0.983
25-Jul-95	18.52	8	0.1993	-0.844	2.919	0.983
17-Aug-94	19.75	9	0.2255	-0.754	2.983	0.982
26-Sep-94	19.75	10	0.2516	-0.669	2.983	0.981
21-Dec-93	21.18	11	0.2778	-0.589	3.053	0.979
21-Dec-93	22.65	12	0.3039	-0.513	3.120	0.978
24-Jun-94	25.41	13	0.3301	-0.440	3.235	0.976
11-Jul-95	27.47	14	0.3562	-0.369	3.313	0.975
8-Jun-94	39.8	15	0.3824	-0.299	3.684	0.975
21-Jan-94	44.92	16	0.4085	-0.231	3.805	0.973
12-Jun-95	48.62	17	0.4346	-0.165	3.884	0.971
27-Jun-95	51.5	18	0.4608	-0.098	3.942	0.968
21-Jan-94	52.23	19	0.4869	-0.033	3.956	0.965
19-May-94	81.81	20	0.5131	0.033	4.404	0.964
14-May-91	*87.6*	21	0.5392	0.098	4.473	0.962
24-May-95	103.6	22	0.5654	0.165	4.641	0.959
16-Nov-94	131.01	23	0.5915	0.231	4.875	0.958
14-Dec-94	131.01	24	0.6176	0.299	4.875	0.967
3-May-94	135.26	25	0.6438	0.369	4.907	0.973
23-Mar-94	137.43	26	0.6699	0.440	4.923	0.978
5-Oct-94	137.43	27	0.6961	0.513	4.923	0.981
8-Apr-94	143.89	28	0.7222	0.589	4.969	0.980
8-Apr-94	148.7	29	0.7484	0.669	5.002	0.978
8-Mar-94	153.41	30	0.7745	0.754	5.033	0.973
4-Feb-97	221.6	31	0.8007	0.844	5.401	0.979
27-Apr-95	285.77	32	0.8268	0.942	5.655	0.975
14-Apr-95	342.88	33	0.8529	1.049	5.837	0.967
9-Feb-95	360.33	34	0.8791	1.170	5.887	0.954
18-Apr-94	665.65	35	0.9052	1.312	6.501	
10-Jan-95	729.43	36	0.9314	1.486	6.592	
11-May-95	1077.37	37	0.9575	1.723	6.982	
22-Mar-95	2032.81	38	0.9837	2.136	7.617	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	PC307	**Date:**	20-Jun-00
Chemical:	dCd	**Analyst:**	J.MacLachlan
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,658	6	3	0.1	0.00	0.00	0.00
SD:	343	8	0	0.1	1.00	1.00	1.00
CV:	0.01	1.38	0.19	1.34			
Min:	34,271	1	2	0.0	-0.66	-2.07	-0.66
Max:	35,930	38	4	1	4.11	1.81	4.58
Median:	34,564	3	3	0.04	-0.37	-0.03	-0.35

dCd PC307			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.163)		update r2	0.16	0.163	r2:	0.010	0.016
r2 Q,[COC]:	0.16	[tCd]	Q		m:	0.0023	0.00036
slope, m:	-0.03	3	0.5		b:	-72	-11.18
intercept, b:	2.8	3	5.7				
N: 39		2	38				
LnConc. = mLn(Q)+b (r2=0.323)		update r2	0.32	0.323			
r2 lnQ,ln[COC]:	0.32	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.12	1.15	-0.62	3	1		
intercept, b:	1.08	0.88	1.74	2	6		
N: 39		0.66	3.64	2	38		

N= 39

	Sampling Date	Q Discharge	dCd Concentration	dCd Load	Ln Q	Ln dCd Conc.	Ln dCd Load	for graph 0 dCd PC307 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
IDEQ	29-Oct-93	1.57	3.1	0.0	0.45	1.13	-3.64	-0.53	0.99	-0.48
IDEQ	1-Dec-93	1.68	2.9	0.0	0.52	1.06	-3.64	-0.51	0.59	-0.48
IDEQ	21-Dec-93	1.79	2.8	0.0	0.58	1.03	-3.61	-0.50	0.38	-0.47
IDEQ	21-Dec-93	1.67	2.8	0.0	0.51	1.03	-3.68	-0.51	0.38	-0.49
IDEQ	21-Jan-94	2.31	3.1	0.0	0.84	1.13	-3.26	-0.43	0.99	-0.35
IDEQ	21-Jan-94	2.51	3.1	0.0	0.92	1.13	-3.17	-0.41	0.99	-0.31
IDEQ	17-Feb-94	1.91	2.8	0.0	0.65	1.03	-3.55	-0.48	0.38	-0.45
IDEQ	17-Feb-94	1.54	2.8	0.0	0.43	1.03	-3.76	-0.53	0.38	-0.51
IDEQ	8-Mar-94	4.41	2.2	0.1	1.48	0.79	-2.95	-0.17	-0.85	-0.21
IDEQ	23-Mar-94	5.03	2.5	0.1	1.62	0.92	-2.69	-0.09	-0.23	-0.04
IDEQ	8-Apr-94	5.74	2.2	0.1	1.75	0.79	-2.69	0.00	-0.85	-0.04
IDEQ	8-Apr-94	5.31	2.2	0.1	1.67	0.79	-2.77	-0.05	-0.85	-0.09
IDEQ	18-Apr-94	26.98	1.8	0.3	3.30	0.59	-1.34	2.70	-1.67	1.97
IDEQ	6-May-94	5.37	2.5	0.1	1.68	0.92	-2.63	-0.04	-0.23	0.00
IDEQ	20-May-94	5.03	2.3	0.1	1.62	0.83	-2.78	-0.09	-0.64	-0.10
IDEQ	9-Jun-94	3.63	3.2	0.1	1.29	1.16	-2.77	-0.26	1.20	-0.10
IDEQ	24-Jun-94	2.8	3.5	0.1	1.03	1.25	-2.94	-0.37	1.81	-0.20
IDEQ	22-Jul-94	1.57	3.2	0.0	0.45	1.16	-3.61	-0.53	1.20	-0.47
IDEQ	18-Aug-94	1.57	3	0.0	0.45	1.10	-3.68	-0.53	0.79	-0.48
IDEQ	18-Aug-94	1.39	3	0.0	0.33	1.10	-3.80	-0.55	0.79	-0.52
IDEQ	26-Sep-94	1.15	3.3	0.0	0.14	1.19	-3.89	-0.58	1.40	-0.54
IDEQ	5-Oct-94	1.48	3.2	0.0	0.39	1.16	-3.67	-0.54	1.20	-0.48
IDEQ	16-Nov-94	2.03	3.1	0.0	0.71	1.13	-3.39	-0.47	0.99	-0.40
IDEQ	10-Jan-95	23.51	2.5	0.3	3.16	0.92	-1.15	2.26	-0.23	2.54
IDEQ	9-Feb-95	19.16	2.1	0.2	2.95	0.74	-1.53	1.71	-1.05	1.50
IDEQ	7-Mar-95	5.03	2.5	0.1	1.62	0.92	-2.69	-0.09	-0.23	-0.04
IDEQ	23-Mar-95	38.12	2.5	0.5	3.64	0.92	-0.67	4.11	-0.23	4.58
IDEQ	14-Apr-95	6.55	2.4	0.1	1.88	0.88	-2.47	0.11	-0.44	0.13
IDEQ	25-Apr-95	4.41	2.1	0.0	1.48	0.74	-3.00	-0.17	-1.05	-0.23
IDEQ	10-May-95	12.76	1.6	0.1	2.55	0.47	-2.21	0.89	-2.07	0.39
IDEQ	24-May-95	3.19	2.1	0.0	1.16	0.74	-3.32	-0.32	-1.05	-0.37
IDEQ	12-Jun-95	3.63	1.8	0.0	1.29	0.59	-3.35	-0.26	-1.67	-0.38
IDEQ	27-Jun-95	1.91	1.9	0.0	0.65	0.64	-3.94	-0.48	-1.46	-0.55
IDEQ	12-Jul-95	1.48	2.3	0.0	0.39	0.83	-4.00	-0.54	-0.64	-0.56
IDEQ	25-Jul-95	1.01	2.6	0.0	0.01	0.96	-4.26	-0.60	-0.03	-0.60
IDEQ	14-Aug-95	0.74	2.8	0.0	-0.30	1.03	-4.50	-0.63	0.38	-0.63
IDEQ	13-Sep-95	0.54	3	0.0	-0.62	1.10	-4.74	-0.66	0.79	-0.66
URS	13-Nov-97	3.93	3.24	0.1	1.37	1.18	-2.68	-0.23	1.28	-0.04
URS	15-May-98	8.36	1.9	0.1	2.12	0.64	-2.46	0.34	-1.46	0.14

dCd

Concentration over time analysis

	dCd	PC307		r2	Slope, m
	LnConc.=mTime+b All data r2, m:			**0.068**	**-0.00015**
	Time	**Ln[COC]**	**[COC]**		
first:	29-Oct-93	1.00	3		
mid:	18-Aug-94	0.96	3		
last:	15-May-98	0.75	2		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

Load over time analysis

	dCd	PC307		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.007**	**0.00021**
	Time	**LnLoad**	**Load**		
first:	29-Oct-93	-3.18	0.04		
mid:	18-Aug-94	-3.12	0.04		
last:	15-May-98	-2.84	0.06		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

max r2:	0.179		max r2:	0.959	
Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.068	-0.00015	6.12	0.007	0.00021	-10.28
0.057	-0.00014	5.71	0.004	0.00017	-8.83
0.051	-0.00013	5.48	0.002	0.00012	-7.32
0.046	-0.00013	5.32	0.001	0.00008	-5.79
0.042	-0.00012	5.15	0.000	0.00002	-3.84
0.032	-0.00011	4.64	0.000	0.00000	-3.17
0.023	-0.00009	4.06	0.000	-0.00001	-2.69
0.019	-0.00008	3.79	0.000	-0.00006	-0.94
0.015	-0.00007	3.47	0.002	-0.00014	1.82
0.021	-0.00009	4.00	0.002	-0.00014	1.87
0.021	-0.00009	4.09	0.002	-0.00011	0.96
0.029	-0.00011	4.68	0.001	-0.00008	-0.07
0.039	-0.00013	5.36	0.000	-0.00006	-0.94
0.077	-0.00017	6.98	0.002	0.00014	-8.06
0.082	-0.00018	7.33	0.005	0.00021	-10.29
0.099	-0.00021	8.09	0.007	0.00026	-12.11
0.080	-0.00018	7.35	0.011	0.00032	-14.16
0.054	-0.00015	6.04	0.013	0.00036	-15.62
0.036	-0.00012	5.03	0.009	0.00031	-13.80
0.023	-0.00010	4.22	0.006	0.00024	-11.41
0.012	-0.00007	3.23	0.002	0.00014	-7.82
0.001	-0.00002	1.61	0.000	0.00001	-3.35
0.002	0.00003	-0.15	0.001	-0.00010	0.67
0.020	0.00008	-1.86	0.003	-0.00018	3.34
0.028	0.00009	-2.43	0.001	0.00008	-5.98
0.022	0.00008	-2.11	0.011	0.00031	-14.15
0.031	0.00010	-2.67	0.017	0.00039	-17.03
0.043	0.00012	-3.31	0.126	0.00081	-31.65
0.052	0.00013	-3.81	0.207	0.00099	-38.12
0.045	0.00013	-3.57	0.264	0.00112	-42.75
0.015	0.00006	-1.37	0.577	0.00143	-53.96
0.007	0.00004	-0.61	0.699	0.00160	-59.80
0.003	-0.00003	1.83	0.867	0.00180	-67.25
0.074	-0.00011	4.84	0.910	0.00193	-71.60
0.179	-0.00017	7.10	0.959	0.00209	-77.49

update for EV, CV:

dCd **PC307**

LN Analysis **dCd**

Load **Load Data, EV=0.072 lbs/day CV=1.34**

Avg:	**0.1**	**Load Data-based LN**		
SD:	**0.1**	u	ln tCd Load	tCd Load
CV:	**1.34**	3	-0.1	1
Min:	**0.01**	0	-3.14	0.04
Max:	**1**	-3	-6.18	0.002
Median:	**0.04**			
		0	0.072	
		1.34	1.34	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.941, EV=0.0696lbs/day CV=1.18; max r2=0.95**

r2 u,lnLoad:	0.941	u	lnLoad	Load		
slope, m:	1.072	3	-0.30	1		
intercept, b:	3.324	0	-3.10	0.05		
N:	39	-3	-5.90	0.003		
E[Load]:	0.1	Parameter Estimates			0.941	0.941
SD[Load]:	0.08	from LN regression			0.1	0.0696
CV[Load]:	1.18	update graph label			1.2	1.18

						max r2 0.948
	dCd	N: 39				
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day Ranked**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
update and rank for new data						
13-Sep-95	**0.0**	1	0.0159	-2.146	-4.743	0.941
14-Aug-95	**0.0**	2	0.0414	-1.735	-4.497	0.938
25-Jul-95	**0.0**	3	0.0669	-1.499	-4.260	0.934
12-Jul-95	**0.0**	4	0.0924	-1.326	-4.000	0.932
27-Jun-95	**0.0**	5	0.1178	-1.186	-3.936	0.934
26-Sep-94	**0.0**	6	0.1433	-1.066	-3.891	0.936
18-Aug-94	**0.0**	7	0.1688	-0.959	-3.797	0.938
17-Feb-94	**0.0**	8	0.1943	-0.862	-3.764	0.940
21-Dec-93	**0.0**	9	0.2197	-0.773	-3.683	0.942
18-Aug-94	**0.0**	10	0.2452	-0.690	-3.675	0.946
5-Oct-94	**0.0**	11	0.2707	-0.611	-3.670	0.947
29-Oct-93	**0.0**	12	0.2962	-0.535	-3.643	0.948
1-Dec-93	**0.0**	13	0.3217	-0.463	-3.642	0.947
21-Dec-93	**0.0**	14	0.3471	-0.393	-3.613	0.946
22-Jul-94	**0.0**	15	0.3726	-0.325	-3.611	0.943
17-Feb-94	**0.0**	16	0.3981	-0.258	-3.548	0.938
16-Nov-94	**0.0**	17	0.4236	-0.193	-3.386	0.933
12-Jun-95	**0.0**	18	0.4490	-0.128	-3.348	0.930
24-May-95	**0.0**	19	0.4745	-0.064	-3.323	0.927
21-Jan-94	**0.0**	20	0.5000	0.000	-3.256	0.921
21-Jan-94	**0.0**	21	0.5255	0.064	-3.173	0.916
25-Apr-95	**0.0**	22	0.5510	0.128	-2.999	0.910
8-Mar-94	**0.1**	23	0.5764	0.193	-2.953	0.911
24-Jun-94	**0.1**	24	0.6019	0.258	-2.943	0.912
20-May-94	**0.1**	25	0.6274	0.325	-2.777	0.911
9-Jun-94	**0.1**	26	0.6529	0.393	-2.773	0.921
8-Apr-94	**0.1**	27	0.6783	0.463	-2.767	0.930
7-Mar-95	**0.1**	28	0.7038	0.535	-2.693	0.935
23-Mar-94	**0.1**	29	0.7293	0.611	-2.693	0.944
8-Apr-94	**0.1**	30	0.7548	0.690	-2.689	0.948
13-Nov-97	**0.1**	31	0.7803	0.773	-2.681	0.947
6-May-94	**0.1**	32	0.8057	0.862	-2.628	0.938
14-Apr-95	**0.1**	33	0.8312	0.959	-2.470	0.923
15-May-98	**0.1**	34	0.8567	1.066	-2.460	0.899
10-May-95	**0.1**	35	0.8822	1.186	-2.209	0.883
9-Feb-95	**0.2**	36	0.9076	1.326	-1.530	
18-Apr-94	**0.3**	37	0.9331	1.499	-1.342	
10-Jan-95	**0.3**	38	0.9586	1.735	-1.151	
23-Mar-95	**0.5**	39	0.9841	2.146	-0.668	

		update for EV, CV:			
dCd		PC307		3	2.61
LN Analysis		dCd		0.19	0.187
Concentration		Conc. Data, EV=2.61 ug/L CV=0.187			
Avg:	3	Data-based LN			
SD:	0.5	u	ln[tCd]	[tCd]	
CV:	0.19	3	1.5	4	
Min:	2	0	0.94	3	
Max:	4	-3	0.39	1	
Median:	3				

					0.952	0.952
	u=mLn(Conc.)+b:				2.6	2.62
update for r2, EV, CV:	r2=0.952, EV=2.62 ug/L CV=0.211; max r2=0.95				0.211	0.211
	r2 u,lnConc:	0.952	u	lnConc.	Conc.	
	slope, m:	4.788	3	1.57	5	
	intercept, b:	-4.511	0	0.94	3	
	N:	39	-3	0.32	1	
	E[Conc]:	2.6	Parameter Estimates			
	SD[Conc]:	1	from LN regression			
	CV[Conc]:	0.21	update graph label			

	dCd	N: 39				max r2 0.952
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
10-May-95	1.6	1	0.0159	-2.146	0.470	0.952
12-Jun-95	1.8	2	0.0414	-1.735	0.588	0.945
18-Apr-94	1.8	3	0.0669	-1.499	0.588	0.939
15-May-98	1.9	4	0.0924	-1.326	0.642	0.935
27-Jun-95	1.9	5	0.1178	-1.186	0.642	0.930
9-Feb-95	2.1	6	0.1433	-1.066	0.742	0.929
24-May-95	2.1	7	0.1688	-0.959	0.742	0.923
25-Apr-95	2.1	8	0.1943	-0.862	0.742	0.917
8-Apr-94	2.2	9	0.2197	-0.773	0.788	0.913
8-Apr-94	2.2	10	0.2452	-0.690	0.788	0.906
8-Mar-94	2.2	11	0.2707	-0.611	0.788	0.902
12-Jul-95	2.3	12	0.2962	-0.535	0.833	0.902
20-May-94	2.3	13	0.3217	-0.463	0.833	0.897
14-Apr-95	2.4	14	0.3471	-0.393	0.875	0.898
6-May-94	2.5	15	0.3726	-0.325	0.916	0.893
7-Mar-95	2.5	16	0.3981	-0.258	0.916	0.884
10-Jan-95	2.5	17	0.4236	-0.193	0.916	0.875
23-Mar-94	2.5	18	0.4490	-0.128	0.916	0.869
23-Mar-95	2.5	19	0.4745	-0.064	0.916	0.872
25-Jul-95	2.6	20	0.5000	0.000	0.956	0.903
14-Aug-95	2.8	21	0.5255	0.064	1.030	0.928
17-Feb-94	2.8	22	0.5510	0.128	1.030	0.920
17-Feb-94	2.8	23	0.5764	0.193	1.030	0.912
21-Dec-93	2.8	24	0.6019	0.258	1.030	0.905
21-Dec-93	2.8	25	0.6274	0.325	1.030	0.906
1-Dec-93	2.9	26	0.6529	0.393	1.065	0.940
13-Sep-95	3	27	0.6783	0.463	1.099	0.949
18-Aug-94	3	28	0.7038	0.535	1.099	0.942
18-Aug-94	3	29	0.7293	0.611	1.099	0.933
16-Nov-94	3.1	30	0.7548	0.690	1.131	0.929
21-Jan-94	3.1	31	0.7803	0.773	1.131	0.934
21-Jan-94	3.1	32	0.8057	0.862	1.131	0.931
29-Oct-93	3.1	33	0.8312	0.959	1.131	0.917
5-Oct-94	3.2	34	0.8567	1.066	1.163	0.892
9-Jun-94	3.2	35	0.8822	1.186	1.163	0.935
22-Jul-94	3.2	36	0.9076	1.326	1.163	
13-Nov-97	3.24	37	0.9331	1.499	1.176	
26-Sep-94	3.3	38	0.9586	1.735	1.194	
24-Jun-94	3.5	39	0.9841	2.146	1.253	

update for EV, CV:

dCd		**PC307**		6	5.71
LN Analysis		**dCd**		1.38	1.38
Discharge, Q		**Q Data, EV=5.71 cfs CV=1.38**			
Avg:	6	**Q Data-based LN**			
SD:	8	u	lnQ	Q	
CV:	1.38	3	4.3	74	
Min:	1	0	1.21	3	
Max:	38	-3	-1.89	0.2	
Median:	3				

	0.944	0.944
	5.6	5.58
u=mLn(Q)+b:	1.38	1.38

update for r2, EV, CV: **r2=0.944, EV=5.58 cfs CV=1.38; max r2=0.97**

r2 u,lnQ:	0.944	u	lnQ	Q
slope, m:	0.967	3	4.29	73
intercept, b:	-1.144	0	1.18	3
N:	39	-3	-1.92	0.1
E[Q]:	5.6	Parameter Estimates		
SD[Q]:	8	from LN regression		
CV[Q]:	1.38	update graph label		

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 = 0.968 r2 forward
		N: 39				
update and rank for new data						
#####	0.54	1	0.0159	-2.146	-0.616	0.944
#####	0.74	2	0.0414	-1.735	-0.301	0.941
#####	1.01	3	0.0669	-1.499	0.010	0.939
#####	1.15	4	0.0924	-1.326	0.140	0.941
#####	1.39	5	0.1178	-1.186	0.329	0.943
#####	1.48	6	0.1433	-1.066	0.392	0.949
#####	1.48	7	0.1688	-0.959	0.392	0.956
#####	1.54	8	0.1943	-0.862	0.432	0.960
#####	1.57	9	0.2197	-0.773	0.451	0.964
#####	1.57	10	0.2452	-0.690	0.451	0.966
#####	1.57	11	0.2707	-0.611	0.451	0.968
#####	1.67	12	0.2962	-0.535	0.513	0.967
#####	1.68	13	0.3217	-0.463	0.519	0.967
#####	1.79	14	0.3471	-0.393	0.582	0.965
#####	1.91	15	0.3726	-0.325	0.647	0.963
#####	1.91	16	0.3981	-0.258	0.647	0.961
#####	2.03	17	0.4236	-0.193	0.708	0.957
#####	2.31	18	0.4490	-0.128	0.837	0.953
#####	2.51	19	0.4745	-0.064	0.920	0.949
#####	2.8	20	0.5000	0.000	1.030	0.945
#####	3.19	21	0.5255	0.064	1.160	0.941
#####	3.63	22	0.5510	0.128	1.289	0.938
#####	3.63	23	0.5764	0.193	1.289	0.939
#####	3.93	24	0.6019	0.258	1.369	0.936
#####	4.41	25	0.6274	0.325	1.484	0.935
#####	4.41	26	0.6529	0.393	1.484	0.937
#####	5.03	27	0.6783	0.463	1.615	0.936
#####	5.03	28	0.7038	0.535	1.615	0.940
#####	5.03	29	0.7293	0.611	1.615	0.939
#####	5.31	30	0.7548	0.690	1.670	0.933
#####	5.37	31	0.7803	0.773	1.681	0.922
#####	5.74	32	0.8057	0.862	1.747	0.905
#####	6.55	33	0.8312	0.959	1.879	0.884
#####	8.36	34	0.8567	1.066	2.123	0.874
#####	12.76	35	0.8822	1.186	2.546	0.916
#####	19.16	36	0.9076	1.326	2.953	
#####	23.51	37	0.9331	1.499	3.157	
#####	26.98	38	0.9586	1.735	3.295	
#####	38.12	39	0.9841	2.146	3.641	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.		see comment
Station:	PC307	**Date:** 20-Jun-00
Chemical:	dPb	**Analyst:** J.MacLachlan
Notes:		
Input Discharge and Concentration Data below (in red)		

	Date	Discharge	Concentration	Load			
Avg:	34,658	6	3	0.1	0.00	0.00	0.00
SD:	343	8	1	0.2	1.00	1.00	1.00
CV:	0.01	1.38	0.27	1.74			
Min:	34,271	1	1	0.0	-0.66	-2.33	-0.53
Max:	35,930	38	5	1	4.11	1.86	3.87
Median:	34,564	3	3	0.1	-0.37	-0.35	-0.30

dPb PC307			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.0213)		update r2	0.02	0.0213	r2:	0.010	0.016
r2 Q,[COC]:	0.02	[tCd]	Q		m:	0.0023	0.00036
slope, m:	0.02	3	0.5		b:	-72	-11.18
intercept, b:	3.2	3	5.7				
N: 22		4	38				
LnConc. = mLn(Q)+b (r2=0.00000407)		update r2		0.00	0.00000407		
r2 lnQ,ln[COC]:	0.000004	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.001	1.16	-0.62	3	1		
intercept, b:	1.15	1.15	1.74	3	6		
N: 22		1.15	3.64	3	38		

N= 39

update for new data	Sampling Date	Q Discharge cfs	dPb Concentration ug/L	dPb Load lbs/day	Ln Q	Ln dPb Conc.	Ln dPb Load	dPb PC307 Standardized Values = (x - Avg)/SD Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
IDEQ	29-Oct-93	1.57	3	0.025	0.45	1.10	-3.68	-0.53	-0.35	-0.44
IDEQ	*1-Dec-93*	*1.68*			0.52			-0.51		
IDEQ	21-Dec-93	1.79	5	0.048	0.58	1.61	-3.03	-0.50	1.86	-0.31
IDEQ	21-Dec-93	1.67	5	0.045	0.51	1.61	-3.10	-0.51	1.86	-0.33
IDEQ	*21-Jan-94*	*2.31*			0.84			-0.43		
IDEQ	*21-Jan-94*	*2.51*			0.92			-0.41		
IDEQ	*17-Feb-94*	*1.91*			0.65			-0.48		
IDEQ	*17-Feb-94*	*1.54*			0.43			-0.53		
IDEQ	*8-Mar-94*	*4.41*			1.48			-0.17		
IDEQ	*23-Mar-94*	*5.03*			1.62			-0.09		
IDEQ	8-Apr-94	5.74	3	0.093	1.75	1.10	-2.38	0.00	-0.35	-0.07
IDEQ	8-Apr-94	5.31	3	0.086	1.67	1.10	-2.46	-0.05	-0.35	-0.11
IDEQ	*18-Apr-94*	*26.98*			3.30			2.70		
IDEQ	6-May-94	5.37	3	0.087	1.68	1.10	-2.45	-0.04	-0.35	-0.10
IDEQ	*20-May-94*	*5.03*			1.62			-0.09		
IDEQ	*9-Jun-94*	*3.63*			1.29			-0.26		
IDEQ	24-Jun-94	2.8	4	0.060	1.03	1.39	-2.81	-0.37	0.75	-0.25
IDEQ	*22-Jul-94*	*1.57*			0.45			-0.53		
IDEQ	18-Aug-94	1.57	2.5	0.021	0.45	0.92	-3.86	-0.53	-0.90	-0.46
IDEQ	18-Aug-94	1.39	2.5	0.019	0.33	0.92	-3.98	-0.55	-0.90	-0.47
IDEQ	26-Sep-94	1.15	3	0.019	0.14	1.10	-3.99	-0.58	-0.35	-0.47
IDEQ	5-Oct-94	1.48	3	0.024	0.39	1.10	-3.73	-0.54	-0.35	-0.44
IDEQ	*16-Nov-94*	*2.03*			0.71			-0.47		
IDEQ	10-Jan-95	23.51	4	0.506	3.16	1.39	-0.68	2.26	0.75	2.17
IDEQ	*9-Feb-95*	*19.16*			2.95			1.71		
IDEQ	7-Mar-95	5.03	4	0.108	1.62	1.39	-2.22	-0.09	0.75	0.01
IDEQ	23-Mar-95	38.12	4	0.820	3.64	1.39	-0.20	4.11	0.75	3.87
IDEQ	*14-Apr-95*	*6.55*			1.88			0.11		
IDEQ	25-Apr-95	4.41	3	0.071	1.48	1.10	-2.64	-0.17	-0.35	-0.19
IDEQ	*10-May-95*	*12.76*			2.55			0.89		
IDEQ	24-May-95	3.19	4	0.069	1.16	1.39	-2.68	-0.32	0.75	-0.20
IDEQ	12-Jun-95	3.63	4	0.078	1.29	1.39	-2.55	-0.26	0.75	-0.15
IDEQ	27-Jun-95	1.91	4	0.041	0.65	1.39	-3.19	-0.48	0.75	-0.35
IDEQ	*12-Jul-95*	*1.48*			0.39			-0.54		
IDEQ	*25-Jul-95*	*1.01*			0.01			-0.60		
IDEQ	14-Aug-95	0.74	3	0.012	-0.30	1.10	-4.43	-0.63	-0.35	-0.51
IDEQ	13-Sep-95	0.54	3	0.009	-0.62	1.10	-4.74	-0.66	-0.35	-0.53
URS	13-Nov-97	3.93	1.76	0.037	1.37	0.57	-3.29	-0.23	-1.72	-0.37
URS	15-May-98	8.36	1.2	0.054	2.12	0.18	-2.92	0.34	-2.33	-0.28

dPb

Concentration over time analysis

	dPb	PC307		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.478**	**-0.00055**
	Time	**Ln[COC]**	**[COC]**		
first:	29-Oct-93	1.41	4		
mid:	18-Aug-94	1.25	3		
last:	15-May-98	0.50	2		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

Load over time analysis

	dPb	PC307			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.001**	**-0.00009**
	Time	**LnLoad**	**Load**		
first:	29-Oct-93	-2.91	0.1		
mid:	18-Aug-94	-2.94	0.1		
last:	15-May-98	-3.06	0.05		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

max r2: 0.954

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.478	-0.00055	20.17
0.526	-0.00059	21.80
0.526	-0.00059	21.80
0.496	-0.00057	20.80
0.458	-0.00053	19.53
0.458	-0.00053	19.53
0.458	-0.00053	19.53
0.458	-0.00053	19.53
0.458	-0.00053	19.53
0.458	-0.00053	19.53
0.458	-0.00053	19.53
0.486	-0.00056	20.61
0.521	-0.00060	21.96
0.521	-0.00060	21.96
0.560	-0.00064	23.48
0.560	-0.00064	23.48
0.560	-0.00064	23.48
0.540	-0.00063	23.25
0.540	-0.00063	23.25
0.636	-0.00070	25.60
0.768	-0.00079	28.69
0.833	-0.00085	30.86
0.918	-0.00093	33.73
0.918	-0.00093	33.73
0.914	-0.00094	33.93
0.914	-0.00094	33.93
0.909	-0.00093	33.76
0.903	-0.00092	33.42
0.903	-0.00092	33.42
0.943	-0.00098	35.40
0.943	-0.00098	35.40
0.939	-0.00096	34.74
0.937	-0.00092	33.36
0.954	-0.00083	30.19
0.954	-0.00083	30.19

max r2: 0.970

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.001	-0.00009	0.16
0.006	-0.00020	4.13
0.006	-0.00020	4.13
0.007	-0.00023	5.18
0.010	-0.00028	6.93
0.010	-0.00028	6.93
0.010	-0.00028	6.93
0.010	-0.00028	6.93
0.010	-0.00028	6.93
0.010	-0.00028	6.93
0.010	-0.00028	6.93
0.006	-0.00022	4.78
0.003	-0.00016	2.53
0.003	-0.00016	2.53
0.001	-0.00008	-0.26
0.001	-0.00008	-0.26
0.001	-0.00008	-0.26
0.000	-0.00005	-1.22
0.000	-0.00005	-1.22
0.004	-0.00020	4.00
0.017	-0.00042	11.68
0.044	-0.00068	20.88
0.087	-0.00097	31.12
0.087	-0.00097	31.12
0.042	-0.00060	18.23
0.042	-0.00060	18.23
0.028	-0.00050	14.56
0.005	0.00013	-7.75
0.005	0.00013	-7.75
0.029	0.00031	-14.45
0.029	0.00031	-14.45
0.103	0.00057	-23.70
0.434	0.00105	-40.94
0.970	0.00165	-62.18
0.970	0.00165	-62.18

update for EV, CV:

dPb **PC307**

LN Analysis **dPb**

Load **Load Data, EV=0.106 lbs/day CV=1.74**

Load Data-based LN

		u	ln tCd Load	tCd Load
Avg:	**0.1**	3	0.6	2
SD:	**0.2**	0	-2.94	0.1
CV:	**1.74**	-3	-6.48	0.002
Min:	**0.01**			
Max:	**1**			
Median:	**0.1**			

0	0.106
1.74	1.74

u=mLn(Load)+ b:

update for r2, EV, CV: **r2=0.953, EV=0.0771lbs/day CV=2.71; max r2=0.953**

r2 u,lnLoad:	0.953	u	lnLoad	Load		
slope, m:	0.686	3	0.75	2		
intercept, b:	2.487	0	-3.62	0.03		
N:	22	-3	-8.00	0.0003		
E[Load]:	0.1	Parameter Estimates			0.953	0.953
SD[Load]:	0.2	from LN regression			0.1	0.0771
CV[Load]:	2.71	update graph label			2.7	2.71
					max r2	
		N: 39			0.953	

Date	dPb Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
25-Jul-95		1	0.0159	-2.146		
12-Jul-95		2	0.0414	-1.735		
17-Feb-94		3	0.0669	-1.499		
22-Jul-94		4	0.0924	-1.326		
1-Dec-93		5	0.1178	-1.186		
17-Feb-94		6	0.1433	-1.066		
16-Nov-94		7	0.1688	-0.959		
13-Sep-95	**0.009**	8	0.1943	-0.862	-4.743	0.953
21-Jan-94		9	0.2197	-0.773		
21-Jan-94		10	0.2452	-0.690		
14-Aug-95	**0.012**	11	0.2707	-0.611	-4.428	0.946
9-Jun-94		12	0.2962	-0.535		
8-Mar-94		13	0.3217	-0.463		
26-Sep-94	**0.019**	14	0.3471	-0.393	-3.987	0.939
18-Aug-94	**0.019**	15	0.3726	-0.325	-3.979	0.935
23-Mar-94		16	0.3981	-0.258		
20-May-94		17	0.4236	-0.193		
18-Aug-94	**0.021**	18	0.4490	-0.128	-3.858	0.929
5-Oct-94	**0.024**	19	0.4745	-0.064	-3.734	0.921
29-Oct-93	**0.025**	20	0.5000	0.000	-3.675	0.912
14-Apr-95		21	0.5255	0.064		
13-Nov-97	**0.037**	22	0.5510	0.128	-3.291	0.900
27-Jun-95	**0.041**	23	0.5764	0.193	-3.192	0.895
21-Dec-93	**0.045**	24	0.6019	0.258	-3.103	0.892
21-Dec-93	**0.048**	25	0.6274	0.325	-3.033	0.891
10-May-95		26	0.6529	0.393		
15-May-98	**0.054**	27	0.6783	0.463	-2.919	0.891
24-Jun-94	**0.060**	28	0.7038	0.535	-2.809	0.889
24-May-95	**0.069**	29	0.7293	0.611	-2.679	0.893
25-Apr-95	**0.071**	30	0.7548	0.690	-2.643	0.909
9-Feb-95		31	0.7803	0.773		
12-Jun-95	**0.078**	32	0.8057	0.862	-2.550	0.931
8-Apr-94	**0.086**	33	0.8312	0.959	-2.457	0.940
6-May-94	**0.087**	34	0.8567	1.066	-2.446	0.951
8-Apr-94	**0.093**	35	0.8822	1.186	-2.379	0.947
7-Mar-95	**0.108**	36	0.9076	1.326	-2.223	
18-Apr-94		37	0.9331	1.499		
10-Jan-95	**0.506**	38	0.9586	1.735	-0.681	
23-Mar-95	**0.820**	39	0.9841	2.146	-0.198	

		update for EV, CV:			
dPb		PC307		3	3.32
LN Analysis		dPb		0.27	0.273

Concentration

		Conc. Data, EV=3.32 ug/L CV=0.273		
Avg:	3	Data-based LN		
SD:	1	u	ln[tCd]	[tCd]
CV:	0.27	3	2.0	7
Min:	1	0	1.16	3
Max:	5	-3	0.36	1
Median:	3			

				0.693	0.693
u=mLn(Conc.)+b:				2.5	2.51
update for r2, EV, CV:	r2=0.693, EV=2.51 ug/L CV=0.706; max r2=0.862			0.706	0.706
r2 u,lnConc:	0.693	u	lnConc.	Conc.	
slope, m:	1.572	3	2.63	14	
intercept, b:	-1.131	0	0.72	2	
N:	22	-3	-1.19	0.3	
E[Conc]:	2.5	Parameter Estimates			
SD[Conc]:	2	from LN regression			
CV[Conc]:	0.71	update graph label			

	dPb	N: 39				max r2 0.862
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
1-Dec-93		1	0.0159	-2.146		
21-Jan-94		2	0.0414	-1.735		
21-Jan-94		3	0.0669	-1.499		
17-Feb-94		4	0.0924	-1.326		
17-Feb-94		5	0.1178	-1.186		
8-Mar-94		6	0.1433	-1.066		
23-Mar-94		7	0.1688	-0.959		
18-Apr-94		8	0.1943	-0.862		
20-May-94		9	0.2197	-0.773		
9-Jun-94		10	0.2452	-0.690		
22-Jul-94		11	0.2707	-0.611		
16-Nov-94		12	0.2962	-0.535		
9-Feb-95		13	0.3217	-0.463		
14-Apr-95		14	0.3471	-0.393		
10-May-95		15	0.3726	-0.325		
12-Jul-95		16	0.3981	-0.258		
25-Jul-95		17	0.4236	-0.193		
15-May-98	1.2	18	0.4490	-0.128	0.182	0.693
13-Nov-97	1.76	19	0.4745	-0.064	0.565	0.798
18-Aug-94	2.5	20	0.5000	0.000	0.916	0.862
18-Aug-94	2.5	21	0.5255	0.064	0.916	0.849
29-Oct-93	3	22	0.5510	0.128	1.099	0.839
8-Apr-94	3	23	0.5764	0.193	1.099	0.835
8-Apr-94	3	24	0.6019	0.258	1.099	0.827
6-May-94	3	25	0.6274	0.325	1.099	0.814
26-Sep-94	3	26	0.6529	0.393	1.099	0.796
5-Oct-94	3	27	0.6783	0.463	1.099	0.771
25-Apr-95	3	28	0.7038	0.535	1.099	0.737
14-Aug-95	3	29	0.7293	0.611	1.099	0.695
13-Sep-95	3	30	0.7548	0.690	1.099	0.651
24-Jun-94	4	31	0.7803	0.773	1.386	0.695
10-Jan-95	4	32	0.8057	0.862	1.386	0.719
7-Mar-95	4	33	0.8312	0.959	1.386	0.742
23-Mar-95	4	34	0.8567	1.066	1.386	0.760
24-May-95	4	35	0.8822	1.186	1.386	0.765
12-Jun-95	4	36	0.9076	1.326	1.386	
27-Jun-95	4	37	0.9331	1.499	1.386	
21-Dec-93	5	38	0.9586	1.735	1.609	
21-Dec-93	5	39	0.9841	2.146	1.609	

update for EV, CV:

dPb		**PC307**		6	5.71
LN Analysis		**dPb**		1.38	1.38
Discharge, Q		**Q Data, EV=5.71 cfs CV=1.38**			
Avg:	**6**	**Q Data-based LN**			
SD:	**8**	u	lnQ	Q	
CV:	**1.38**	3	4.3	74	
Min:	**1**	0	1.21	3	
Max:	**38**	-3	-1.89	0.2	
Median:	**3**				

			0.944	0.944
			5.6	5.58
u=mLn{Q}+b:			1.38	1.38

pdate for r2, EV, CV: **r2=0.944, EV=5.58 cfs CV=1.38; max r2=0.968**

r2 u,lnQ:	0.944	u	lnQ	Q
slope, m:	0.967	3	4.29	73
intercept, b:	-1.144	0	1.18	3
N:	39	-3	-1.92	0.1
E[Q]:	5.6	Parameter Estimates		
SD[Q]:	8	from LN regression		
CV[Q]:	1.38	update graph label		

N: 39

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.968 r2 forward
update and rank for new data						
####	0.54	1	0.0159	-2.146	-0.616	0.944
####	0.74	2	0.0414	-1.735	-0.301	0.941
####	*1.01*	3	0.0669	-1.499	0.010	0.939
####	1.15	4	0.0924	-1.326	0.140	0.941
####	1.39	5	0.1178	-1.186	0.329	0.943
####	1.48	6	0.1433	-1.066	0.392	0.949
####	*1.48*	7	0.1688	-0.959	0.392	0.956
####	*1.54*	8	0.1943	-0.862	0.432	0.960
####	1.57	9	0.2197	-0.773	0.451	0.964
####	*1.57*	10	0.2452	-0.690	0.451	0.966
####	1.57	11	0.2707	-0.611	0.451	0.968
####	1.67	12	0.2962	-0.535	0.513	0.967
####	*1.68*	13	0.3217	-0.463	0.519	0.967
####	1.79	14	0.3471	-0.393	0.582	0.965
####	*1.91*	15	0.3726	-0.325	0.647	0.963
####	1.91	16	0.3981	-0.258	0.647	0.961
####	*2.03*	17	0.4236	-0.193	0.708	0.957
####	*2.31*	18	0.4490	-0.128	0.837	0.953
####	*2.51*	19	0.4745	-0.064	0.920	0.949
####	2.8	20	0.5000	0.000	1.030	0.945
####	3.19	21	0.5255	0.064	1.160	0.941
####	*3.63*	22	0.5510	0.128	1.289	0.938
####	3.63	23	0.5764	0.193	1.289	0.939
####	3.93	24	0.6019	0.258	1.369	0.936
####	*4.41*	25	0.6274	0.325	1.484	0.935
####	4.41	26	0.6529	0.393	1.484	0.937
####	*5.03*	27	0.6783	0.463	1.615	0.936
####	*5.03*	28	0.7038	0.535	1.615	0.940
####	5.03	29	0.7293	0.611	1.615	0.939
####	5.31	30	0.7548	0.690	1.670	0.933
####	5.37	31	0.7803	0.773	1.681	0.922
####	*5.74*	32	0.8057	0.862	1.747	0.905
####	*6.55*	33	0.8312	0.959	1.879	0.884
####	*8.36*	34	0.8567	1.066	2.123	0.874
####	*12.76*	35	0.8822	1.186	2.546	0.916
####	*19.16*	36	0.9076	1.326	2.953	
####	23.51	37	0.9331	1.499	3.157	
####	*26.98*	38	0.9586	1.735	3.295	
####	38.12	39	0.9841	2.146	3.641	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: PC307 **Date:** 20-Jun-00
Chemical: dZn **Analyst:** JMacLachlan
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,658	6	971	27		0.00	0.00	0.00
SD:	343	8	204	34		1.00	1.00	1.00
CV:	0.01	1.38	0.21	1.28				
Min:	34,271	1	577	2.7		-0.66	-1.93	-0.70
Max:	35,930	38	1,370	167		4.11	1.95	4.12
Median:	34,564	3	960	14		-0.37	-0.05	-0.37

dZn PC307			: Concentration v. Discharge, Q			Q = mTime +b	LnQ = mTime +b
Conc. = mQ+b (r2=0.137)		update r2	**0.14**	0.137		r2: 0.010	0.016
r2 Q,[COC]:	0.14	[tCd]	Q			m: 0.0023	0.00036
slope, m:	-9.6	1,021	0.5			b: -72	-11.18
intercept, b:	1025.8	971	5.7				
N: 39		659	38				
LnConc. = mLn(Q)+b (r2=0.188)		update r2		0.19	0.188		
r2 lnQ,ln[COC]:	0.19	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.10	7.03	-0.62	1,133	1		
intercept, b:	6.97	6.80	1.74	897	6		
N: 39		6.61	3.64	744	38		

N= 39

	Sampling Date	Q Discharge	dZn Concentration	dZn Load	Ln Q	Ln dZn Conc.	Ln dZn Load	dZn PC307 Standardized Values = (x - Avg)/SD Q	Conc	Load	for graph 0
update for new data		cfs	ug/L	lbs/day							
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis				
IDEQ	29-Oct-93	1.57	1280	10.8	0.45	7.15	2.38	-0.53	1.51	-0.47	
IDEQ	1-Dec-93	1.68	1240	11.2	0.52	7.12	2.42	-0.51	1.32	-0.45	
IDEQ	21-Dec-93	1.79	1230	11.8	0.58	7.11	2.47	-0.50	1.27	-0.43	
IDEQ	21-Dec-93	1.67	1230	11.1	0.51	7.11	2.40	-0.51	1.27	-0.46	
IDEQ	21-Jan-94	2.31	1120	13.9	0.84	7.02	2.63	-0.43	0.73	-0.37	
IDEQ	21-Jan-94	2.51	1120	15.1	0.92	7.02	2.72	-0.41	0.73	-0.34	
IDEQ	17-Feb-94	1.91	1270	13.1	0.65	7.15	2.57	-0.48	1.46	-0.40	
IDEQ	17-Feb-94	1.54	1270	10.5	0.43	7.15	2.35	-0.53	1.46	-0.47	
IDEQ	8-Mar-94	4.41	960	22.8	1.48	6.87	3.13	-0.17	-0.05	-0.11	
IDEQ	23-Mar-94	5.03	966	26.1	1.62	6.87	3.26	-0.09	-0.02	-0.01	
IDEQ	8-Apr-94	5.74	949	29.3	1.75	6.86	3.38	0.00	-0.11	0.08	
IDEQ	8-Apr-94	5.31	949	27.1	1.67	6.86	3.30	-0.05	-0.11	0.01	
IDEQ	18-Apr-94	26.98	578	83.9	3.30	6.36	4.43	2.70	-1.92	1.68	
IDEQ	6-May-94	5.37	786	22.7	1.68	6.67	3.12	-0.04	-0.90	-0.12	
IDEQ	20-May-94	5.03	824	22.3	1.62	6.71	3.10	-0.09	-0.72	-0.13	
IDEQ	9-Jun-94	3.63	1010	19.7	1.29	6.92	2.98	-0.26	0.19	-0.20	
IDEQ	24-Jun-94	2.8	1040	15.7	1.03	6.95	2.75	-0.37	0.34	-0.32	
IDEQ	22-Jul-94	1.57	804	6.8	0.45	6.69	1.92	-0.53	-0.82	-0.58	
IDEQ	18-Aug-94	1.57	1010	8.5	0.45	6.92	2.14	-0.53	0.19	-0.53	
IDEQ	18-Aug-94	1.39	1010	7.6	0.33	6.92	2.02	-0.55	0.19	-0.56	
IDEQ	26-Sep-94	1.15	1120	6.9	0.14	7.02	1.94	-0.58	0.73	-0.58	
IDEQ	5-Oct-94	1.48	1110	8.8	0.39	7.01	2.18	-0.54	0.68	-0.52	
IDEQ	16-Nov-94	2.03	1240	13.5	0.71	7.12	2.61	-0.47	1.32	-0.38	
IDEQ	10-Jan-95	23.51	1040	131.5	3.16	6.95	4.88	2.26	0.34	3.08	
IDEQ	9-Feb-95	19.16	894	92.2	2.95	6.80	4.52	1.71	-0.38	1.93	
IDEQ	7-Mar-95	5.03	969	26.2	1.62	6.88	3.27	-0.09	-0.01	-0.01	
IDEQ	23-Mar-95	38.12	813	166.7	3.64	6.70	5.12	4.11	-0.77	4.12	
IDEQ	14-Apr-95	6.55	948	33.4	1.88	6.85	3.51	0.11	-0.11	0.20	
IDEQ	25-Apr-95	4.41	864	20.5	1.48	6.76	3.02	-0.17	-0.52	-0.18	
IDEQ	10-May-95	12.76	577	39.6	2.55	6.36	3.68	0.89	-1.93	0.38	
IDEQ	24-May-95	3.19	652	11.2	1.16	6.48	2.41	-0.32	-1.56	-0.45	
IDEQ	12-Jun-95	3.63	687	13.4	1.29	6.53	2.60	-0.26	-1.39	-0.39	
IDEQ	27-Jun-95	1.91	690	7.1	0.65	6.54	1.96	-0.48	-1.37	-0.57	
IDEQ	12-Jul-95	1.48	861	6.9	0.39	6.76	1.93	-0.54	-0.54	-0.58	
IDEQ	25-Jul-95	1.01	833	4.5	0.01	6.73	1.51	-0.60	-0.67	-0.65	
IDEQ	14-Aug-95	0.74	943	3.8	-0.30	6.85	1.32	-0.63	-0.14	-0.67	
IDEQ	13-Sep-95	0.54	927	2.7	-0.62	6.83	0.99	-0.66	-0.21	-0.70	
URS	13-Nov-97	3.93	1370	29.0	1.37	7.22	3.37	-0.23	1.95	0.07	
URS	15-May-98	8.36	679	30.5	2.12	6.52	3.42	0.34	-1.43	0.11	

dZn

Concentration over time analysis

	dZn	PC307		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.098**	**-0.00020**
	Time	**Ln[COC]**	**[COC]**		
first:	29-Oct-93	6.93	1,025		
mid:	18-Aug-94	6.87	966		
last:	15-May-98	6.60	733		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

Load over time analysis

	dZn	PC307			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.003**	**0.00015**
	Time	**LnLoad**	**Load**		
first:	29-Oct-93	2.75	16		
mid:	18-Aug-94	2.80	16		
last:	15-May-98	3.01	20		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

	max r2:	0.145		max r2:	0.950	
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.098	-0.00020	13.86	0.003	0.00015	-2.54
	0.081	-0.00018	13.17	0.002	0.00012	-1.37
	0.067	-0.00016	12.53	0.001	0.00009	-0.26
	0.053	-0.00015	11.86	0.000	0.00006	0.75
	0.039	-0.00012	11.11	0.000	0.00002	2.12
	0.031	-0.00011	10.62	0.000	0.00000	2.81
	0.022	-0.00009	10.06	0.000	-0.00001	3.31
	0.011	-0.00006	9.05	0.000	-0.00004	4.33
	0.003	-0.00003	7.90	0.001	-0.00010	6.25
	0.002	-0.00003	7.66	0.001	-0.00008	5.53
	0.001	-0.00002	7.38	0.000	-0.00004	4.24
	0.000	-0.00001	7.13	0.000	0.00001	2.38
	0.000	0.00000	6.84	0.000	0.00007	0.55
	0.008	-0.00005	8.65	0.008	0.00026	-6.39
	0.014	-0.00007	9.30	0.011	0.00032	-8.32
	0.020	-0.00009	9.81	0.014	0.00038	-10.39
	0.014	-0.00007	9.41	0.018	0.00043	-12.10
	0.008	-0.00006	8.79	0.019	0.00045	-12.87
	0.013	-0.00007	9.41	0.011	0.00035	-9.42
	0.009	-0.00006	8.91	0.007	0.00027	-6.72
	0.004	-0.00004	8.30	0.002	0.00016	-2.74
	0.000	-0.00001	7.06	0.000	0.00002	2.10
	0.002	0.00003	5.62	0.001	-0.00010	6.43
	0.025	0.00009	3.41	0.002	-0.00016	8.61
	0.048	0.00013	2.15	0.001	0.00012	-1.41
	0.059	0.00015	1.58	0.015	0.00038	-10.46
	0.086	0.00018	0.55	0.023	0.00047	-13.81
	0.089	0.00018	0.33	0.127	0.00087	-28.01
	0.123	0.00021	-0.79	0.210	0.00107	-35.10
	0.145	0.00024	-1.57	0.281	0.00123	-40.75
	0.106	0.00018	0.28	0.578	0.00155	-52.31
	0.070	0.00014	1.76	0.661	0.00170	-57.43
	0.036	0.00010	3.34	0.834	0.00193	-65.74
	0.005	0.00003	5.65	0.883	0.00207	-70.80
	0.001	0.00001	6.33	0.950	0.00228	-78.25

update for EV, CV:

dZn		**PC307**		
LN Analysis		**dZn**		
Load		**Load Data, EV=26.6 lbs/day CV=1.28**		
Avg:	**27**	**Load Data-based LN**		
SD:	**34**	u	ln tCd Load	tCd Load
CV:	**1.28**	3	5.7	314
Min:	**2.7**	0	2.80	16
Max:	**167**	-3	-0.15	0.9
Median:	**14**			
		27	26.6	
		1.28	1.28	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.959, EV=26.1lbs/day CV=1.21; max r2=0.96**

r2 u,lnLoad:	0.959	u	lnLoad	Load
slope, m:	1.054	3	5.66	287
intercept, b:	-2.965	0	2.81	17
N:	39	-3	-0.03	1.0
E[Load]:	26.1	Parameter Estimates		
SD[Load]:	32	from LN regression		
CV[Load]:	1.21	update graph label		

							0.959
							26.1
							1.2
							max r2
	dZn	N: 39					0.959
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
13-Sep-95	**2.7**	1	0.0159	-2.146	0.991	0.959
14-Aug-95	**3.8**	2	0.0414	-1.735	1.323	0.955
25-Jul-95	**4.5**	3	0.0669	-1.499	1.510	0.951
22-Jul-94	**6.8**	4	0.0924	-1.326	1.916	0.947
12-Jul-95	**6.9**	5	0.1178	-1.186	1.925	0.951
26-Sep-94	**6.9**	6	0.1433	-1.066	1.936	0.952
27-Jun-95	**7.1**	7	0.1688	-0.959	1.959	0.951
18-Aug-94	**7.6**	8	0.1943	-0.862	2.022	0.949
18-Aug-94	**8.5**	9	0.2197	-0.773	2.144	0.947
5-Oct-94	**8.8**	10	0.2452	-0.690	2.179	0.946
17-Feb-94	**10.5**	11	0.2707	-0.611	2.353	0.944
29-Oct-93	**10.8**	12	0.2962	-0.535	2.381	0.946
21-Dec-93	**11.1**	13	0.3217	-0.463	2.403	0.947
24-May-95	**11.2**	14	0.3471	-0.393	2.415	0.948
1-Dec-93	**11.2**	15	0.3726	-0.325	2.417	0.948
21-Dec-93	**11.8**	16	0.3981	-0.258	2.472	0.945
17-Feb-94	**13.1**	17	0.4236	-0.193	2.569	0.943
12-Jun-95	**13.4**	18	0.4490	-0.128	2.597	0.942
16-Nov-94	**13.5**	19	0.4745	-0.064	2.606	0.939
21-Jan-94	**13.9**	20	0.5000	0.000	2.633	0.935
21-Jan-94	**15.1**	21	0.5255	0.064	2.716	0.930
24-Jun-94	**15.7**	22	0.5510	0.128	2.752	0.924
9-Jun-94	**19.7**	23	0.5764	0.193	2.982	0.917
25-Apr-95	**20.5**	24	0.6019	0.258	3.020	0.917
20-May-94	**22.3**	25	0.6274	0.325	3.105	0.917
6-May-94	**22.7**	26	0.6529	0.393	3.123	0.921
8-Mar-94	**22.8**	27	0.6783	0.463	3.126	0.922
23-Mar-94	**26.1**	28	0.7038	0.535	3.264	0.919
7-Mar-95	**26.2**	29	0.7293	0.611	3.267	0.924
8-Apr-94	**27.1**	30	0.7548	0.690	3.300	0.923
13-Nov-97	**29.0**	31	0.7803	0.773	3.366	0.919
8-Apr-94	**29.3**	32	0.8057	0.862	3.378	0.911
15-May-98	**30.5**	33	0.8312	0.959	3.419	0.892
14-Apr-95	**33.4**	34	0.8567	1.066	3.509	0.858
10-May-95	**39.6**	35	0.8822	1.186	3.679	0.816
18-Apr-94	**83.9**	36	0.9076	1.326	4.430	
9-Feb-95	**92.2**	37	0.9331	1.499	4.523	
10-Jan-95	**131.5**	38	0.9586	1.735	4.879	
23-Mar-95	**166.7**	39	0.9841	2.146	5.116	

		update for EV, CV:			
dZn		PC307		971	971
LN Analysis		dZn		0.21	0.211
Concentration		Conc. Data, EV=971 ug/L CV=0.211			
Avg:	971	Data-based LN			
SD:	204	u	ln[tCd]	[tCd]	
CV:	0.21	3	7.5	1775	
Min:	577	0	6.86	950	
Max:	1,370	-3	6.23	509	
Median:	960				

					0.964	0.964
	u=mLn{Conc.}+b:				974.4	974
update for r2, EV, CV:	r2=0.964, EV=974 ug/L CV=0.237; max r2=0.97				0.237	0.237
	r2 u,lnConc:	0.964	u	lnConc.	Conc.	
	slope, m:	4.285	3	7.55	1910	
	intercept, b:	-29.371	0	6.85	948	
	N:	39	-3	6.15	471	
0.959	E[Conc]:	974.4	Parameter Estimates			
26.1	SD[Conc]:	231	from LN regression			
1.21	CV[Conc]:	0.24	update graph label			

	dZn	N: 39				max r2 0.966
Date	Concentration ug/L Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
######	577	1	0.0159	-2.146	6.358	0.964
######	578	2	0.0414	-1.735	6.360	0.958
######	652	3	0.0669	-1.499	6.480	0.960
######	679	4	0.0924	-1.326	6.521	0.957
######	687	5	0.1178	-1.186	6.532	0.955
######	690	6	0.1433	-1.066	6.537	0.956
######	786	7	0.1688	-0.959	6.667	0.966
######	804	8	0.1943	-0.862	6.690	0.963
######	813	9	0.2197	-0.773	6.701	0.960
######	824	10	0.2452	-0.690	6.714	0.956
######	833	11	0.2707	-0.611	6.725	0.954
######	861	12	0.2962	-0.535	6.758	0.951
######	864	13	0.3217	-0.463	6.762	0.947
######	894	14	0.3471	-0.393	6.796	0.944
######	927	15	0.3726	-0.325	6.832	0.940
######	943	16	0.3981	-0.258	6.849	0.935
######	948	17	0.4236	-0.193	6.854	0.931
######	949	18	0.4490	-0.128	6.855	0.925
######	949	19	0.4745	-0.064	6.855	0.918
######	960	20	0.5000	0.000	6.867	0.911
######	966	21	0.5255	0.064	6.873	0.902
######	969	22	0.5510	0.128	6.876	0.892
######	1010	23	0.5764	0.193	6.918	0.885
######	1010	24	0.6019	0.258	6.918	0.871
######	1010	25	0.6274	0.325	6.918	0.857
######	1040	26	0.6529	0.393	6.947	0.849
######	1040	27	0.6783	0.463	6.947	0.836
######	1110	28	0.7038	0.535	7.012	0.846
######	1120	29	0.7293	0.611	7.021	0.821
######	1120	30	0.7548	0.690	7.021	0.789
######	1120	31	0.7803	0.773	7.021	0.765
######	1230	32	0.8057	0.862	7.115	0.900
######	1230	33	0.8312	0.959	7.115	0.904
######	1240	34	0.8567	1.066	7.123	0.894
######	1240	35	0.8822	1.186	7.123	0.890
######	1270	36	0.9076	1.326	7.147	
######	1270	37	0.9331	1.499	7.147	
######	1280	38	0.9586	1.735	7.155	
######	1370	39	0.9841	2.146	7.223	

update for EV, CV:

dZn	PC307		6	5.71
LN Analysis	dZn		1.38	1.38

Discharge, Q **Q Data, EV=5.71 cfs CV=1.38**

		Q Data-based LN		
Avg:	6	u	lnQ	Q
SD:	8	3	4.3	74
CV:	1.38	0	1.21	3
Min:	1	-3	-1.89	0
Max:	38			
Median:	3			

			0.944	0.944
			5.6	5.58
u=mLn(Q)+b:			1.38	1.38

for r2, EV, CV: **r2=0.944, EV=5.58 cfs CV=1.38; max r2=0.97**

r2 u,lnQ:	0.944	u	lnQ	Q
slope, m:	0.967	3	4.29	73
intercept, b:	-1.144	0	1.18	3
N:	39	-3	-1.92	0
E[Q]:	5.6	Parameter Estimates		
SD[Q]:	8	from LN regression		
CV[Q]:	1.38	update graph label		

N: 39 — max r2 = 0.968

Dat	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
	0.54	1	0.0159	-2.146	-0.616	0.944
	0.74	2	0.0414	-1.735	-0.301	0.941
	1.01	3	0.0669	-1.499	0.010	0.939
	1.15	4	0.0924	-1.326	0.140	0.941
	1.39	5	0.1178	-1.186	0.329	0.943
	1.48	6	0.1433	-1.066	0.392	0.949
	1.48	7	0.1688	-0.959	0.392	0.956
	1.54	8	0.1943	-0.862	0.432	0.960
	1.57	9	0.2197	-0.773	0.451	0.964
	1.57	10	0.2452	-0.690	0.451	0.966
	1.57	11	0.2707	-0.611	0.451	0.968
	1.67	12	0.2962	-0.535	0.513	0.967
	1.68	13	0.3217	-0.463	0.519	0.967
	1.79	14	0.3471	-0.393	0.582	0.965
	1.91	15	0.3726	-0.325	0.647	0.963
	1.91	16	0.3981	-0.258	0.647	0.961
	2.03	17	0.4236	-0.193	0.708	0.957
	2.31	18	0.4490	-0.128	0.837	0.953
	2.51	19	0.4745	-0.064	0.920	0.949
	2.8	20	0.5000	0.000	1.030	0.945
	3.19	21	0.5255	0.064	1.160	0.941
	3.63	22	0.5510	0.128	1.289	0.938
	3.63	23	0.5764	0.193	1.289	0.939
	3.93	24	0.6019	0.258	1.369	0.936
	4.41	25	0.6274	0.325	1.484	0.935
	4.41	26	0.6529	0.393	1.484	0.937
	5.03	27	0.6783	0.463	1.615	0.936
	5.03	28	0.7038	0.535	1.615	0.940
	5.03	29	0.7293	0.611	1.615	0.939
	5.31	30	0.7548	0.690	1.670	0.933
	5.37	31	0.7803	0.773	1.681	0.922
	5.74	32	0.8057	0.862	1.747	0.905
	6.55	33	0.8312	0.959	1.879	0.884
	8.36	34	0.8567	1.066	2.123	0.874
	12.76	35	0.8822	1.186	2.546	0.916
	19.16	36	0.9076	1.326	2.953	
	23.51	37	0.9331	1.499	3.157	
	26.98	38	0.9586	1.735	3.295	
	38.12	39	0.9841	2.146	3.641	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: PC307 **Date:** 20-Jun-00
Chemical: tCd **Analyst:** J.MacLachlan
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,658	6	3	0	0.00	0.00	0.00
SD:	343	8	1	0	1.00	1.00	1.00
CV:	0.01	1.38	0.19	1.35			
Min:	34,271	1	1	0.0	-0.66	-2.33	-0.66
Max:	35,930	38	4	1	4.11	2.66	4.56
Median:	34,564	3	3	0	-0.37	0.06	-0.34

tCd	PC307		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.113)		update r2	**0.11**	0.113	r2:	0.010	0.016
r2 Q,[COC]:	0.11	[tCd]	Q		m:	0.0023	0.00036
slope, m:	-0.02	3	0.5		b:	-72	-11.18
intercept, b:	2.7	3	5.7				
N: 39		2	38				
LnConc. = mLn(Q)+b (r2=0.243)		update r2	0.24	0.243			
r2 lnQ,ln[COC]:	0.24	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.10	1.11	-0.62	3	1		
intercept, b:	1.05	0.87	1.74	2	6		
N: 39		0.67	3.64	2	38		

N= 39

	Sampling Date	Q Discharge	tCd Concentration	tCd Load	Ln Q	Ln tCd Conc.	Ln tCd Load	tCd PC307 Standardized Values = (x - Avg)/SD		
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
IDEQ	29-Oct-93	1.57	3	0.0	0.45	1.10	-3.68	-0.53	0.86	-0.48
IDEQ	1-Dec-93	1.68	2.9	0.0	0.52	1.06	-3.64	-0.51	0.66	-0.47
IDEQ	21-Dec-93	1.79	2.8	0.0	0.58	1.03	-3.61	-0.50	0.46	-0.46
IDEQ	21-Dec-93	1.67	2.8	0.0	0.51	1.03	-3.68	-0.51	0.46	-0.48
IDEQ	21-Jan-94	2.31	2.9	0.0	0.84	1.06	-3.32	-0.43	0.66	-0.37
IDEQ	21-Jan-94	2.51	2.9	0.0	0.92	1.06	-3.24	-0.41	0.66	-0.34
IDEQ	17-Feb-94	1.91	2.6	0.0	0.65	0.96	-3.62	-0.48	0.06	-0.47
IDEQ	17-Feb-94	1.54	2.6	0.0	0.43	0.96	-3.84	-0.53	0.06	-0.52
IDEQ	8-Mar-94	4.41	2.1	0.0	1.48	0.74	-3.00	-0.17	-0.94	-0.23
IDEQ	23-Mar-94	5.03	2.4	0.1	1.62	0.88	-2.73	-0.09	-0.34	-0.07
IDEQ	8-Apr-94	5.74	2.1	0.1	1.75	0.74	-2.74	0.00	-0.94	-0.07
IDEQ	8-Apr-94	5.31	2.1	0.1	1.67	0.74	-2.81	-0.05	-0.94	-0.12
IDEQ	18-Apr-94	26.98	1.9	0.3	3.30	0.64	-1.29	2.70	-1.34	2.11
IDEQ	6-May-94	5.37	2.3	0.1	1.68	0.83	-2.71	-0.04	-0.54	-0.06
IDEQ	20-May-94	5.03	2.5	0.1	1.62	0.92	-2.69	-0.09	-0.14	-0.04
IDEQ	9-Jun-94	3.63	2.8	0.1	1.29	1.03	-2.91	-0.26	0.46	-0.18
IDEQ	24-Jun-94	2.8	3.3	0.0	1.03	1.19	-3.00	-0.37	1.46	-0.23
IDEQ	22-Jul-94	1.57	3.2	0.0	0.45	1.16	-3.61	-0.53	1.26	-0.46
IDEQ	18-Aug-94	1.57	2.9	0.0	0.45	1.06	-3.71	-0.53	0.66	-0.49
IDEQ	18-Aug-94	1.39	2.9	0.0	0.33	1.06	-3.83	-0.55	0.66	-0.52
IDEQ	26-Sep-94	1.15	3.5	0.0	0.14	1.25	-3.83	-0.58	1.86	-0.52
IDEQ	5-Oct-94	1.48	3.1	0.0	0.39	1.13	-3.70	-0.54	1.06	-0.49
IDEQ	16-Nov-94	2.03	2.6	0.0	0.71	0.96	-3.56	-0.47	0.06	-0.45
IDEQ	10-Jan-95	23.51	2.2	0.3	3.16	0.79	-1.28	2.26	-0.74	2.14
IDEQ	9-Feb-95	19.16	2.4	0.2	2.95	0.88	-1.40	1.71	-0.34	1.82
IDEQ	7-Mar-95	5.03	2.2	0.1	1.62	0.79	-2.82	-0.09	-0.74	-0.13
IDEQ	23-Mar-95	38.12	2.5	0.5	3.64	0.92	-0.67	4.11	-0.14	4.56
IDEQ	14-Apr-95	6.55	3.9	0.1	1.88	1.36	-1.98	0.11	2.66	0.68
IDEQ	25-Apr-95	4.41	2.1	0.0	1.48	0.74	-3.00	-0.17	-0.94	-0.23
IDEQ	10-May-95	12.76	1.4	0.1	2.55	0.34	-2.34	0.89	-2.33	0.25
IDEQ	24-May-95	3.19	2.2	0.0	1.16	0.79	-3.28	-0.32	-0.74	-0.35
IDEQ	12-Jun-95	3.63	2	0.0	1.29	0.69	-3.24	-0.26	-1.14	-0.34
IDEQ	27-Jun-95	1.91	1.9	0.0	0.65	0.64	-3.94	-0.48	-1.34	-0.54
IDEQ	12-Jul-95	1.48	2.2	0.0	0.39	0.79	-4.04	-0.54	-0.74	-0.56
IDEQ	25-Jul-95	1.01	2.6	0.0	0.01	0.96	-4.26	-0.60	0.06	-0.60
IDEQ	14-Aug-95	0.74	2.8	0.0	-0.30	1.03	-4.50	-0.63	0.46	-0.63
IDEQ	13-Sep-95	0.54	2.8	0.0	-0.62	1.03	-4.81	-0.66	0.46	-0.66
URS	13-Nov-97	3.93	3	0.1	1.37	1.10	-2.76	-0.23	0.86	-0.09
URS	15-May-98	8.36	1.8	0.1	2.12	0.59	-2.51	0.34	-1.54	0.09

tCd

Concentration over time analysis

	tCd	PC307		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.056**	**-0.00014**
	Time	**Ln[COC]**	**[COC]**		
first:	29-Oct-93	0.98	3		
mid:	18-Aug-94	0.94	3		
last:	15-May-98	0.75	2		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

Load over time analysis

	tCd	PC307		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.007**	**0.00022**
	Time	**LnLoad**	**Load**		
first:	29-Oct-93	-3.20	0.04		
mid:	18-Aug-94	-3.14	0.04		
last:	15-May-98	-2.84	0.06		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

max r2:	0.293		max r2:	0.950	
Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
only on >4 data points. delete last 4 rows			only on >4 data points: delete last 4 rows		
0.056	-0.00014	5.75	0.007	0.00022	-10.66
0.047	-0.00013	5.37	0.004	0.00018	-9.17
0.040	-0.00012	5.07	0.003	0.00013	-7.72
0.035	-0.00011	4.85	0.001	0.00009	-6.26
0.030	-0.00011	4.60	0.000	0.00004	-4.39
0.024	-0.00010	4.22	0.000	0.00002	-3.59
0.018	-0.00008	3.79	0.000	0.00000	-2.96
0.016	-0.00008	3.70	0.000	-0.00006	-1.02
0.015	-0.00008	3.60	0.003	-0.00014	1.94
0.022	-0.00010	4.25	0.003	-0.00015	2.12
0.024	-0.00010	4.46	0.002	-0.00012	1.32
0.035	-0.00012	5.19	0.001	-0.00010	0.45
0.049	-0.00015	6.05	0.001	-0.00008	-0.25
0.080	-0.00019	7.44	0.002	0.00013	-7.61
0.094	-0.00021	8.12	0.004	0.00018	-9.49
0.100	-0.00022	8.50	0.007	0.00025	-11.70
0.093	-0.00021	8.37	0.009	0.00029	-13.14
0.071	-0.00019	7.37	0.010	0.00032	-14.29
0.052	-0.00016	6.40	0.007	0.00027	-12.43
0.041	-0.00014	5.81	0.003	0.00019	-9.82
0.029	-0.00012	5.08	0.001	0.00008	-5.96
0.010	-0.00007	3.22	0.000	-0.00004	-1.74
0.001	-0.00003	1.72	0.002	-0.00016	2.54
0.000	-0.00001	1.12	0.006	-0.00026	6.32
0.001	-0.00002	1.40	0.000	-0.00003	-2.16
0.000	-0.00001	1.24	0.005	0.00022	-10.80
0.001	-0.00002	1.53	0.008	0.00028	-12.83
0.000	-0.00001	1.15	0.081	0.00068	-27.19
0.017	0.00008	-1.85	0.191	0.00093	-36.17
0.014	0.00007	-1.66	0.249	0.00106	-40.84
0.001	-0.00002	1.40	0.513	0.00135	-51.18
0.004	-0.00003	1.88	0.642	0.00152	-57.31
0.026	-0.00007	3.39	0.853	0.00176	-65.69
0.138	-0.00015	6.17	0.902	0.00189	-70.27
0.293	-0.00022	8.67	0.950	0.00204	-75.92

update for EV, CV:

tCd		PC307		
LN Analysis		tCd		
Load		Load Data, EV=0.0718 lbs/day CV=1.35		
Avg:	0.1	Load Data-based LN		
SD:	0.1	u	ln tCd Load	tCd Load
CV:	1.35	3	-0.1	1
Min:	0.01	0	-3.15	0.043
Max:	1	-3	-6.20	0.002
Median:	0.04			
		0	0.0718	
		1.35	1.35	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.937, EV=0.0695lbs/day CV=1.21; max r2=0.95**

r2 u,lnLoad:	0.937	u	lnLoad	Load	
slope, m:	1.052	3	-0.27	1	
intercept, b:	3.279	0	-3.12	0.044	
N:	39	-3	-5.97	0.003	
E[Load]:	0.1	Parameter Estimates			0.937
SD[Load]:	0.1	from LN regression			0.1
CV[Load]:	1.21	update graph label			1.2
					max r2
		N: 39			0.948

Date	tCd Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
13-Sep-95	0.0	1	0.0159	-2.146	-4.812	0.937
14-Aug-95	0.0	2	0.0414	-1.735	-4.497	0.932
25-Jul-95	0.0	3	0.0669	-1.499	-4.260	0.928
12-Jul-95	0.0	4	0.0924	-1.326	-4.045	0.926
27-Jun-95	0.0	5	0.1178	-1.186	-3.936	0.928
17-Feb-94	0.0	6	0.1433	-1.066	-3.838	0.932
26-Sep-94	0.0	7	0.1688	-0.959	-3.833	0.936
18-Aug-94	0.0	8	0.1943	-0.862	-3.831	0.939
18-Aug-94	0.0	9	0.2197	-0.773	-3.709	0.940
5-Oct-94	0.0	10	0.2452	-0.690	-3.702	0.944
21-Dec-93	0.0	11	0.2707	-0.611	-3.683	0.946
29-Oct-93	0.0	12	0.2962	-0.535	-3.675	0.948
1-Dec-93	0.0	13	0.3217	-0.463	-3.642	0.947
17-Feb-94	0.0	14	0.3471	-0.393	-3.622	0.947
21-Dec-93	0.0	15	0.3726	-0.325	-3.613	0.945
22-Jul-94	0.0	16	0.3981	-0.258	-3.611	0.942
16-Nov-94	0.0	17	0.4236	-0.193	-3.562	0.937
21-Jan-94	0.0	18	0.4490	-0.128	-3.323	0.931
24-May-95	0.0	19	0.4745	-0.064	-3.277	0.930
12-Jun-95	0.0	20	0.5000	0.000	-3.243	0.928
21-Jan-94	0.0	21	0.5255	0.064	-3.240	0.925
24-Jun-94	0.0	22	0.5510	0.128	-3.002	0.920
8-Mar-94	0.0	23	0.5764	0.193	-2.999	0.924
25-Apr-95	0.0	24	0.6019	0.258	-2.999	0.926
9-Jun-94	0.1	25	0.6274	0.325	-2.906	0.925
7-Mar-95	0.1	26	0.6529	0.393	-2.821	0.926
8-Apr-94	0.1	27	0.6783	0.463	-2.814	0.932
13-Nov-97	0.1	28	0.7038	0.535	-2.758	0.934
8-Apr-94	0.1	29	0.7293	0.611	-2.736	0.936
23-Mar-94	0.1	30	0.7548	0.690	-2.734	0.935
6-May-94	0.1	31	0.7803	0.773	-2.711	0.926
20-May-94	0.1	32	0.8057	0.862	-2.693	0.910
15-May-98	0.1	33	0.8312	0.959	-2.514	0.890
10-May-95	0.1	34	0.8567	1.066	-2.342	0.864
14-Apr-95	0.1	35	0.8822	1.186	-1.985	0.857
9-Feb-95	0.2	36	0.9076	1.326	-1.397	
18-Apr-94	0.3	37	0.9331	1.499	-1.288	
10-Jan-95	0.3	38	0.9586	1.735	-1.279	
23-Mar-95	0.5	39	0.9841	2.146	-0.668	

update for EV, CV:

tCd		PC307		3	2.57
LN Analysis		tCd		0.19	0.195

Concentration

Conc. Data, EV=2.57 ug/L CV=0.195

		Data-based LN		
Avg:	3	u	ln[tCd]	[tCd]
SD:	1	3	1.5	5
CV:	0.19	0	0.92	3
Min:	1	-3	0.35	1
Max:	4			
Median:	3			

					0.967	0.967
	u=mLn(Conc.)+b:				2.6	2.58
update for r2, EV, CV:	r2=0.967, EV=2.58 ug/L CV=0.215; max r2=0.997				0.215	0.215
	r2 u,lnConc:	0.967	u	lnConc.	Conc.	
	slope, m:	4.713	3	1.56	5	
	intercept, b:	-4.354	0	0.92	3	
	N:	39	-3	0.29	1	
0.937	E[Conc]:	2.6	Parameter Estimates			
0.0695	SD[Conc]:	1	from LN regression			
1.21	CV[Conc]:	0.21	update graph label			

	tCd	N: 39				max r2 0.997
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
10-May-95	1.4	1	0.0159	-2.146	0.336	0.967
15-May-98	1.8	2	0.0414	-1.735	0.588	0.978
18-Apr-94	1.9	3	0.0669	-1.499	0.642	0.976
27-Jun-95	1.9	4	0.0924	-1.326	0.642	0.974
12-Jun-95	2	5	0.1178	-1.186	0.693	0.972
8-Apr-94	2.1	6	0.1433	-1.066	0.742	0.969
8-Apr-94	2.1	7	0.1688	-0.959	0.742	0.967
8-Mar-94	2.1	8	0.1943	-0.862	0.742	0.965 *
25-Apr-95	2.1	9	0.2197	-0.773	0.742	0.962
7-Mar-95	2.2	10	0.2452	-0.690	0.788	0.960
10-Jan-95	2.2	11	0.2707	-0.611	0.788	0.957
12-Jul-95	2.2	12	0.2962	-0.535	0.788	0.954
24-May-95	2.2	13	0.3217	-0.463	0.788	0.954
6-May-94	2.3	14	0.3471	-0.393	0.833	0.960
9-Feb-95	2.4	15	0.3726	-0.325	0.875	0.961
23-Mar-94	2.4	16	0.3981	-0.258	0.875	0.958
20-May-94	2.5	17	0.4236	-0.193	0.916	0.957
23-Mar-95	2.5	18	0.4490	-0.128	0.916	0.953
16-Nov-94	2.6	19	0.4745	-0.064	0.956	0.949
17-Feb-94	2.6	20	0.5000	0.000	0.956	0.946
17-Feb-94	2.6	21	0.5255	0.064	0.956	0.941
25-Jul-95	2.6	22	0.5510	0.128	0.956	0.934
9-Jun-94	2.8	23	0.5764	0.193	1.030	0.929
13-Sep-95	2.8	24	0.6019	0.258	1.030	0.938
14-Aug-95	2.8	25	0.6274	0.325	1.030	0.945
21-Dec-93	2.8	26	0.6529	0.393	1.030	0.949
21-Dec-93	2.8	27	0.6783	0.463	1.030	0.950
1-Dec-93	2.9	28	0.7038	0.535	1.065	0.947
18-Aug-94	2.9	29	0.7293	0.611	1.065	0.963
18-Aug-94	2.9	30	0.7548	0.690	1.065	0.977
21-Jan-94	2.9	31	0.7803	0.773	1.065	0.987
21-Jan-94	2.9	32	0.8057	0.862	1.065	0.991
13-Nov-97	3	33	0.8312	0.959	1.099	0.989
29-Oct-93	3	34	0.8567	1.066	1.099	0.997
5-Oct-94	3.1	35	0.8822	1.186	1.131	0.996
22-Jul-94	3.2	36	0.9076	1.326	1.163	
24-Jun-94	3.3	37	0.9331	1.499	1.194	
26-Sep-94	3.5	38	0.9586	1.735	1.253	
14-Apr-95	3.9	39	0.9841	2.146	1.361	

update for EV, CV:

tCd		**PC307**			6	5.71
LN Analysis		**tCd**			1.38	1.38
Discharge, Q		**Q Data, EV=5.71 cfs CV=1.38**				
Avg:	6	**Q Data-based LN**				
SD:	8	u	lnQ	Q		
CV:	1.38	3	4.3	74		
Min:	1	0	1.21	3		
Max:	38	-3	-1.89	0		
Median:	3					

					0.944	0.944
					5.6	5.58
u=mLn(Q)+b:					1.38	1.38
update for r2, EV, CV:	**r2=0.944, EV=5.58 cfs CV=1.38; max r2=0.97**					
r2 u,lnQ:	0.944	u	lnQ	Q		
slope, m:	0.967	3	4.29	73		
intercept, b:	-1.144	0	1.18	3		
N:	39	-3	-1.92	0		
E[Q]:	5.6	Parameter Estimates				
SD[Q]:	8	from LN regression				
CV[Q]:	1.38	update graph label				

	Q	N: 39				max r2 0.968
Date	**Discharge cfs Ranked**	**i rank**	**i-3/8 / N+1/4 plotting points**	**u y-axis**	**Ln x-axis**	**r2 forward**
update and rank for new data						
13-Sep-95	0.54	1	0.0159	-2.146	-0.616	0.944
14-Aug-95	0.74	2	0.0414	-1.735	-0.301	0.941
25-Jul-95	1.01	3	0.0669	-1.499	0.010	0.939
26-Sep-94	1.15	4	0.0924	-1.326	0.140	0.941
18-Aug-94	1.39	5	0.1178	-1.186	0.329	0.943
5-Oct-94	1.48	6	0.1433	-1.066	0.392	0.949
12-Jul-95	1.48	7	0.1688	-0.959	0.392	0.956
17-Feb-94	1.54	8	0.1943	-0.862	0.432	0.960
18-Aug-94	1.57	9	0.2197	-0.773	0.451	0.964
22-Jul-94	1.57	10	0.2452	-0.690	0.451	0.966
29-Oct-93	1.57	11	0.2707	-0.611	0.451	0.968
21-Dec-93	1.67	12	0.2962	-0.535	0.513	0.967
1-Dec-93	1.68	13	0.3217	-0.463	0.519	0.967
21-Dec-93	1.79	14	0.3471	-0.393	0.582	0.965
17-Feb-94	1.91	15	0.3726	-0.325	0.647	0.963
27-Jun-95	1.91	16	0.3981	-0.258	0.647	0.961
16-Nov-94	2.03	17	0.4236	-0.193	0.708	0.957
21-Jan-94	2.31	18	0.4490	-0.128	0.837	0.953
21-Jan-94	2.51	19	0.4745	-0.064	0.920	0.949
24-Jun-94	2.8	20	0.5000	0.000	1.030	0.945
24-May-95	3.19	21	0.5255	0.064	1.160	0.941
9-Jun-94	3.63	22	0.5510	0.128	1.289	0.938
12-Jun-95	3.63	23	0.5764	0.193	1.289	0.939
13-Nov-97	3.93	24	0.6019	0.258	1.369	0.936
8-Mar-94	4.41	25	0.6274	0.325	1.484	0.935
25-Apr-95	4.41	26	0.6529	0.393	1.484	0.937
7-Mar-95	5.03	27	0.6783	0.463	1.615	0.936
20-May-94	5.03	28	0.7038	0.535	1.615	0.940
23-Mar-94	5.03	29	0.7293	0.611	1.615	0.939
8-Apr-94	5.31	30	0.7548	0.690	1.670	0.933
6-May-94	5.37	31	0.7803	0.773	1.681	0.922
8-Apr-94	5.74	32	0.8057	0.862	1.747	0.905
14-Apr-95	6.55	33	0.8312	0.959	1.879	0.884
15-May-98	8.36	34	0.8567	1.066	2.123	0.874
10-May-95	12.76	35	0.8822	1.186	2.546	0.916
9-Feb-95	19.16	36	0.9076	1.326	2.953	
10-Jan-95	23.51	37	0.9331	1.499	3.157	
18-Apr-94	26.98	38	0.9586	1.735	3.295	
23-Mar-95	38.12	39	0.9841	2.146	3.641	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	**PC307**	**Date:**	20-Jun-00
Chemical:	**tPb**	**Analyst:**	J.MacLachlan
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load				
Avg:	34,658	6	7	0.3		0.00	0.00	0.00
SD:	343	8	4	0.5		1.00	1.00	1.00
CV:	0.01	1.38	0.52	1.42				
Min:	34,271	1	2	0.0		-0.66	-1.37	-0.67
Max:	35,930	38	19	1		4.11	3.35	2.47
Median:	34,564	3	6	0.1		-0.37	-0.26	-0.51

tPb	PC307		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.00652)		update r2	0.01	0.00652	r2:	0.010	0.016
r2 Q,[COC]:	0.01	[tCd]	Q		m:	0.0023	0.00036
slope, m:	0.03	7	0.5		b:	-72	-11.18
intercept, b:	6.7	7	5.7				
N: 19		8	38				
LnConc. = mLn(Q)+b (r2=0.0000701)		update r2		0.00	0.0000701		
r2 lnQ,ln[COC]:	0.0001	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	0.003	1.81	-0.62	6	1		
intercept, b:	1.81	1.82	1.74	6	6		
N: 19		1.83	3.64	6	38		

N= 39

	Sampling Date	Q Discharge	tPb Concentration	tPb Load	Ln Q	Ln tPb Conc.	Ln tPb Load	tPb PC307 Standardized Values = (x - Avg)/SD		
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
IDEQ	29-Oct-93	1.57	7	0.06	0.45	1.95	-2.83	-0.53	0.02	-0.57
IDEQ	1-Dec-93	1.68	6	0.05	0.52	1.79	-2.91	-0.51	-0.26	-0.58
IDEQ	*21-Dec-93*	*1.79*			0.58			-0.50		
IDEQ	*21-Dec-93*	*1.67*			0.51			-0.51		
IDEQ	*21-Jan-94*	*2.31*			0.84			-0.43		
IDEQ	*21-Jan-94*	*2.51*			0.92			-0.41		
IDEQ	*17-Feb-94*	*1.91*			0.65			-0.48		
IDEQ	*17-Feb-94*	*1.54*			0.43			-0.53		
IDEQ	8-Mar-94	4.41	10	0.24	1.48	2.30	-1.44	-0.17	0.85	-0.18
IDEQ	23-Mar-94	5.03	5	0.14	1.62	1.61	-2.00	-0.09	-0.54	-0.41
IDEQ	*8-Apr-94*	*5.74*			1.75			0.00		
IDEQ	*8-Apr-94*	*5.31*			1.67			-0.05		
IDEQ	18-Apr-94	26.98	10	1.45	3.30	2.30	0.37	2.70	0.85	2.47
IDEQ	*6-May-94*	*5.37*			1.68			-0.04		
IDEQ	*20-May-94*	*5.03*			1.62			-0.09		
IDEQ	*9-Jun-94*	*3.63*			1.29			-0.26		
IDEQ	*24-Jun-94*	*2.8*			1.03			-0.37		
IDEQ	*22-Jul-94*	*1.57*			0.45			-0.53		
IDEQ	*18-Aug-94*	*1.57*			0.45			-0.53		
IDEQ	*18-Aug-94*	*1.39*			0.33			-0.55		
IDEQ	26-Sep-94	1.15	6	0.04	0.14	1.79	-3.29	-0.58	-0.26	-0.62
IDEQ	5-Oct-94	1.48	19	0.15	0.39	2.94	-1.89	-0.54	3.35	-0.37
IDEQ	16-Nov-94	2.03	5	0.05	0.71	1.61	-2.91	-0.47	-0.54	-0.58
IDEQ	10-Jan-95	23.51	10	1.26	3.16	2.30	0.23	2.26	0.85	2.06
IDEQ	9-Feb-95	19.16	7	0.72	2.95	1.95	-0.33	1.71	0.02	0.87
IDEQ	7-Mar-95	5.03	7	0.19	1.62	1.95	-1.66	-0.09	0.02	-0.29
IDEQ	23-Mar-95	38.12	6	1.23	3.64	1.79	0.21	4.11	-0.26	1.99
IDEQ	14-Apr-95	6.55	5	0.18	1.88	1.61	-1.74	0.11	-0.54	-0.32
IDEQ	*25-Apr-95*	*4.41*			1.48			-0.17		
IDEQ	*10-May-95*	*12.76*			2.55			0.89		
IDEQ	24-May-95	3.19	5	0.09	1.16	1.61	-2.46	-0.32	-0.54	-0.52
IDEQ	*12-Jun-95*	*3.63*			1.29			-0.26		
IDEQ	27-Jun-95	1.91	5	0.05	0.65	1.61	-2.97	-0.48	-0.54	-0.59
IDEQ	*12-Jul-95*	*1.48*			0.39			-0.54		
IDEQ	25-Jul-95	1.01	9	0.05	0.01	2.20	-3.02	-0.60	0.58	-0.60
IDEQ	*14-Aug-95*	*0.74*			-0.30			-0.63		
IDEQ	13-Sep-95	0.54	5	0.01	-0.62	1.61	-4.23	-0.66	-0.54	-0.67
URS	13-Nov-97	3.93	2.6	0.05	1.37	0.96	-2.90	-0.23	-1.20	-0.58
URS	15-May-98	8.36	2	0.09	2.12	0.69	-2.41	0.34	-1.37	-0.51

tPb

Concentration over time analysis

	tPb	PC307		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.494**	**-0.00082**
	Time	**Ln[COC]**	**[COC]**		
first:	29-Oct-93	2.23	9		
mid:	18-Aug-94	1.99	7		
last:	15-May-98	0.88	2		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

Load over time analysis

	tPb	PC307			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.041**	**-0.00062**
	Time	**LnLoad**	**Load**		
first:	29-Oct-93	-1.69	0.2		
mid:	18-Aug-94	-1.88	0.2		
last:	15-May-98	-2.73	0.1		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

max r2:	0.898		max r2:	0.529	
Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.494	-0.00082	30.26	0.041	-0.00062	19.64
0.513	-0.00087	32.05	0.067	-0.00082	26.71
0.568	-0.00096	35.14	0.111	-0.00109	35.98
0.568	-0.00096	35.14	0.111	-0.00109	35.98
0.568	-0.00096	35.14	0.111	-0.00109	35.98
0.568	-0.00096	35.14	0.111	-0.00109	35.98
0.568	-0.00096	35.14	0.111	-0.00109	35.98
0.568	-0.00096	35.14	0.111	-0.00109	35.98
0.568	-0.00096	35.14	0.111	-0.00109	35.98
0.543	-0.00094	34.67	0.104	-0.00109	36.00
0.638	-0.00106	38.93	0.115	-0.00120	39.94
0.638	-0.00106	38.93	0.115	-0.00120	39.94
0.638	-0.00106	38.93	0.115	-0.00120	39.94
0.613	-0.00106	38.69	0.058	-0.00080	25.77
0.613	-0.00106	38.69	0.058	-0.00080	25.77
0.613	-0.00106	38.69	0.058	-0.00080	25.77
0.613	-0.00106	38.69	0.058	-0.00080	25.77
0.613	-0.00106	38.69	0.058	-0.00080	25.77
0.613	-0.00106	38.69	0.058	-0.00080	25.77
0.613	-0.00106	38.69	0.058	-0.00080	25.77
0.613	-0.00106	38.69	0.058	-0.00080	25.77
0.640	-0.00111	40.55	0.101	-0.00105	34.62
0.733	-0.00095	34.96	0.103	-0.00109	36.23
0.795	-0.00102	37.45	0.152	-0.00134	44.99
0.817	-0.00096	35.10	0.105	-0.00100	32.73
0.806	-0.00094	34.61	0.060	-0.00068	21.38
0.793	-0.00092	33.76	0.041	-0.00056	17.38
0.781	-0.00092	33.91	0.005	0.00011	-6.69
0.807	-0.00098	36.08	0.132	0.00049	-20.11
0.807	-0.00098	36.08	0.132	0.00049	-20.11
0.807	-0.00098	36.08	0.132	0.00049	-20.11
0.840	-0.00107	39.03	0.357	0.00079	-30.90
0.840	-0.00107	39.03	0.357	0.00079	-30.90
0.898	-0.00121	44.12	0.529	0.00106	-40.74
0.898	-0.00121	44.12	0.529	0.00106	-40.74

update for EV, CV:

tPb **PC307**

LN Analysis **tPb**

Load **Load Data, EV=0.322 lbs/day CV=1.42**

Avg:	**0.3**	**Load Data-based LN**		
SD:	**0.5**	u	ln tCd Load	tCd Load
CV:	**1.42**	3	1.5	4
Min:	**0.01**	0	-1.69	0.2
Max:	**1**	-3	-4.84	0.01
Median:	**0.1**			
		0	0.322	
		1.42	1.42	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.939, EV=0.233lbs/day CV=7.51; max r2=0.94**

r2 u,lnLoad:	0.939	u	lnLoad	Load	
slope, m:	0.497	3	2.55	13	
intercept, b:	1.731	0	-3.48	0.03	
N:	19	-3	-9.52	0.0001	
E[Load]:	0.2	Parameter Estimates			0.939
SD[Load]:	2	from LN regression			0.2
CV[Load]:	7.51	update graph label			7.5
					max r2
	tPb	N: 39			0.939

Date	Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
14-Aug-95		1	0.0159	-2.146		
18-Aug-94		2	0.0414	-1.735		
12-Jul-95		3	0.0669	-1.499		
17-Feb-94		4	0.0924	-1.326		
22-Jul-94		5	0.1178	-1.186		
18-Aug-94		6	0.1433	-1.066		
21-Dec-93		7	0.1688	-0.959		
21-Dec-93		8	0.1943	-0.862		
17-Feb-94		9	0.2197	-0.773		
13-Sep-95	**0.01**	10	0.2452	-0.690	-4.232	0.939
21-Jan-94		11	0.2707	-0.611		
21-Jan-94		12	0.2962	-0.535		
24-Jun-94		13	0.3217	-0.463		
9-Jun-94		14	0.3471	-0.393		
12-Jun-95		15	0.3726	-0.325		
25-Apr-95		16	0.3981	-0.258		
20-May-94		17	0.4236	-0.193		
8-Apr-94		18	0.4490	-0.128		
6-May-94		19	0.4745	-0.064		
26-Sep-94	**0.04**	20	0.5000	0.000	-3.294	0.939
8-Apr-94		21	0.5255	0.064		
25-Jul-95	**0.05**	22	0.5510	0.128	-3.018	0.936
27-Jun-95	**0.05**	23	0.5764	0.193	-2.969	0.935
1-Dec-93	**0.05**	24	0.6019	0.258	-2.915	0.934
16-Nov-94	**0.05**	25	0.6274	0.325	-2.908	0.930
13-Nov-97	**0.05**	26	0.6529	0.393	-2.901	0.923
29-Oct-93	**0.06**	27	0.6783	0.463	-2.828	0.911
10-May-95		28	0.7038	0.535		
24-May-95	**0.09**	29	0.7293	0.611	-2.456	0.894
15-May-98	**0.09**	30	0.7548	0.690	-2.408	0.876
23-Mar-94	**0.14**	31	0.7803	0.773	-2.000	0.851
5-Oct-94	**0.15**	32	0.8057	0.862	-1.889	0.822
14-Apr-95	**0.18**	33	0.8312	0.959	-1.736	0.779
7-Mar-95	**0.19**	34	0.8567	1.066	-1.664	0.713
8-Mar-94	**0.24**	35	0.8822	1.186	-1.439	0.606
9-Feb-95	**0.72**	36	0.9076	1.326	-0.326	
23-Mar-95	**1.23**	37	0.9331	1.499	0.207	
10-Jan-95	**1.26**	38	0.9586	1.735	0.235	
18-Apr-94	**1.45**	39	0.9841	2.146	0.373	

update for EV, CV:

tPb		PC307		7	6.93
LN Analysis		tPb		0.52	0.52

Concentration — **Conc. Data, EV=6.93 ug/L CV=0.52**

		Data-based LN		
Avg:	7	u	ln[tCd]	[tCd]
SD:	4	3	3.3	27
CV:	0.52	0	1.82	6
Min:	2	-3	0.35	1
Max:	19			
Median:	6			

					0.845	0.845
	u=mLn(Conc.)+b:				4.5	4.52
update for r1, EV, CV:	r2=0.845, EV=4.52 ug/L CV=1.19; max r2=0.945				1.186	1.19
	r2 u,lnConc:	0.845	u	lnConc.	Conc.	
	slope, m:	1.067	3	3.88	48	
	intercept, b:	-1.141	0	1.07	3	
	N:	19	-3	-1.74	0.2	
0.939	E[Conc]:	4.5	Parameter Estimates			
0.233	SD[Conc]:	5	from LN regression			
7.51	CV[Conc]:	1.19	update graph label			

	tPb	N: 39				max r2 0.945
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
21-Dec-93		1	0.0159	-2.146		
21-Dec-93		2	0.0414	-1.735		
21-Jan-94		3	0.0669	-1.499		
21-Jan-94		4	0.0924	-1.326		
17-Feb-94		5	0.1178	-1.186		
17-Feb-94		6	0.1433	-1.066		
8-Apr-94		7	0.1688	-0.959		
8-Apr-94		8	0.1943	-0.862		
6-May-94		9	0.2197	-0.773		
20-May-94		10	0.2452	-0.690		
9-Jun-94		11	0.2707	-0.611		
24-Jun-94		12	0.2962	-0.535		
22-Jul-94		13	0.3217	-0.463		
18-Aug-94		14	0.3471	-0.393		
18-Aug-94		15	0.3726	-0.325		
25-Apr-95		16	0.3981	-0.258		
10-May-95		17	0.4236	-0.193		
12-Jun-95		18	0.4490	-0.128		
12-Jul-95		19	0.4745	-0.064		
14-Aug-95		20	0.5000	0.000		
15-May-98	2	21	0.5255	0.064	0.693	0.845
13-Nov-97	2.6	22	0.5510	0.128	0.956	0.890
23-Mar-94	5	23	0.5764	0.193	1.609	0.937
16-Nov-94	5	24	0.6019	0.258	1.609	0.942
14-Apr-95	5	25	0.6274	0.325	1.609	0.945
24-May-95	5	26	0.6529	0.393	1.609	0.944
27-Jun-95	5	27	0.6783	0.463	1.609	0.939
13-Sep-95	5	28	0.7038	0.535	1.609	0.931
1-Dec-93	6	29	0.7293	0.611	1.792	0.920
26-Sep-94	6	30	0.7548	0.690	1.792	0.917
23-Mar-95	6	31	0.7803	0.773	1.792	0.906
29-Oct-93	7	32	0.8057	0.862	1.946	0.885
9-Feb-95	7	33	0.8312	0.959	1.946	0.876
7-Mar-95	7	34	0.8567	1.066	1.946	0.848
25-Jul-95	9	35	0.8822	1.186	2.197	0.789
8-Mar-94	10	36	0.9076	1.326	2.303	
18-Apr-94	10	37	0.9331	1.499	2.303	
10-Jan-95	10	38	0.9586	1.735	2.303	
5-Oct-94	19	39	0.9841	2.146	2.944	

update for EV, CV:

tPb		**PC307**			6	5.71
LN Analysis		**tPb**			1.38	1.38
Discharge, Q		**Q Data, EV=5.71 cfs CV=1.38**				
Avg:	**6**	**Q Data-based LN**				
SD:	**8**	u	lnQ	Q		
CV:	**1.38**	3	4.3	74		
Min:	**1**	0	1.21	3		
Max:	**38**	-3	-1.89	0.2		
Median:	**3**					

					0.944	0.944
					5.6	5.58
u=mLn(Q)+b:					1.38	1.38

update for r2, EV, CV: **r2=0.944, EV=5.58 cfs CV=1.38; max r2=0.968**

r2 u,lnQ:	0.944	u	lnQ	Q
slope, m:	0.967	3	4.29	73
intercept, b:	-1.144	0	1.18	3
N:	39	-3	-1.92	0.1
E[Q]:	5.6	Parameter Estimates		
SD[Q]:	8	from LN regression		
CV[Q]:	1.38	update graph label		

N: 39

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.968 r2 forward
update and rank for new data						
13-Sep-95	0.54	1	0.0159	-2.146	-0.616	0.944
14-Aug-95	*0.74*	2	0.0414	-1.735	-0.301	0.941
25-Jul-95	1.01	3	0.0669	-1.499	0.010	0.939
26-Sep-94	1.15	4	0.0924	-1.326	0.140	0.941
18-Aug-94	*1.39*	5	0.1178	-1.186	0.329	0.943
5-Oct-94	1.48	6	0.1433	-1.066	0.392	0.949
12-Jul-95	*1.48*	7	0.1688	-0.959	0.392	0.956
17-Feb-94	*1.54*	8	0.1943	-0.862	0.432	0.960
29-Oct-93	1.57	9	0.2197	-0.773	0.451	0.964
22-Jul-94	*1.57*	10	0.2452	-0.690	0.451	0.966
18-Aug-94	*1.57*	11	0.2707	-0.611	0.451	0.968
21-Dec-93	*1.67*	12	0.2962	-0.535	0.513	0.967
1-Dec-93	1.68	13	0.3217	-0.463	0.519	0.967
21-Dec-93	*1.79*	14	0.3471	-0.393	0.582	0.965
17-Feb-94	*1.91*	15	0.3726	-0.325	0.647	0.963
27-Jun-95	1.91	16	0.3981	-0.258	0.647	0.961
16-Nov-94	2.03	17	0.4236	-0.193	0.708	0.957
21-Jan-94	*2.31*	18	0.4490	-0.128	0.837	0.953
21-Jan-94	*2.51*	19	0.4745	-0.064	0.920	0.949
24-Jun-94	*2.8*	20	0.5000	0.000	1.030	0.945
24-May-95	3.19	21	0.5255	0.064	1.160	0.941
9-Jun-94	*3.63*	22	0.5510	0.128	1.289	0.938
12-Jun-95	*3.63*	23	0.5764	0.193	1.289	0.939
13-Nov-97	3.93	24	0.6019	0.258	1.369	0.936
8-Mar-94	4.41	25	0.6274	0.325	1.484	0.935
25-Apr-95	*4.41*	26	0.6529	0.393	1.484	0.937
23-Mar-94	5.03	27	0.6783	0.463	1.615	0.936
20-May-94	*5.03*	28	0.7038	0.535	1.615	0.940
7-Mar-95	5.03	29	0.7293	0.611	1.615	0.939
8-Apr-94	*5.31*	30	0.7548	0.690	1.670	0.933
6-May-94	*5.37*	31	0.7803	0.773	1.681	0.922
8-Apr-94	*5.74*	32	0.8057	0.862	1.747	0.905
14-Apr-95	6.55	33	0.8312	0.959	1.879	0.884
15-May-98	8.36	34	0.8567	1.066	2.123	0.874
10-May-95	*12.76*	35	0.8822	1.186	2.546	0.916
9-Feb-95	19.16	36	0.9076	1.326	2.953	
10-Jan-95	23.51	37	0.9331	1.499	3.157	
18-Apr-94	26.98	38	0.9586	1.735	3.295	
23-Mar-95	38.12	39	0.9841	2.146	3.641	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.	see comment
Station: PC307	Date: 20-Jun-00
Chemical: tZn	Analyst: J.MacLachlan
Notes:	
Input Discharge and Concentration Data below (in red)	

	Date	Discharge	Concentration	Load			
Avg:	34,658	6	957	26	0.00	0.00	0.00
SD:	343	8	207	33	1.00	1.00	1.00
CV:	0.01	1.38	0.22	1.27			
Min:	34,271	1	582	2.6	-0.66	-1.82	-0.71
Max:	35,930	38	1,460	160	4.11	2.43	4.00
Median:	34,564	3	955	14	-0.37	-0.01	-0.36

tZn PC307		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.125)	update r2	0.13	0.125		r2:	0.010	0.016
r2 Q,[COC]:	0.13	[tCd]	Q		m:	0.0023	0.00036
slope, m:	-9.3	1,005	0.5		b:	-72	-11.18
intercept, b:	1010.4	957	5.7				
N: 39		656	38				
LnConc. = mLn(Q)+b (r2=0.163)		update r2		0.16	0.163		
r2 lnQ,ln[COC]:	0.16	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.09	7.01	-0.62	1,103	1		
intercept, b:	6.95	6.79	1.74	888	6		
N: 39		6.61	3.64	745	38		

N= 39

	Sampling Date	Q Discharge	tZn Concentration	tZn Load	Ln Q	Ln tZn Conc.	Ln tZn Load	tZn PC307 for graph 0 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
IDEQ	29-Oct-93	1.57	1270	10.7	0.45	7.15	2.37	-0.53	1.51	-0.47
IDEQ	1-Dec-93	1.68	1270	11.5	0.52	7.15	2.44	-0.51	1.51	-0.45
IDEQ	21-Dec-93	1.79	1210	11.7	0.58	7.10	2.46	-0.50	1.22	-0.44
IDEQ	21-Dec-93	1.67	1210	10.9	0.51	7.10	2.39	-0.51	1.22	-0.46
IDEQ	21-Jan-94	2.31	1160	14.4	0.84	7.06	2.67	-0.43	0.98	-0.36
IDEQ	21-Jan-94	2.51	1160	15.7	0.92	7.06	2.75	-0.41	0.98	-0.32
IDEQ	17-Feb-94	1.91	1220	12.5	0.65	7.11	2.53	-0.48	1.27	-0.41
IDEQ	17-Feb-94	1.54	1220	10.1	0.43	7.11	2.31	-0.53	1.27	-0.49
IDEQ	8-Mar-94	4.41	940	22.3	1.48	6.85	3.10	-0.17	-0.08	-0.12
IDEQ	23-Mar-94	5.03	955	25.8	1.62	6.86	3.25	-0.09	-0.01	-0.01
IDEQ	8-Apr-94	5.74	893	27.6	1.75	6.79	3.32	0.00	-0.31	0.04
IDEQ	8-Apr-94	5.31	893	25.5	1.67	6.79	3.24	-0.05	-0.31	-0.02
IDEQ	18-Apr-94	26.98	593	86.1	3.30	6.39	4.46	2.70	-1.76	1.79
IDEQ	6-May-94	5.37	773	22.3	1.68	6.65	3.11	-0.04	-0.89	-0.12
IDEQ	20-May-94	5.03	813	22.0	1.62	6.70	3.09	-0.09	-0.70	-0.13
IDEQ	9-Jun-94	3.63	1000	19.5	1.29	6.91	2.97	-0.26	0.21	-0.20
IDEQ	24-Jun-94	2.8	1010	15.2	1.03	6.92	2.72	-0.37	0.25	-0.33
IDEQ	22-Jul-94	1.57	773	6.5	0.45	6.65	1.88	-0.53	-0.89	-0.59
IDEQ	18-Aug-94	1.57	980	8.3	0.45	6.89	2.11	-0.53	0.11	-0.54
IDEQ	18-Aug-94	1.39	980	7.3	0.33	6.89	1.99	-0.55	0.11	-0.57
IDEQ	26-Sep-94	1.15	1080	6.7	0.14	6.98	1.90	-0.58	0.59	-0.59
IDEQ	5-Oct-94	1.48	1060	8.4	0.39	6.97	2.13	-0.54	0.50	-0.54
IDEQ	16-Nov-94	2.03	1180	12.9	0.71	7.07	2.56	-0.47	1.08	-0.40
IDEQ	10-Jan-95	23.51	1040	131.5	3.16	6.95	4.88	2.26	0.40	3.16
IDEQ	9-Feb-95	19.16	876	90.3	2.95	6.78	4.50	1.71	-0.39	1.92
IDEQ	7-Mar-95	5.03	978	26.5	1.62	6.89	3.28	-0.09	0.10	0.00
IDEQ	23-Mar-95	38.12	778	159.6	3.64	6.66	5.07	4.11	-0.87	4.00
IDEQ	14-Apr-95	6.55	970	34.2	1.88	6.88	3.53	0.11	0.06	0.24
IDEQ	25-Apr-95	4.41	828	19.6	1.48	6.72	2.98	-0.17	-0.63	-0.20
IDEQ	10-May-95	12.76	582	40.0	2.55	6.37	3.69	0.89	-1.82	0.41
IDEQ	24-May-95	3.19	647	11.1	1.16	6.47	2.41	-0.32	-1.50	-0.46
IDEQ	12-Jun-95	3.63	682	13.3	1.29	6.53	2.59	-0.26	-1.33	-0.39
IDEQ	27-Jun-95	1.91	680	7.0	0.65	6.52	1.94	-0.48	-1.34	-0.58
IDEQ	12-Jul-95	1.48	840	6.7	0.39	6.73	1.90	-0.54	-0.57	-0.59
IDEQ	25-Jul-95	1.01	817	4.4	0.01	6.71	1.49	-0.60	-0.68	-0.66
IDEQ	14-Aug-95	0.74	930	3.7	-0.30	6.84	1.31	-0.63	-0.13	-0.68
IDEQ	13-Sep-95	0.54	888	2.6	-0.62	6.79	0.95	-0.66	-0.34	-0.71
URS	13-Nov-97	3.93	1460	30.9	1.37	7.29	3.43	-0.23	2.43	0.14
URS	15-May-98	8.36	696	31.3	2.12	6.55	3.44	0.34	-1.26	0.15

tZn

Concentration over time analysis

	tZn	PC307		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.074**	**-0.00018**
	Time	**Ln[COC]**	**[COC]**		
first:	29-Oct-93	6.91	1,000		
mid:	18-Aug-94	6.86	950		
last:	15-May-98	6.62	748		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

Load over time analysis

	tZn	PC307			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.005**	**0.00018**
	Time	**LnLoad**	**Load**		
first:	29-Oct-93	2.73	15		
mid:	18-Aug-94	2.78	16		
last:	15-May-98	3.03	21		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

	max r2: 0.204			max r2: 0.947		
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.074	-0.00018	12.92	0.005	0.00018	-3.49
	0.058	-0.00015	12.17	0.003	0.00015	-2.37
	0.043	-0.00013	11.38	0.002	0.00012	-1.41
	0.032	-0.00011	10.68	0.001	0.00009	-0.43
	0.021	-0.00009	9.90	0.000	0.00006	0.90
	0.013	-0.00007	9.20	0.000	0.00004	1.40
	0.006	-0.00005	8.42	0.000	0.00003	1.67
	0.001	-0.00002	7.43	0.000	0.00000	2.70
	0.001	0.00001	6.30	0.000	-0.00005	4.65
	0.001	0.00002	6.02	0.000	-0.00003	3.89
	0.003	0.00003	5.65	0.000	0.00001	2.51
	0.003	0.00004	5.51	0.000	0.00006	0.76
	0.004	0.00004	5.34	0.001	0.00011	-0.95
	0.000	0.00000	6.91	0.011	0.00031	-8.13
	0.001	-0.00002	7.49	0.014	0.00037	-10.12
	0.003	-0.00003	7.91	0.018	0.00043	-12.29
	0.001	-0.00002	7.39	0.022	0.00048	-14.12
	0.000	0.00000	6.75	0.023	0.00051	-14.92
	0.001	-0.00002	7.39	0.015	0.00041	-11.44
	0.000	0.00000	6.88	0.010	0.00033	-8.75
	0.000	0.00001	6.26	0.004	0.00022	-4.79
	0.005	0.00005	5.05	0.001	0.00008	0.09
	0.017	0.00009	3.71	0.000	-0.00005	4.53
	0.052	0.00015	1.65	0.001	-0.00011	6.85
	0.087	0.00018	0.28	0.003	0.00017	-3.27
	0.100	0.00020	-0.28	0.019	0.00043	-12.32
	0.138	0.00023	-1.46	0.029	0.00053	-15.82
	0.136	0.00024	-1.55	0.137	0.00092	-29.88
	0.187	0.00027	-2.89	0.225	0.00113	-37.21
	0.204	0.00029	-3.54	0.292	0.00128	-42.72
	0.167	0.00024	-1.88	0.587	0.00161	-54.46
	0.128	0.00021	-0.49	0.668	0.00176	-59.68
	0.088	0.00017	0.95	0.836	0.00200	-68.13
	0.039	0.00010	3.16	0.883	0.00214	-73.29
	0.024	0.00008	3.83	0.947	0.00235	-80.76

update for EV, CV:

tZn **PC307**

LN Analysis **tZn**

Load **Load Data, EV=26.3 lbs/day CV=1.27**

Avg:	**26**	**Load Data-based LN**		
SD:	**33**	u	ln tCd Load	tCd Load
CV:	**1.27**	3	5.7	307
Min:	**2.6**	0	2.79	16
Max:	**160**	-3	-0.14	0.9
Median:	**14**			
		26	26.3	
		1.27	1.27	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.962, EV=25.9lbs/day CV=1.22; max r2=0.96**

r2 u,lnLoad:	0.962	u	lnLoad	Load		
slope, m:	1.048	3	5.66	288		
intercept, b:	-2.932	0	2.80	16		
N:	39	-3	-0.06	0.9		
E[Load]:	25.9	Parameter Estimates			0.962	0.962
SD[Load]:	32	from LN regression			25.9	25.9
CV[Load]:	1.22	update graph label			1.2	1.22
					max r2	
	tZn	N: 39			0.962	

Date	**Load lbs/day Ranked**	**i rank**	**i-3/8 / N+1/4 plotting points**	**u y-axis**	**Ln x-axis**	**r2 forward**
update and rank for new data						
13-Sep-95	**2.6**	1	0.0159	-2.146	0.948	0.962
14-Aug-95	**3.7**	2	0.0414	-1.735	1.309	0.958
25-Jul-95	**4.4**	3	0.0669	-1.499	1.491	0.955
22-Jul-94	**6.5**	4	0.0924	-1.326	1.876	0.951
26-Sep-94	**6.7**	5	0.1178	-1.186	1.899	0.955
12-Jul-95	**6.7**	6	0.1433	-1.066	1.900	0.956
27-Jun-95	**7.0**	7	0.1688	-0.959	1.944	0.955
18-Aug-94	**7.3**	8	0.1943	-0.862	1.992	0.954
18-Aug-94	**8.3**	9	0.2197	-0.773	2.114	0.951
5-Oct-94	**8.4**	10	0.2452	-0.690	2.133	0.950
17-Feb-94	**10.1**	11	0.2707	-0.611	2.313	0.948
29-Oct-93	**10.7**	12	0.2962	-0.535	2.373	0.949
21-Dec-93	**10.9**	13	0.3217	-0.463	2.386	0.951
24-May-95	**11.1**	14	0.3471	-0.393	2.407	0.951
1-Dec-93	**11.5**	15	0.3726	-0.325	2.440	0.951
21-Dec-93	**11.7**	16	0.3981	-0.258	2.456	0.950
17-Feb-94	**12.5**	17	0.4236	-0.193	2.529	0.948
16-Nov-94	**12.9**	18	0.4490	-0.128	2.556	0.946
12-Jun-95	**13.3**	19	0.4745	-0.064	2.589	0.943
21-Jan-94	**14.4**	20	0.5000	0.000	2.668	0.939
24-Jun-94	**15.2**	21	0.5255	0.064	2.722	0.935
21-Jan-94	**15.7**	22	0.5510	0.128	2.751	0.930
9-Jun-94	**19.5**	23	0.5764	0.193	2.972	0.924
25-Apr-95	**19.6**	24	0.6019	0.258	2.978	0.925
20-May-94	**22.0**	25	0.6274	0.325	3.091	0.923
8-Mar-94	**22.3**	26	0.6529	0.393	3.105	0.926
6-May-94	**22.3**	27	0.6783	0.463	3.106	0.926
8-Apr-94	**25.5**	28	0.7038	0.535	3.239	0.922
23-Mar-94	**25.8**	29	0.7293	0.611	3.252	0.925
7-Mar-95	**26.5**	30	0.7548	0.690	3.276	0.922
8-Apr-94	**27.6**	31	0.7803	0.773	3.317	0.914
13-Nov-97	**30.9**	32	0.8057	0.862	3.430	0.899
15-May-98	**31.3**	33	0.8312	0.959	3.444	0.878
14-Apr-95	**34.2**	34	0.8567	1.066	3.532	0.841
10-May-95	**40.0**	35	0.8822	1.186	3.688	0.790
18-Apr-94	**86.1**	36	0.9076	1.326	4.455	
9-Feb-95	**90.3**	37	0.9331	1.499	4.503	
10-Jan-95	**131.5**	38	0.9586	1.735	4.879	
23-Mar-95	**159.6**	39	0.9841	2.146	5.072	

		update for EV, CV:			
tZn		PC307		957	957
LN Analysis		tZn		0.22	0.216

Concentration

		Conc. Data, EV=957 ug/L CV=0.216		
Avg:	957	Data-based LN		
SD:	207	u	ln[tCd]	[tCd]
CV:	0.22	3	7.5	1776
Min:	582	0	6.84	936
Max:	1,460	-3	6.20	493
Median:	955			

					0.982	0.982
u=mLn(Conc.)+b:					960.0	960
update for r2, EV, CV:	r2=0.982, EV=960 ug/L CV=0.235; max r2=0.98				0.235	0.235
	r2 u,lnConc:	0.982	u	lnConc.	Conc.	
	slope, m:	4.319	3	7.53	1872	
	intercept, b:	-29.541	0	6.84	935	
	N:	39	-3	6.15	467	
	E[Conc]:	960.0	Parameter Estimates			
	SD[Conc]:	225	from LN regression			
	CV[Conc]:	0.23	update graph label			

	tZn	N: 39				max r2 0.982
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
10-May-95	582	1	0.0159	-2.146	6.366	0.982
18-Apr-94	593	2	0.0414	-1.735	6.385	0.979
24-May-95	647	3	0.0669	-1.499	6.472	0.979
27-Jun-95	680	4	0.0924	-1.326	6.522	0.977
12-Jun-95	682	5	0.1178	-1.186	6.525	0.975
15-May-98	696	6	0.1433	-1.066	6.545	0.976
6-May-94	773	7	0.1688	-0.959	6.650	0.978
22-Jul-94	773	8	0.1943	-0.862	6.650	0.976
23-Mar-95	778	9	0.2197	-0.773	6.657	0.975
20-May-94	813	10	0.2452	-0.690	6.701	0.973
25-Jul-95	817	11	0.2707	-0.611	6.706	0.971
25-Apr-95	828	12	0.2962	-0.535	6.719	0.969
12-Jul-95	840	13	0.3217	-0.463	6.733	0.967
9-Feb-95	876	14	0.3471	-0.393	6.775	0.966
13-Sep-95	888	15	0.3726	-0.325	6.789	0.963
8-Apr-94	893	16	0.3981	-0.258	6.795	0.959
8-Apr-94	893	17	0.4236	-0.193	6.795	0.956
14-Aug-95	930	18	0.4490	-0.128	6.835	0.953
8-Mar-94	940	19	0.4745	-0.064	6.846	0.949
23-Mar-94	955	20	0.5000	0.000	6.862	0.944
14-Apr-95	970	21	0.5255	0.064	6.877	0.938
7-Mar-95	978	22	0.5510	0.128	6.886	0.932
18-Aug-94	980	23	0.5764	0.193	6.888	0.924
18-Aug-94	980	24	0.6019	0.258	6.888	0.916
9-Jun-94	1000	25	0.6274	0.325	6.908	0.909
24-Jun-94	1010	26	0.6529	0.393	6.918	0.902
10-Jan-95	1040	27	0.6783	0.463	6.947	0.899
5-Oct-94	1060	28	0.7038	0.535	6.966	0.892
26-Sep-94	1080	29	0.7293	0.611	6.985	0.886
21-Jan-94	1160	30	0.7548	0.690	7.056	0.886
21-Jan-94	1160	31	0.7803	0.773	7.056	0.878
16-Nov-94	1180	32	0.8057	0.862	7.073	0.858
21-Dec-93	1210	33	0.8312	0.959	7.098	0.842
21-Dec-93	1210	34	0.8567	1.066	7.098	0.867
17-Feb-94	1220	35	0.8822	1.186	7.107	0.880
17-Feb-94	1220	36	0.9076	1.326	7.107	
1-Dec-93	1270	37	0.9331	1.499	7.147	
29-Oct-93	1270	38	0.9586	1.735	7.147	
13-Nov-97	1460	39	0.9841	2.146	7.286	

update for EV, CV:

tZn		**PC307**		*6*	*5.71*
LN Analysis		**tZn**		1.38	1.38
Discharge, Q		**Q Data, EV=5.71 cfs CV=1.38**			
Avg:	**6**	**Q Data-based LN**			
SD:	**8**	u	lnQ	Q	
CV:	**1.38**	3	4.3	74	
Min:	**1**	0	1.21	3	
Max:	**38**	-3	-1.89	0	
Median:	**3**				

				0.944	0.944
				5.6	5.58
u=mLn(Q)+b:				1.38	1.38
update for r2, EV, CV:	**r2=0.944, EV=5.58 cfs CV=1.38; max r2=0.97**				
r2 u,lnQ:	0.944	u	lnQ	Q	
slope, m:	0.967	3	4.29	73	
intercept, b:	-1.144	Q	1.18	3	
N:	39	-3	-1.92	0	
E[Q]:	5.6	Parameter Estimates			
SD[Q]:	8	from LN regression			
CV[Q]:	1.38	update graph label			

N: 39

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.968 r2 forward
update and rank for new data						
13-Sep-95	0.54	1	0.0159	-2.146	-0.616	0.944
14-Aug-95	0.74	2	0.0414	-1.735	-0.301	0.941
25-Jul-95	1.01	3	0.0669	-1.499	0.010	0.939
26-Sep-94	1.15	4	0.0924	-1.326	0.140	0.941
18-Aug-94	1.39	5	0.1178	-1.186	0.329	0.943
5-Oct-94	1.48	6	0.1433	-1.066	0.392	0.949
12-Jul-95	1.48	7	0.1688	-0.959	0.392	0.956
17-Feb-94	1.54	8	0.1943	-0.862	0.432	0.960
18-Aug-94	1.57	9	0.2197	-0.773	0.451	0.964
22-Jul-94	1.57	10	0.2452	-0.690	0.451	0.966
29-Oct-93	1.57	11	0.2707	-0.611	0.451	0.968
21-Dec-93	1.67	12	0.2962	-0.535	0.513	0.967
1-Dec-93	1.68	13	0.3217	-0.463	0.519	0.967
21-Dec-93	1.79	14	0.3471	-0.393	0.582	0.965
17-Feb-94	1.91	15	0.3726	-0.325	0.647	0.963
27-Jun-95	1.91	16	0.3981	-0.258	0.647	0.961
16-Nov-94	2.03	17	0.4236	-0.193	0.708	0.957
21-Jan-94	2.31	18	0.4490	-0.128	0.837	0.953
21-Jan-94	2.51	19	0.4745	-0.064	0.920	0.949
24-Jun-94	2.8	20	0.5000	0.000	1.030	0.945
24-May-95	3.19	21	0.5255	0.064	1.160	0.941
9-Jun-94	3.63	22	0.5510	0.128	1.289	0.938
12-Jun-95	3.63	23	0.5764	0.193	1.289	0.939
13-Nov-97	3.93	24	0.6019	0.258	1.369	0.936
8-Mar-94	4.41	25	0.6274	0.325	1.484	0.935
25-Apr-95	4.41	26	0.6529	0.393	1.484	0.937
7-Mar-95	5.03	27	0.6783	0.463	1.615	0.936
20-May-94	5.03	28	0.7038	0.535	1.615	0.940
23-Mar-94	5.03	29	0.7293	0.611	1.615	0.939
8-Apr-94	5.31	30	0.7548	0.690	1.670	0.933
6-May-94	5.37	31	0.7803	0.773	1.681	0.922
8-Apr-94	5.74	32	0.8057	0.862	1.747	0.905
14-Apr-95	6.55	33	0.8312	0.959	1.879	0.884
15-May-98	8.36	34	0.8567	1.066	2.123	0.874
10-May-95	12.76	35	0.8822	1.186	2.546	0.916
9-Feb-95	19.16	36	0.9076	1.326	2.953	
10-Jan-95	23.51	37	0.9331	1.499	3.157	
18-Apr-94	26.98	38	0.9586	1.735	3.295	
23-Mar-95	38.12	39	0.9841	2.146	3.641	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	PC308	**Date:**	20-Jun-00
Chemical:	dCd	**Analyst:**	J.MacLachlan
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,671	1	12	0.05		0.00	0.00	0.00
SD:	368	1	3	0.03		1.00	1.00	1.00
CV:	0.01	0.63	0.25	0.62				
Min:	34,271	0.2	7	0.01		-1.23	-1.47	-1.27
Max:	35,930	2	18	0.15		2.39	2.22	3.51
Median:	34,537	1	11	0.04		-0.30	-0.23	-0.20

dCd	PC308		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.0671)		update r2	0.07	0.0671	r2:	0.193	0.367
r2 Q,[COC]:	0.07	[tCd]	Q		m:	-0.0006	-0.00103
slope, m:	-1.6	13	0.2		b:	21	35.18
intercept, b:	12.9	12	0.8				
N: 33		10	2				
LnConc. = mLn(Q)+b (r2=0.0646)		update r2	0.06	0.0646			
r2 lnQ,ln[COC]:	0.06	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.10	2.55	-1.69	13	0.2		
intercept, b:	2.38	2.40	-0.22	11	1		
N: 33		2.31	0.69	10	2		

N= 33

	Sampling Date	Q Discharge	dCd Concentration	dCd Load	Ln Q	Ln dCd Conc.	Ln dCd Load	dCd PC308 Standardized Values = (x - Avg)/SD	for graph 0	
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
IDEQ	29-Oct-93	0.64	15.2	0.1	-0.45	2.72	-2.95	-0.32	1.18	0.15
IDEQ	1-Dec-93	0.52	14.5	0.0	-0.65	2.67	-3.20	-0.56	0.95	-0.25
IDEQ	21-Dec-93	0.72	14.2	0.1	-0.33	2.65	-2.90	-0.16	0.85	0.24
IDEQ	21-Dec-93	2	14.2	0.2	0.69	2.65	-1.88	2.39	0.85	3.51
IDEQ	21-Jan-94	0.88	11	0.1	-0.13	2.40	-2.96	0.16	-0.23	0.14
IDEQ	21-Jan-94	0.41	11	0.0	-0.89	2.40	-3.72	-0.78	-0.23	-0.79
IDEQ	17-Feb-94		9.9			2.29			-0.60	
IDEQ	8-Mar-94	1.26	10	0.1	0.23	2.30	-2.69	0.92	-0.57	0.66
IDEQ	8-Mar-94	1.36	10	0.1	0.31	2.30	-2.61	1.12	-0.57	0.84
IDEQ	23-Mar-94	1.34	8.4	0.1	0.29	2.13	-2.80	1.08	-1.10	0.42
IDEQ	8-Apr-94	1.08	7.3	0.0	0.08	1.99	-3.16	0.56	-1.47	-0.19
IDEQ	18-Apr-94	1.02	9.5	0.1	0.02	2.25	-2.95	0.44	-0.73	0.14
IDEQ	3-May-94	0.86	10.5	0.0	-0.15	2.35	-3.02	0.12	-0.40	0.02
IDEQ	19-May-94	0.88	11	0.1	-0.13	2.40	-2.96	0.16	-0.23	0.14
IDEQ	9-Jun-94		12			2.48			0.11	
IDEQ	24-Jun-94	0.25	14	0.0	-1.39	2.64	-3.97	-1.10	0.78	-0.97
IDEQ	22-Jul-94		15			2.71			1.11	
IDEQ	16-Nov-94	0.88	18	0.1	-0.13	2.89	-2.46	0.16	2.12	1.25
IDEQ	10-Jan-95	1.97	10	0.1	0.68	2.30	-2.24	2.33	-0.57	1.94
IDEQ	9-Feb-95	1.91	8	0.1	0.65	2.08	-2.50	2.21	-1.24	1.15
IDEQ	22-Mar-95	0.91	7.3	0.0	-0.09	1.99	-3.33	0.22	-1.47	-0.41
IDEQ	14-Apr-95	0.45	8	0.0	-0.80	2.08	-3.94	-0.70	-1.24	-0.96
IDEQ	25-Apr-95	0.39	7.7	0.0	-0.94	2.04	-4.13	-0.82	-1.34	-1.06
IDEQ	10-May-95	0.29	9.6	0.0	-1.24	2.26	-4.20	-1.02	-0.70	-1.10
IDEQ	24-May-95	0.27	10	0.0	-1.31	2.30	-4.23	-1.06	-0.57	-1.12
IDEQ	12-Jun-95	0.59	11	0.0	-0.53	2.40	-3.35	-0.42	-0.23	-0.44
IDEQ	27-Jun-95	0.56	13	0.0	-0.58	2.56	-3.24	-0.48	0.44	-0.29
IDEQ	12-Jul-95	0.55	12	0.0	-0.60	2.48	-3.34	-0.50	0.11	-0.42
IDEQ	25-Jul-95	0.52	14	0.0	-0.65	2.64	-3.24	-0.56	0.78	-0.29
IDEQ	14-Aug-95	0.66	15	0.1	-0.42	2.71	-2.93	-0.28	1.11	0.18
IDEQ	13-Sep-95	0.48	16	0.0	-0.73	2.77	-3.19	-0.64	1.45	-0.22
URS	13-Nov-97	0.186	18.3	0.0	-1.68	2.91	-4.00	-1.23	2.22	-0.99
URS	15-May-98	0.185	10	0.0	-1.69	2.30	-4.61	-1.23	-0.57	-1.27

dCd

Concentration over time analysis

	dCd	PC308		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.010**	**0.00007**
	Time	**Ln[COC]**	**[COC]**		
first:	29-Oct-93	2.40	11		
mid:	22-Jul-94	2.42	11		
last:	15-May-98	2.51	12		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

Load over time analysis

	dCd	PC308			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.331**	**-0.00095**
	Time	**LnLoad**	**Load**		
first:	29-Oct-93	-2.82	0		
mid:	22-Jul-94	-3.08	0		
last:	15-May-98	-4.41	0		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

	max r2:	0.155		max r2:	0.935	
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.010	0.00007	0.09	0.331	-0.00095	29.85
	0.021	0.00010	-0.99	0.328	-0.00097	30.31
	0.034	0.00013	-1.96	0.340	-0.00100	31.62
	0.050	0.00015	-2.93	0.334	-0.00101	31.86
	0.073	0.00019	-4.05	0.302	-0.00090	27.95
	0.076	0.00019	-4.32	0.293	-0.00090	28.00
	0.080	0.00020	-4.62	0.350	-0.00100	31.52
	•0.075	0.00020	-4.53	0.350	-0.00100	31.52
	0.071	0.00020	-4.44	0.329	-0.00097	30.53
	0.066	0.00019	-4.35	0.301	-0.00093	28.96
	0.049	0.00017	-3.42	0.278	-0.00090	28.03
	0.026	0.00012	-1.66	0.277	-0.00092	28.84
	0.017	0.00010	-0.94	0.259	-0.00092	28.51
	0.013	0.00009	-0.64	0.243	-0.00091	28.47
	0.012	0.00009	-0.55	0.220	-0.00089	27.79
	0.015	0.00010	-0.99	0.220	-0.00089	27.79
	0.030	0.00015	-2.64	0.315	-0.00110	35.06
	0.066	0.00022	-5.18	0.315	-0.00110	35.06
	0.155	0.00031	-8.54	0.279	-0.00099	31.04
	0.150	0.00031	-8.52	0.254	-0.00082	25.27
	0.121	0.00027	-7.13	0.229	-0.00068	20.12
	0.091	0.00021	-5.08	0.211	-0.00065	19.10
	0.061	0.00016	-3.19	0.250	-0.00071	21.36
	0.027	0.00009	-0.61	0.342	-0.00082	25.26
	0.007	0.00004	1.13	0.520	-0.00097	30.62
	0.001	-0.00001	3.10	0.886	-0.00118	37.80
	0.023	-0.00007	4.92	0.906	-0.00122	39.51
	0.040	-0.00009	5.80	0.908	-0.00125	40.58
	0.129	-0.00016	8.36	0.935	-0.00133	43.48

update for EV, CV:

dCd **PC308**

LN Analysis **dCd**

Load **Load Data, EV=0.0479 lbs/day CV=0.623**

Avg:	**0.05**	**Load Data-based LN**		
SD:	**0.03**	u	ln tCd Load	tCd Load
CV:	**0.62**	3	-1.5	0.2
Min:	**0.01**	0	-3.20	0.04
Max:	**0.15**	-3	-4.92	0.01
Median:	**0.04**			
		0	0.0479	
		0.62	0.623	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.944, EV=0.0473lbs/day CV=0.923; max r2=0.99**

r2 u,lnLoad:	0.944	u	lnLoad	Load	
slope, m:	1.274	3	-1.00	0.37	
intercept, b:	4.278	0	-3.36	0.03	
N:	30	-3	-5.71	0.00	
E[Load]:	0.05	Parameter Estimates			0.944
SD[Load]:	0.0	from LN regression			0.0
CV[Load]:	0.92	update graph label			0.9
					max r2
	dCd	N: 33			0.990

Date	dCd Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
9-Jun-94		1	0.0188	-2.079		
17-Feb-94		2	0.0489	-1.656		
22-Jul-94		3	0.0789	-1.412		
15-May-98	**0.01**	4	0.1090	-1.232	-4.610	0.944
24-May-95	**0.01**	5	0.1391	-1.084	-4.232	0.947
10-May-95	**0.01**	6	0.1692	-0.957	-4.201	0.942
25-Apr-95	**0.02**	7	0.1992	-0.844	-4.125	0.939
13-Nov-97	**0.02**	8	0.2293	-0.741	-4.000	0.938
24-Jun-94	**0.02**	9	0.2594	-0.645	-3.972	0.937
14-Apr-95	**0.02**	10	0.2895	-0.555	-3.944	0.942
21-Jan-94	**0.02**	11	0.3195	-0.469	-3.719	0.964
12-Jun-95	**0.03**	12	0.3496	-0.386	-3.355	0.974
12-Jul-95	**0.04**	13	0.3797	-0.306	-3.338	0.974
22-Mar-95	**0.04**	14	0.4098	-0.228	-3.332	0.973
25-Jul-95	**0.04**	15	0.4398	-0.151	-3.240	0.970
27-Jun-95	**0.04**	16	0.4699	-0.075	-3.240	0.970
1-Dec-93	**0.04**	17	0.5000	0.000	-3.205	0.968
13-Sep-95	**0.04**	18	0.5301	0.075	-3.186	0.966
8-Apr-94	**0.04**	19	0.5602	0.151	-3.160	0.962
3-May-94	**0.05**	20	0.5902	0.228	-3.025	0.957
19-May-94	**0.05**	21	0.6203	0.306	-2.955	0.960
21-Jan-94	**0.05**	22	0.6504	0.386	-2.955	0.973
18-Apr-94	**0.05**	23	0.6805	0.469	-2.954	0.983
29-Oct-93	**0.05**	24	0.7105	0.555	-2.950	0.989
14-Aug-95	**0.05**	25	0.7406	0.645	-2.933	0.990
21-Dec-93	**0.06**	26	0.7707	0.741	-2.900	0.988
23-Mar-94	**0.06**	27	0.8008	0.844	-2.804	0.986
8-Mar-94	**0.07**	28	0.8308	0.957	-2.691	0.981
8-Mar-94	**0.07**	29	0.8609	1.084	-2.615	0.979
9-Feb-95	**0.08**	30	0.8910	1.232	-2.499	
16-Nov-94	**0.09**	31	0.9211	1.412	-2.463	
10-Jan-95	**0.11**	32	0.9511	1.656	-2.244	
21-Dec-93	**0.15**	33	0.9812	2.079	-1.879	

update for EV, CV:

dCd		PC308	12	11.7
LN Analysis		dCd	0.25	0.255

Concentration

Avg:	12
SD:	3
CV:	0.25
Min:	7
Max:	18
Median:	11

Conc. Data, EV=11.7 ug/L CV=0.255

Data-based LN

u	ln[tCd]	[tCd]
3	3.2	24
0	2.43	11
-3	1.68	5

					0.969	0.969
	u=mLn(Conc.)+b:				11.7	11.7
update for r2, EV, CV:	r2=0.969, EV=11.7 ug/L CV=0.273; max r2=0.97				0.273	0.273
	r2 u,lnConc:	0.969	u	lnConc.	Conc.	
	slope, m:	3.731	3	3.23	25	
	intercept, b:	-9.052	0	2.43	11	
	N:	33	-3	1.62	5	
0.944	E[Conc]:	11.7	Parameter Estimates			
0.0473	SD[Conc]:	3	from LN regression			
0.923	CV[Conc]:	0.27	update graph label			

Date	dCd Concentration ug/L Ranked	N: 33 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.972 r2 forward
update and rank for new data						
8-Apr-94	7.3	1	0.0188	-2.079	1.988	0.969
########	7.3	2	0.0489	-1.656	1.988	0.972
########	7.7	3	0.0789	-1.412	2.041	0.969
9-Feb-95	8	4	0.1090	-1.232	2.079	0.966
########	8	5	0.1391	-1.084	2.079	0.962
########	8.4	6	0.1692	-0.957	2.128	0.959
########	9.5	7	0.1992	-0.844	2.251	0.956
########	9.6	8	0.2293	-0.741	2.262	0.955
########	9.9	9	0.2594	-0.645	2.293	0.953
########	10	10	0.2895	-0.555	2.303	0.952
8-Mar-94	10	11	0.3195	-0.469	2.303	0.950
8-Mar-94	10	12	0.3496	-0.386	2.303	0.946
10-Jan-95	10	13	0.3797	-0.306	2.303	0.940
########	10	14	0.4098	-0.228	2.303	0.934
3-May-94	10.5	15	0.4398	-0.151	2.351	0.930
12-Jun-95	11	16	0.4699	-0.075	2.398	0.923
########	11	17	0.5000	0.000	2.398	0.914
21-Jan-94	11	18	0.5301	0.075	2.398	0.905
21-Jan-94	11	19	0.5602	0.151	2.398	0.901
9-Jun-94	12	20	0.5902	0.228	2.485	0.919
12-Jul-95	12	21	0.6203	0.306	2.485	0.915
27-Jun-95	13	22	0.6504	0.386	2.565	0.939
24-Jun-94	14	23	0.6805	0.469	2.639	0.934
25-Jul-95	14	24	0.7105	0.555	2.639	0.937
########	14.2	25	0.7406	0.645	2.653	0.933
########	14.2	26	0.7707	0.741	2.653	0.929
1-Dec-93	14.5	27	0.8008	0.844	2.674	0.914
########	15	28	0.8308	0.957	2.708	0.893
22-Jul-94	15	29	0.8609	1.084	2.708	0.886
########	15.2	30	0.8910	1.232	2.721	
########	16	31	0.9211	1.412	2.773	
########	18	32	0.9511	1.656	2.890	
########	18.3	33	0.9812	2.079	2.907	

update for EV, CV:

dCd		PC308			1	0.801
LN Analysis		dCd			0.63	0.626
Discharge, Q		**Q Data, EV=0.801 cfs CV=0.626**				
Avg:	1	Q Data-based LN				
SD:	1	u	lnQ	Q		
CV:	0.63	3	1.3	4		
Min:	0.2	0	-0.39	1		
Max:	2	-3	-2.11	0.1		
Median:	1					

					0.965	0.965
					0.8	0.787
u=mLn(Q)+b:					0.94	0.937
pdate for r2, EV, CV:	r2=0.965, EV=0.787 cfs CV=0.937; max r2=0.98					
r2 u,lnQ:	0.965	u	lnQ	Q		
slope, m:	1.260	3	1.83	6		
intercept, b:	0.699	0	-0.55	1		
N:	30	-3	-2.94	0.1		
E[Q]:	0.8	Parameter Estimates				
SD[Q]:	1	from LN regression				
CV[Q]:	0.94	update graph label				

	Q	N: 33				max r2 0.977
	Discharge	i	i-3/8 / N+1/4	u	Ln	r2
Date	cfs	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
##		1	0.0188	-2.079		
##		2	0.0489	-1.656		
##		3	0.0789	-1.412		
##	0.185	4	0.1090	-1.232	-1.687	0.965
##	0.186	5	0.1391	-1.084	-1.682	0.963
##	0.25	6	0.1692	-0.957	-1.386	0.970
##	0.27	7	0.1992	-0.844	-1.309	0.970
##	0.29	8	0.2293	-0.741	-1.238	0.972
##	0.39	9	0.2594	-0.645	-0.942	0.977
##	0.41	10	0.2895	-0.555	-0.892	0.975
##	0.45	11	0.3195	-0.469	-0.799	0.973
##	0.48	12	0.3496	-0.386	-0.734	0.970
##	0.52	13	0.3797	-0.306	-0.654	0.967
##	0.52	14	0.4098	-0.228	-0.654	0.964
##	0.55	15	0.4398	-0.151	-0.598	0.960
##	0.56	16	0.4699	-0.075	-0.580	0.955
##	0.59	17	0.5000	0.000	-0.528	0.951
##	0.64	18	0.5301	0.075	-0.446	0.946
##	0.66	19	0.5602	0.151	-0.416	0.940
##	0.72	20	0.5902	0.228	-0.329	0.934
##	0.86	21	0.6203	0.306	-0.151	0.926
##	0.88	22	0.6504	0.386	-0.128	0.921
##	0.88	23	0.6805	0.469	-0.128	0.914
##	0.88	24	0.7105	0.555	-0.128	0.900
##	0.91	25	0.7406	0.645	-0.094	0.880
##	1.02	26	0.7707	0.741	0.020	0.857
##	1.08	27	0.8008	0.844	0.077	0.820
##	1.26	28	0.8308	0.957	0.231	0.770
##	1.34	29	0.8609	1.084	0.293	0.686
##	1.36	30	0.8910	1.232	0.307	
##	1.91	31	0.9211	1.412	0.647	
##	1.97	32	0.9511	1.656	0.678	
##	2	33	0.9812	2.079	0.693	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.		see comment
Station:	PC308	**Date:** 20-Jun-00
Chemical:	dPb	**Analyst:** J.MacLachlan
Notes:		
Input Discharge and Concentration Data below (in red)		

	Date	Discharge	Concentration	Load			
Avg:	34,671	1	6	0.02	0.00	0.00	0.00
SD:	368	1	2	0.02	1.00	1.00	1.00
CV:	0.01	0.63	0.41	0.90			
Min:	34,271	0.2	3	0.004	-1.23	-1.20	-0.91
Max:	35,930	2	14	0.13	2.39	3.61	4.71
Median:	34,537	1	5	0.02	-0.30	-0.35	-0.16

dPb PC308			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.00407)	update r2		**0.00**	0.00407	r2:	0.193	0.367
r2 Q,[COC]:	0.004	[tCd]	Q		m:	-0.0006	-0.00103
slope, m:	-0.3	6	0.2		b:	21	35.18
intercept, b:	6.2	6	0.8				
N: 32		6	2				
LnConc. = mLn{Q}+b (r2=0.0464)		update r2		0.05	0.0464		
r2 lnQ,ln[COC]:	0.05	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.11	1.87	-1.69	6	0.2		
intercept, b:	1.68	1.70	-0.22	5	1		
N: 32		1.60	0.69	5	2		

N= 33

	Sampling Date	Q Discharge	dPb Concentration	dPb Load	Ln Q	Ln dPb Conc.	Ln dPb Load	dPb PC308 Standardized Values = (x - Avg)/SD	for graph 0	
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
IDEQ	29-Oct-93	0.64	5	0.017	-0.45	1.61	-4.06	-0.32	-0.35	-0.32
IDEQ	1-Dec-93	0.52	4	0.011	-0.65	1.39	-4.49	-0.56	-0.77	-0.59
IDEQ	21-Dec-93	0.72	4	0.015	-0.33	1.39	-4.17	-0.16	-0.77	-0.40
IDEQ	21-Dec-93	2	4	0.043	0.69	1.39	-3.15	2.39	-0.77	0.86
IDEQ	21-Jan-94	0.88	4	0.019	-0.13	1.39	-3.97	0.16	-0.77	-0.24
IDEQ	21-Jan-94	0.41	4	0.009	-0.89	1.39	-4.73	-0.78	-0.77	-0.70
IDEQ	17-Feb-94		3			1.10			-1.20	
IDEQ	8-Mar-94	1.26	6	0.041	0.23	1.79	-3.20	0.92	0.07	0.75
IDEQ	8-Mar-94	1.36	6	0.044	0.31	1.79	-3.13	1.12	0.07	0.90
IDEQ	23-Mar-94	1.34	5	0.036	0.29	1.61	-3.32	1.08	-0.35	0.54
IDEQ	8-Apr-94	1.08	4	0.023	0.08	1.39	-3.76	0.56	-0.77	-0.04
IDEQ	18-Apr-94	1.02	4	0.022	0.02	1.39	-3.82	0.44	-0.77	-0.10
IDEQ	3-May-94	0.86	5	0.023	-0.15	1.61	-3.77	0.12	-0.35	-0.05
IDEQ	19-May-94	0.88	4	0.019	-0.13	1.39	-3.97	0.16	-0.77	-0.24
IDEQ	9-Jun-94		4			1.39			-0.77	
IDEQ	24-Jun-94	0.25	6	0.008	-1.39	1.79	-4.82	-1.10	0.07	-0.74
IDEQ	22-Jul-94		6			1.79			0.07	
IDEQ	16-Nov-94	0.88	5	0.024	-0.13	1.61	-3.74	0.16	-0.35	-0.02
IDEQ	10-Jan-95	1.97	12	0.127	0.68	2.48	-2.06	2.33	2.60	4.71
IDEQ	*9-Feb-95*	*1.91*			0.65			2.21		
IDEQ	22-Mar-95	0.91	5	0.024	-0.09	1.61	-3.71	0.22	-0.35	0.01
IDEQ	14-Apr-95	0.45	7	0.017	-0.80	1.95	-4.08	-0.70	0.49	-0.33
IDEQ	25-Apr-95	0.39	5	0.010	-0.94	1.61	-4.56	-0.82	-0.35	-0.63
IDEQ	10-May-95	0.29	7	0.011	-1.24	1.95	-4.52	-1.02	0.49	-0.61
IDEQ	24-May-95	0.27	5	0.007	-1.31	1.61	-4.92	-1.06	-0.35	-0.77
IDEQ	12-Jun-95	0.59	8	0.025	-0.53	2.08	-3.67	-0.42	0.91	0.05
IDEQ	27-Jun-95	0.56	7	0.021	-0.58	1.95	-3.86	-0.48	0.49	-0.14
IDEQ	12-Jul-95	0.55	6	0.018	-0.60	1.79	-4.03	-0.50	0.07	-0.29
IDEQ	25-Jul-95	0.52	9	0.025	-0.65	2.20	-3.68	-0.56	1.33	0.04
IDEQ	14-Aug-95	0.66	6	0.021	-0.42	1.79	-3.85	-0.28	0.07	-0.13
IDEQ	13-Sep-95	0.48	8	0.021	-0.73	2.08	-3.88	-0.64	0.91	-0.16
URS	13-Nov-97	0.186	14.4	0.014	-1.68	2.67	-4.24	-1.23	3.61	-0.45
URS	15-May-98	0.185	4.4	0.004	-1.69	1.48	-5.43	-1.23	-0.61	-0.91

dPb

Concentration over time analysis

	dPb	PC308		r2	Slope, m
	LnConc.=mTime+b All data r2, m:			**0.292**	**0.00049**
	Time	**Ln[COC]**	**[COC]**		
first:	29-Oct-93	1.51	5		
mid:	22-Jul-94	1.64	5		
last:	15-May-98	2.32	10		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

Load over time analysis

	dPb	PC308				
	LnLoad=mTime+b All data r2, m:			**0.126**	**-0.00059**	update
	Time	**LnLoad**	**Load**			
first:	29-Oct-93	-3.71	0.02			
mid:	22-Jul-94	-3.86	0.02			
last:	15-May-98	-4.68	0.01			
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**	
	0-Jan-00	0.00	1			
	15-May-98	0.00	1			

	max r2: 0.294			max r2: 0.757		
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.292	0.00049	-15.28	0.126	-0.00059	16.40
	0.294	0.00050	-15.63	0.136	-0.00062	17.70
	0.278	0.00049	-15.20	0.172	-0.00071	20.60
	0.262	0.00047	-14.71	0.194	-0.00076	22.56
	0.243	0.00046	-14.14	0.169	-0.00071	20.67
	0.225	0.00044	-13.49	0.178	-0.00074	21.91
	0.203	0.00042	-12.73	0.254	-0.00089	26.88
	0.172	0.00036	-10.73	0.254	-0.00089	26.88
	0.179	0.00038	-11.26	0.229	-0.00084	25.22
	0.187	0.00039	-11.88	0.197	-0.00077	22.82
	0.177	0.00039	-11.73	0.170	-0.00072	20.96
	0.148	0.00035	-10.43	0.163	-0.00072	21.17
	0.116	0.00031	-8.85	0.159	-0.00074	21.76
	0.099	0.00029	-8.21	0.151	-0.00075	22.05
	0.064	0.00023	-6.02	0.158	-0.00080	23.93
	0.030	0.00015	-3.30	0.158	-0.00080	23.93
	0.023	0.00014	-2.89	0.277	-0.00107	33.54
	0.017	0.00012	-2.33	0.277	-0.00107	33.54
	0.005	0.00007	-0.45	0.270	-0.00109	33.98
	0.040	0.00017	-4.07	0.295	-0.00078	23.18
	0.040	0.00017	-4.07	0.295	-0.00078	23.18
	0.025	0.00013	-2.64	0.271	-0.00074	21.53
	0.027	0.00014	-2.91	0.265	-0.00074	21.64
	0.011	0.00009	-1.11	0.330	-0.00083	24.75
	0.011	0.00009	-1.17	0.410	-0.00093	28.32
	0.000	0.00002	1.40	0.753	-0.00114	36.10
	0.002	0.00004	0.68	0.736	-0.00112	35.26
	0.001	0.00003	1.08	0.726	-0.00114	35.86
	0.004	-0.00005	3.92	0.757	-0.00123	39.05

update for EV, CV:

dPb		**PC308**		
LN Analysis		**dPb**		
Load		**Load Data, EV=0.0242 lbs/day CV=0.904**		
Avg:	**0.02**	**Load Data-based LN**		
SD:	**0.02**	u	ln tCd Load	tCd Load
CV:	**0.90**	3	-1.7	0.18
Min:	**0.004**	0	-4.02	0.02
Max:	**0.13**	-3	-6.34	0.002
Median:	**0.02**			
		0	0.0242	
		0.90	0.904	

u=mLn{Load}+ b:

e for r2, EV, CV: r2=0.929, EV=0.0226lbs/day CV=0.974; max r2=0.93

r2 u,lnLoad:	0.929	u	lnLoad	Load		
slope, m:	1.224	3	-1.67	0.19		
intercept, b:	5.049	0	-4.12	0.02		
N:	29	-3	-6.57	0.001		
E[Load]:	0.02	Parameter Estimates			0.929	0.929
SD[Load]:	0.02	from LN regression			0.0	0.0226
CV[Load]:	0.97	update graph label			1.0	0.974
					max r2	
	dPb	**N: 33**			0.931	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
17-Feb-94		1	0.0188	-2.079		
9-Jun-94		2	0.0489	-1.656		
22-Jul-94		3	0.0789	-1.412		
15-May-98	**0.004**	4	0.1090	-1.232	-5.431	0.929
24-May-95	**0.007**	5	0.1391	-1.084	-4.925	0.931
9-Feb-95		6	0.1692	-0.957		
24-Jun-94	**0.008**	7	0.1992	-0.844	-4.820	0.922
21-Jan-94	**0.009**	8	0.2293	-0.741	-4.730	0.915
25-Apr-95	**0.010**	9	0.2594	-0.645	-4.557	0.907
10-May-95	**0.011**	10	0.2895	-0.555	-4.517	0.897
1-Dec-93	**0.011**	11	0.3195	-0.469	-4.493	0.887
13-Nov-97	**0.014**	12	0.3496	-0.386	-4.240	0.876
21-Dec-93	**0.015**	13	0.3797	-0.306	-4.167	0.868
14-Apr-95	**0.017**	14	0.4098	-0.228	-4.078	0.862
29-Oct-93	**0.017**	15	0.4398	-0.151	-4.062	0.861
12-Jul-95	**0.018**	16	0.4699	-0.075	-4.031	0.859
21-Jan-94	**0.019**	17	0.5000	0.000	-3.967	0.856
19-May-94	**0.019**	18	0.5301	0.075	-3.967	0.857
13-Sep-95	**0.021**	19	0.5602	0.151	-3.880	0.855
27-Jun-95	**0.021**	20	0.5902	0.228	-3.859	0.861
14-Aug-95	**0.021**	21	0.6203	0.306	-3.849	0.868
18-Apr-94	**0.022**	22	0.6504	0.386	-3.819	0.872
3-May-94	**0.023**	23	0.6805	0.469	-3.766	0.877
8-Apr-94	**0.023**	24	0.7105	0.555	-3.762	0.887
16-Nov-94	**0.024**	25	0.7406	0.645	-3.743	0.891
22-Mar-95	**0.024**	26	0.7707	0.741	-3.710	0.891
25-Jul-95	**0.025**	27	0.8008	0.844	-3.682	0.884
12-Jun-95	**0.025**	28	0.8308	0.957	-3.673	0.864
23-Mar-94	**0.036**	29	0.8609	1.084	-3.323	0.814
8-Mar-94	**0.041**	30	0.8910	1.232	-3.202	
21-Dec-93	**0.043**	31	0.9211	1.412	-3.146	
8-Mar-94	**0.044**	32	0.9511	1.656	-3.126	
10-Jan-95	**0.127**	33	0.9812	2.079	-2.062	

update for EV, CV:

dPb		PC308		6	5.84
LN Analysis		dPb		0.41	0.407

Concentration — **Conc. Data, EV=5.84 ug/L CV=0.407**

		Data-based LN		
Avg:	6	u	ln[tCd]	[tCd]
SD:	2	3	2.9	17
CV:	0.41	2	1.69	5
Min:	3	0	0.51	2
Max:	14	-3		
Median:	5			

				0.923	0.923
u=mLn(Conc.)+b:				5.8	5.77
update for r2, EV, CV:	r2=0.923, EV=5.77 ug/L CV=0.407; max r2=0.965			0.407	0.407
r2 u,lnConc:	0.923	u	lnConc.	Conc.	
slope, m:	2.553	3	2.85	17	
intercept, b:	-4.277	0	1.68	5	
N:	32	-3	0.50	2	
E[Conc]:	5.8	Parameter Estimates			
SD[Conc]:	2	from LN regression			
CV[Conc]:	0.41	update graph label			

	dPb	N: 33				max r2 0.965
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
9-Feb-95		1	0.0188	-2.079		
17-Feb-94	3	2	0.0489	-1.656	1.099	0.923
1-Dec-93	4	3	0.0789	-1.412	1.386	0.914
21-Dec-93	4	4	0.1090	-1.232	1.386	0.929
21-Dec-93	4	5	0.1391	-1.084	1.386	0.939
21-Jan-94	4	6	0.1692	-0.957	1.386	0.946
21-Jan-94	4	7	0.1992	-0.844	1.386	0.950
8-Apr-94	4	8	0.2293	-0.741	1.386	0.952
18-Apr-94	4	9	0.2594	-0.645	1.386	0.951
19-May-94	4	10	0.2895	-0.555	1.386	0.948
9-Jun-94	4	11	0.3195	-0.469	1.386	0.943
15-May-98	4.4	12	0.3496	-0.386	1.482	0.938
29-Oct-93	5	13	0.3797	-0.306	1.609	0.933
23-Mar-94	5	14	0.4098	-0.228	1.609	0.940
3-May-94	5	15	0.4398	-0.151	1.609	0.945
16-Nov-94	5	16	0.4699	-0.075	1.609	0.948
22-Mar-95	5	17	0.5000	0.000	1.609	0.947
25-Apr-95	5	18	0.5301	0.075	1.609	0.944
24-May-95	5	19	0.5602	0.151	1.609	0.938
8-Mar-94	6	20	0.5902	0.228	1.792	0.930
8-Mar-94	6	21	0.6203	0.306	1.792	0.943
24-Jun-94	6	22	0.6504	0.386	1.792	0.954
22-Jul-94	6	23	0.6805	0.469	1.792	0.961
12-Jul-95	6	24	0.7105	0.555	1.792	0.964
14-Aug-95	6	25	0.7406	0.645	1.792	0.960
14-Apr-95	7	26	0.7707	0.741	1.946	0.950
10-May-95	7	27	0.8008	0.844	1.946	0.963
27-Jun-95	7	28	0.8308	0.957	1.946	0.965
12-Jun-95	8	29	0.8609	1.084	2.079	0.951
13-Sep-95	8	30	0.8910	1.232	2.079	
25-Jul-95	9	31	0.9211	1.412	2.197	
10-Jan-95	12	32	0.9511	1.656	2.485	
13-Nov-97	14.4	33	0.9812	2.079	2.667	

update for EV, CV:

dPb		**PC308**			1	0.801
LN Analysis		**dPb**			0.63	0.626
Discharge, Q		**Q Data, EV=0.801 cfs CV=0.626**				
Avg:	1	**Q Data-based LN**				
SD:	1	u	lnQ	Q		
CV:	0.63	3	1.3	4		
Min:	0.2	0	-0.39	1		
Max:	2	-3	-2.11	0.1		
Median:	1					

	0.965	0.965
	0.8	0.787
u=mLn{Q}+b:	0.94	0.937

update for r2, EV, CV: **r2=0.965, EV=0.787 cfs CV=0.937; max r2=0.977**

r2 u,lnQ:	0.965	u	lnQ	Q
slope, m:	1.260	3	1.83	6
intercept, b:	0.699	0	-0.55	1
N:	30	-3	-2.94	0.1
E[Q]:	0.8	Parameter Estimates		
SD[Q]:	1	from LN regression		
CV[Q]:	0.94	update graph label		

	Q	N: 33				max r2 0.977
	Discharge	i	i-3/8 / N+1/4	u	Ln	r2
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
17-Feb-94		1	0.0188	-2.079		
9-Jun-94		2	0.0489	-1.656		
22-Jul-94		3	0.0789	-1.412		
15-May-98	0.185	4	0.1090	-1.232	-1.687	0.965
13-Nov-97	0.186	5	0.1391	-1.084	-1.682	0.963
24-Jun-94	0.25	6	0.1692	-0.957	-1.386	0.970
24-May-95	0.27	7	0.1992	-0.844	-1.309	0.970
10-May-95	0.29	8	0.2293	-0.741	-1.238	0.972
25-Apr-95	0.39	9	0.2594	-0.645	-0.942	0.977
21-Jan-94	0.41	10	0.2895	-0.555	-0.892	0.975
14-Apr-95	0.45	11	0.3195	-0.469	-0.799	0.973
13-Sep-95	0.48	12	0.3496	-0.386	-0.734	0.970
1-Dec-93	0.52	13	0.3797	-0.306	-0.654	0.967
25-Jul-95	0.52	14	0.4098	-0.228	-0.654	0.964
12-Jul-95	0.55	15	0.4398	-0.151	-0.598	0.960
27-Jun-95	0.56	16	0.4699	-0.075	-0.580	0.955
12-Jun-95	0.59	17	0.5000	0.000	-0.528	0.951
29-Oct-93	0.64	18	0.5301	0.075	-0.446	0.946
14-Aug-95	0.66	19	0.5602	0.151	-0.416	0.940
21-Dec-93	0.72	20	0.5902	0.228	-0.329	0.934
3-May-94	0.86	21	0.6203	0.306	-0.151	0.926
21-Jan-94	0.88	22	0.6504	0.386	-0.128	0.921
19-May-94	0.88	23	0.6805	0.469	-0.128	0.914
16-Nov-94	0.88	24	0.7105	0.555	-0.128	0.900
22-Mar-95	0.91	25	0.7406	0.645	-0.094	0.880
18-Apr-94	1.02	26	0.7707	0.741	0.020	0.857
8-Apr-94	1.08	27	0.8008	0.844	0.077	0.820
8-Mar-94	1.26	28	0.8308	0.957	0.231	0.770
23-Mar-94	1.34	29	0.8609	1.084	0.293	0.686
8-Mar-94	1.36	30	0.8910	1.232	0.307	
9-Feb-95	*1.91*	31	0.9211	1.412	0.647	
10-Jan-95	1.97	32	0.9511	1.656	0.678	
21-Dec-93	2	33	0.9812	2.079	0.693	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	**PC308**	**Date:**	20-Jun-00
Chemical:	**dZn**	**Analyst:**	J.MacLachlan
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load				
Avg:	34,671	1	4,422	18		0.00	0.00	0.00
SD:	368	1	1,171	14		1.00	1.00	1.00
CV:	0.01	0.63	0.26	0.74				
Min:	34,271	0.2	2,850	3.0		-1.23	-1.34	-1.13
Max:	35,930	2	7,410	70		2.39	2.55	3.79
Median:	34,537	1	4,170	15		-0.30	-0.22	-0.28

dZn	PC308		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.00471)		update r2	0.00	0.00471		r2:	0.193	0.359
r2 Q,[COC]:	0.005	[tCd]	Q			m:	-0.0006	-0.00097
slope, m:	-168.0	4,527	0.2			b:	21	33.17
intercept, b:	4558.2	4,424	0.8					
N: 33		4,222	2					
LnConc. = mLn{Q}+b (r2=0.0225)		update r2	0.02		0.0225			
r2 lnQ,ln[COC]:	0.02	ln[tCd]	ln Q	[tCd]	Q			
slope, m:	-0.06	8.42	-1.69	4,535	0.2			
intercept, b:	8.32	8.33	-0.22	4,157	1			
N: 33		8.28	0.69	3,936	2			

N= 33

	Sampling Date	Q Discharge cfs	dZn Concentration ug/L	dZn Load lbs/day	Ln Q	Ln dZn Conc.	Ln dZn Load	dZn PC308 for graph 0 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data										
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
IDEQ	29-Oct-93	0.64	5850	20.1	-0.45	8.67	3.00	-0.32	1.22	0.13
IDEQ	1-Dec-93	0.52	5200	14.5	-0.65	8.56	2.68	-0.56	0.66	-0.28
IDEQ	21-Dec-93	0.72	6490	25.1	-0.33	8.78	3.22	-0.16	1.77	0.50
IDEQ	21-Dec-93	2	6490	69.8	0.69	8.78	4.25	2.39	1.77	3.79
IDEQ	21-Jan-94	0.88	5320	25.2	-0.13	8.58	3.23	0.16	0.77	0.50
IDEQ	21-Jan-94	0.41	5320	11.7	-0.89	8.58	2.46	-0.78	0.77	-0.49
IDEQ	17-Feb-94		4660			8.45			0.20	
IDEQ	8-Mar-94	1.26	3910	26.5	0.23	8.27	3.28	0.92	-0.44	0.60
IDEQ	8-Mar-94	1.36	3910			8.27		1.12	-0.44	
IDEQ	23-Mar-94	1.34	3240	23.4	0.29	8.08	3.15	1.08	-1.01	0.37
IDEQ	8-Apr-94	1.08	3190	18.5	0.08	8.07	2.92	0.56	-1.05	0.01
IDEQ	18-Apr-94	1.02	2970	16.3	0.02	8.00	2.79	0.44	-1.24	-0.15
IDEQ	3-May-94	0.86	3230	14.9	-0.15	8.08	2.70	0.12	-1.02	-0.25
IDEQ	19-May-94	0.88	3670	17.4	-0.13	8.21	2.86	0.16	-0.64	-0.07
IDEQ	9-Jun-94		4120			8.32			-0.26	
IDEQ	24-Jun-94	0.25	4560	6.1	-1.39	8.43	1.81	-1.10	0.12	-0.90
IDEQ	22-Jul-94		4450			8.40			0.02	
IDEQ	16-Nov-94	0.88	7410			8.91		0.16	2.55	
IDEQ	10-Jan-95	1.97	4320	45.8	0.68	8.37	3.82	2.33	-0.09	2.02
IDEQ	9-Feb-95	1.91	3270	33.6	0.65	8.09	3.51	2.21	-0.98	1.12
IDEQ	22-Mar-95	0.91	2850	14.0	-0.09	7.96	2.64	0.22	-1.34	-0.32
IDEQ	14-Apr-95	0.45	3680	8.9	-0.80	8.21	2.19	-0.70	-0.63	-0.70
IDEQ	25-Apr-95	0.39	3580	7.5	-0.94	8.18	2.02	-0.82	-0.72	-0.80
IDEQ	10-May-95	0.29	3530	5.5	-1.24	8.17	1.71	-1.02	-0.76	-0.95
IDEQ	24-May-95	0.27	4010			8.30		-1.06	-0.35	
IDEQ	12-Jun-95	0.59	4280	13.6	-0.53	8.36	2.61	-0.42	-0.12	-0.35
IDEQ	27-Jun-95	0.56	4220	12.7	-0.58	8.35	2.54	-0.48	-0.17	-0.42
IDEQ	12-Jul-95	0.55	4170	12.3	-0.60	8.34	2.51	-0.50	-0.22	-0.44
IDEQ	25-Jul-95	0.52	4120	11.5	-0.65	8.32	2.44	-0.56	-0.26	-0.50
IDEQ	14-Aug-95	0.66	4860	17.3	-0.42	8.49	2.85	-0.28	0.37	-0.08
IDEQ	13-Sep-95	0.48	4980	12.9	-0.73	8.51	2.55	-0.64	0.48	-0.40
URS	13-Nov-97	0.186	7080	7.1	-1.68	8.87	1.96	-1.23	2.27	-0.83
URS	15-May-98	0.185	3000	3.0	-1.69	8.01	1.09	-1.23	-1.21	-1.13

dZn

Concentration over time analysis

	dZn	PC308		r2	Slope, m
	LnConc.=mTime+b All data r2, m:			**0.010**	**-0.00007**
	Time	**Ln[COC]**	**[COC]**		
first:	29-Oct-93	8.39	4,397		
mid:	22-Jul-94	8.37	4,320		
last:	15-May-98	8.28	3,937		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

Load over time analysis

	dZn	PC308			Load over time
	LnLoad=mTime+b All data r2, m:			**0.393**	**-0.00103**
	Time	**LnLoad**	**Load**		
first:	29-Oct-93	3.14	23		
mid:	22-Jul-94	2.86	17		
last:	15-May-98	1.43	4		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

max r2: 0.073 — **Forward time Regression on Ln Concentration(t)**

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.010	-0.00007	10.67
0.003	-0.00004	9.72
0.001	-0.00002	9.09
0.001	0.00002	7.68
0.011	0.00007	6.04
0.023	0.00009	5.02
0.043	0.00013	3.83
0.058	0.00015	3.06
0.058	0.00015	2.92
0.059	0.00016	2.76
0.045	0.00014	3.44
0.030	0.00011	4.32
0.013	0.00007	5.74
0.004	0.00004	6.96
0.001	0.00002	7.66
0.001	0.00002	7.76
0.002	0.00003	7.16
0.004	0.00005	6.61
0.061	0.00015	2.93
0.073	0.00017	2.29
0.054	0.00015	3.23
0.028	0.00009	5.03
0.018	0.00008	5.67
0.008	0.00005	6.63
0.001	0.00001	7.94
0.000	-0.00001	8.67
0.001	-0.00002	9.08
0.005	-0.00004	9.84
0.017	-0.00008	11.26

max r2: 0.847 — **Forward time Regression on Ln Load(t)**

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.393	-0.00103	38.48
0.389	-0.00105	38.99
0.407	-0.00109	40.68
0.392	-0.00108	40.30
0.368	-0.00094	35.32
0.344	-0.00091	34.20
0.376	-0.00098	36.68
0.376	-0.00098	36.68
0.347	-0.00094	35.11
0.347	-0.00094	35.11
0.319	-0.00090	33.84
0.301	-0.00089	33.57
0.291	-0.00090	34.02
0.288	-0.00094	35.14
0.269	-0.00094	35.22
0.269	-0.00094	35.22
0.424	-0.00121	44.77
0.424	-0.00121	44.77
0.424	-0.00121	44.77
0.436	-0.00103	38.43
0.462	-0.00087	32.88
0.440	-0.00085	31.89
0.467	-0.00089	33.48
0.549	-0.00098	36.69
0.847	-0.00117	43.38
0.847	-0.00117	43.38
0.840	-0.00118	43.67
0.839	-0.00120	44.63
0.842	-0.00125	46.38

update for EV, CV:

dZn **PC308**

LN Analysis **dZn**

Load **Load Data, EV=18.8 lbs/day CV=0.719**

			Load Data-based LN	
Avg:	**19**	u	ln tCd Load	tCd Load
SD:	**14**	3	4.7	106
CV:	**0.72**	0	2.73	15
Min:	**3.0**	-3	0.79	2.2
Max:	**70**			
Median:	**15**			

19	18.8
0.72	0.719

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.964, EV=18.5lbs/day CV=0.991; max r2=0.99**

r2 u,lnLoad:	0.964	u	lnLoad	Load		
slope, m:	1.209	3	5.06	157		
intercept, b:	-3.112	0	2.57	13		
N:	30	-3	0.09	1.1		
E[Load]:	18.5	Parameter Estimates			0.964	0.964
SD[Load]:	18	from LN regression			18.5	18.5
CV[Load]:	0.99	update graph label			1.0	0.991
					max r2	
	dZn	N: 33			0.988	

Date	**Load lbs/day Ranked**	**i rank**	**i-3/8 / N+1/4 plotting points**	**u y-axis**	**Ln x-axis**	**r2 forward**
update and rank for new data						
9-Jun-94		1	0.0188	-2.079		
17-Feb-94		2	0.0489	-1.656		
22-Jul-94		3	0.0789	-1.412		
15-May-98	**3.0**	4	0.1090	-1.232	1.094	0.964
10-May-95	**5.5**	5	0.1391	-1.084	1.706	0.981
24-May-95	**5.8**	6	0.1692	-0.957	1.762	0.980
24-Jun-94	**6.1**	7	0.1992	-0.844	1.814	0.979
13-Nov-97	**7.1**	8	0.2293	-0.741	1.958	0.981
25-Apr-95	**7.5**	9	0.2594	-0.645	2.016	0.982
14-Apr-95	**8.9**	10	0.2895	-0.555	2.187	0.985
25-Jul-95	**11.5**	11	0.3195	-0.469	2.445	0.984
21-Jan-94	**11.7**	12	0.3496	-0.386	2.463	0.986
12-Jul-95	**12.3**	13	0.3797	-0.306	2.513	0.986
27-Jun-95	**12.7**	14	0.4098	-0.228	2.543	0.988
13-Sep-95	**12.9**	15	0.4398	-0.151	2.554	0.988
12-Jun-95	**13.6**	16	0.4699	-0.075	2.609	0.988
22-Mar-95	**14.0**	17	0.5000	0.000	2.636	0.988
1-Dec-93	**14.5**	18	0.5301	0.075	2.677	0.987
3-May-94	**14.9**	19	0.5602	0.151	2.704	0.986
18-Apr-94	**16.3**	20	0.5902	0.228	2.791	0.984
14-Aug-95	**17.3**	21	0.6203	0.306	2.848	0.982
19-May-94	**17.4**	22	0.6504	0.386	2.855	0.980
8-Apr-94	**18.5**	23	0.6805	0.469	2.920	0.977
29-Oct-93	**20.1**	24	0.7105	0.555	3.003	0.973
23-Mar-94	**23.4**	25	0.7406	0.645	3.151	0.968
21-Dec-93	**25.1**	26	0.7707	0.741	3.224	0.970
21-Jan-94	**25.2**	27	0.8008	0.844	3.226	0.982
8-Mar-94	**26.5**	28	0.8308	0.957	3.277	0.984
8-Mar-94	**28.6**	29	0.8609	1.084	3.354	0.983
9-Feb-95	**33.6**	30	0.8910	1.232	3.515	
16-Nov-94	**35.1**	31	0.9211	1.412	3.558	
10-Jan-95	**45.8**	32	0.9511	1.656	3.824	
21-Dec-93	**69.8**	33	0.9812	2.079	4.246	

		update for EV, CV:			
dZn		PC308		4,422	4420
LN Analysis		dZn		0.26	0.265
Concentration		Conc. Data, EV=4420 ug/L CV=0.265			
Avg:	4,422	Data-based LN			
SD:	1,171	u	ln[tCd]	[tCd]	
CV:	0.26	3	9.1	9337	
Min:	2,850	0	8.36	4275	
Max:	7,410	-3	7.58	1957	
Median:	4,170				

					0.972	0.972
u=m.Ln{Conc.}+b:					4433.9	4430
update for r2, EV, CV.	r2=0.972, EV=4430 ug/L CV=0.269; max r2=0.98				0.269	0.269
	r2 u,lnConc:	0.972	u	lnConc.	Conc.	
	slope, m:	3.784	3	9.15	9461	
	intercept, b:	-31.642	0	8.36	4282	
	N:	33	-3	7.57	1938	
	E[Conc]:	4433.9	Parameter Estimates			
	SD[Conc]:	1193	from LN regression			
	CV[Conc]:	0.27	update graph label			

	dZn	N: 33				max r2 0.983
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
22-Mar-95	2850	1	0.0188	-2.079	7.955	0.972
18-Apr-94	2970	2	0.0489	-1.656	7.996	0.980
15-May-98	3000	3	0.0789	-1.412	8.006	0.983
8-Apr-94	3190	4	0.1090	-1.232	8.068	0.982
3-May-94	3230	5	0.1391	-1.084	8.080	0.983
23-Mar-94	3240	6	0.1692	-0.957	8.083	0.983
9-Feb-95	3270	7	0.1992	-0.844	8.093	0.981
10-May-95	3530	8	0.2293	-0.741	8.169	0.980
25-Apr-95	3580	9	0.2594	-0.645	8.183	0.979
19-May-94	3670	10	0.2895	-0.555	8.208	0.978
14-Apr-95	3680	11	0.3195	-0.469	8.211	0.977
8-Mar-94	3910	12	0.3496	-0.386	8.271	0.975
8-Mar-94	3910	13	0.3797	-0.306	8.271	0.976
24-May-95	4010	14	0.4098	-0.228	8.297	0.975
9-Jun-94	4120	15	0.4398	-0.151	8.324	0.975
25-Jul-95	4120	16	0.4699	-0.075	8.324	0.977
12-Jul-95	4170	17	0.5000	0.000	8.336	0.976
27-Jun-95	4220	18	0.5301	0.075	8.348	0.975
12-Jun-95	4280	19	0.5602	0.151	8.362	0.972
10-Jan-95	4320	20	0.5902	0.228	8.371	0.968
22-Jul-94	4450	21	0.6203	0.306	8.401	0.964
24-Jun-94	4560	22	0.6504	0.386	8.425	0.958
17-Feb-94	4660	23	0.6805	0.469	8.447	0.951
14-Aug-95	4860	24	0.7105	0.555	8.489	0.943
13-Sep-95	4980	25	0.7406	0.645	8.513	0.932
1-Dec-93	5200	26	0.7707	0.741	8.556	0.916
21-Jan-94	5320	27	0.8008	0.844	8.579	0.894
21-Jan-94	5320	28	0.8308	0.957	8.579	0.862
29-Oct-93	5850	29	0.8609	1.084	8.674	0.887
21-Dec-93	6490	30	0.8910	1.232	8.778	
21-Dec-93	6490	31	0.9211	1.412	8.778	
13-Nov-97	7080	32	0.9511	1.656	8.865	
16-Nov-94	7410	33	0.9812	2.079	8.911	

update for EV, CV:

dZn		**PC308**			1	0.801
LN Analysis		**dZn**			0.63	0.626
Discharge, Q		**Q Data, EV=0.801 cfs CV=0.626**				
Avg:	**1**	**Q Data-based LN**				
SD:	**1**	**u**	lnQ	Q		
CV:	**0.63**	3	1.3	4		
Min:	**0**	0	-0.39	1		
Max:	**2**	-3	-2.11	0		
Median:	**1**					
					0.965	0.965
					0.8	0.787
	u=mLn(Q)+b:				0.94	0.937

update for r2, EV, CV: **r2=0.965, EV=0.787 cfs CV=0.937; max r2=0.98**

r2 u,lnQ:	0.965	u	lnQ	Q
slope, m:	1.260	3	1.83	6
intercept, b:	0.699	0	-0.55	1
N:	30	-3	-2.94	0
E[Q]:	0.8	Parameter Estimates		
SD[Q]:	1	from LN regression		
CV[Q]:	0.94	update graph label		

N: 33

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.977 r2 forward
update and rank for new data						
9-Jun-94		1	0.0188	-2.079		
17-Feb-94		2	0.0489	-1.656		
22-Jul-94		3	0.0789	-1.412		
15-May-98	0.185	4	0.1090	-1.232	-1.687	0.965
13-Nov-97	0.186	5	0.1391	-1.084	-1.682	0.963
24-Jun-94	0.25	6	0.1692	-0.957	-1.386	0.970
24-May-95	0.27	7	0.1992	-0.844	-1.309	0.970
10-May-95	0.29	8	0.2293	-0.741	-1.238	0.972
25-Apr-95	0.39	9	0.2594	-0.645	-0.942	0.977
21-Jan-94	0.41	10	0.2895	-0.555	-0.892	0.975
14-Apr-95	0.45	11	0.3195	-0.469	-0.799	0.973
13-Sep-95	0.48	12	0.3496	-0.386	-0.734	0.970
1-Dec-93	0.52	13	0.3797	-0.306	-0.654	0.967
25-Jul-95	0.52	14	0.4098	-0.228	-0.654	0.964
12-Jul-95	0.55	15	0.4398	-0.151	-0.598	0.960
27-Jun-95	0.56	16	0.4699	-0.075	-0.580	0.955
12-Jun-95	0.59	17	0.5000	0.000	-0.528	0.951
29-Oct-93	0.64	18	0.5301	0.075	-0.446	0.946
14-Aug-95	0.66	19	0.5602	0.151	-0.416	0.940
21-Dec-93	0.72	20	0.5902	0.228	-0.329	0.934
3-May-94	0.86	21	0.6203	0.306	-0.151	0.926
16-Nov-94	0.88	22	0.6504	0.386	-0.128	0.921
19-May-94	0.88	23	0.6805	0.469	-0.128	0.914
21-Jan-94	0.88	24	0.7105	0.555	-0.128	0.900
22-Mar-95	0.91	25	0.7406	0.645	-0.094	0.880
18-Apr-94	1.02	26	0.7707	0.741	0.020	0.857
8-Apr-94	1.08	27	0.8008	0.844	0.077	0.820
8-Mar-94	1.26	28	0.8308	0.957	0.231	0.770
23-Mar-94	1.34	29	0.8609	1.084	0.293	0.686
8-Mar-94	1.36	30	0.8910	1.232	0.307	
9-Feb-95	1.91	31	0.9211	1.412	0.647	
10-Jan-95	1.97	32	0.9511	1.656	0.678	
21-Dec-93	2	33	0.9812	2.079	0.693	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.		see comment
Station:	PC308	**Date:** 20-Jun-00
Chemical:	tCd	**Analyst:** J.MacLachlan
Notes:		

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,671	1	12	0.05	0.00	0.00	0.00
SD:	368	1	3	0.03	1.00	1.00	1.00
CV:	0.01	0.63	0.27	0.70			
Min:	34,271	0.2	7	0.01	-1.23	-1.50	-1.15
Max:	35,930	2	19	0.17	2.39	2.44	3.74
Median:	34,537	1	11	0.04	-0.30	-0.17	-0.25

tCd PC308			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.0163)		update r2	0.02	0.0163	r2:	0.193	0.367
r2 Q,[COC]:	0.02	[tCd]	Q		m:	-0.0006	-0.00103
slope, m:	-0.8	12	0.2		b:	21	35.18
intercept, b:	12.0	11	0.8				
N: 33		10	2				
LnConc. = mLn(Q)+b (r2=0.0258)		update r2		0.03	0.0258		
r2 lnQ,ln[COC]:	0.03	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.07	2.48	-1.69	12	0.2		
intercept, b:	2.37	2.38	-0.22	11	1		
N: 33		2.32	0.69	10	2		

N= 33

	Sampling Date	Q Discharge	tCd Concentration	tCd Load	Ln Q	Ln tCd Conc.	Ln tCd Load	tCd PC308 Standardized Values = (x - Avg)/SD for graph 0		
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
IDEQ	29-Oct-93	0.64	13.3	0.0	-0.45	2.59	-3.08	-0.32	0.58	-0.07
IDEQ	1-Dec-93	0.52	13.2	0.0	-0.65	2.58	-3.30	-0.56	0.55	-0.33
IDEQ	21-Dec-93	0.72	16.1	0.1	-0.33	2.78	-2.77	-0.16	1.49	0.43
IDEQ	21-Dec-93	2	16.1	0.2	0.69	2.78	-1.75	2.39	1.49	3.74
IDEQ	21-Jan-94	0.88	10	0.0	-0.13	2.30	-3.05	0.16	-0.49	-0.02
IDEQ	21-Jan-94	0.41	10	0.0	-0.89	2.30	-3.81	-0.78	-0.49	-0.78
IDEQ	17-Feb-94		9.8			2.28			-0.56	
IDEQ	8-Mar-94	1.26	10	0.1	0.23	2.30	-2.69	0.92	-0.49	0.59
IDEQ	8-Mar-94	1.36	10	0.1	0.31	2.30	-2.61	1.12	-0.49	0.75
IDEQ	23-Mar-94	1.34	8.3	0.1	0.29	2.12	-2.82	1.08	-1.04	0.35
IDEQ	8-Apr-94	1.08	6.9	0.0	0.08	1.93	-3.22	0.56	-1.50	-0.24
IDEQ	18-Apr-94	1.02	9	0.0	0.02	2.20	-3.01	0.44	-0.82	0.04
IDEQ	3-May-94	0.86	9.8	0.0	-0.15	2.28	-3.09	0.12	-0.56	-0.08
IDEQ	19-May-94	0.88	11	0.1	-0.13	2.40	-2.96	0.16	-0.17	0.12
IDEQ	9-Jun-94		13			2.56			0.49	
IDEQ	24-Jun-94	0.25	14	0.0	-1.39	2.64	-3.97	-1.10	0.81	-0.87
IDEQ	22-Jul-94		15			2.71			1.14	
IDEQ	16-Nov-94	0.88	19	0.1	-0.13	2.94	-2.41	0.16	2.44	1.25
IDEQ	10-Jan-95	1.97	11	0.1	0.68	2.40	-2.15	2.33	-0.17	2.05
IDEQ	9-Feb-95	1.91	7.7	0.1	0.65	2.04	-2.54	2.21	-1.24	0.93
IDEQ	22-Mar-95	0.91	7.2	0.0	-0.09	1.97	-3.35	0.22	-1.40	-0.38
IDEQ	14-Apr-95	0.45	8.4	0.0	-0.80	2.13	-3.90	-0.70	-1.01	-0.83
IDEQ	25-Apr-95	0.39	7.4	0.0	-0.94	2.00	-4.17	-0.82	-1.34	-0.97
IDEQ	10-May-95	0.29	9	0.0	-1.24	2.20	-4.27	-1.02	-0.82	-1.01
IDEQ	24-May-95	0.27	10	0.0	-1.31	2.30	-4.23	-1.06	-0.49	-1.00
IDEQ	12-Jun-95	0.59	11	0.0	-0.53	2.40	-3.35	-0.42	-0.17	-0.39
IDEQ	27-Jun-95	0.56	12	0.0	-0.58	2.48	-3.32	-0.48	0.16	-0.35
IDEQ	12-Jul-95	0.55	11	0.0	-0.60	2.40	-3.43	-0.50	-0.17	-0.46
IDEQ	25-Jul-95	0.52	14	0.0	-0.65	2.64	-3.24	-0.56	0.81	-0.26
IDEQ	14-Aug-95	0.66	15	0.1	-0.42	2.71	-2.93	-0.28	1.14	0.16
IDEQ	13-Sep-95	0.48	15	0.0	-0.73	2.71	-3.25	-0.64	1.14	-0.28
URS	13-Nov-97	0.186	17	0.0	-1.68	2.83	-4.07	-1.23	1.79	-0.93
URS	15-May-98	0.185	9.6	0.0	-1.69	2.26	-4.65	-1.23	-0.62	-1.15

tCd

Concentration over time analysis

	tCd	PC308		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.004**	**0.00004**
	Time	**Ln[COC]**	**[COC]**		
first:	29-Oct-93	2.39	11		
mid:	22-Jul-94	2.40	11		
last:	15-May-98	2.46	12		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

Load over time analysis

	tCd	PC308			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.316**	**-0.00097**
	Time	**LnLoad**	**Load**		
first:	29-Oct-93	-2.84	0.06		
mid:	22-Jul-94	-3.10	0.05		
last:	15-May-98	-4.45	0.01		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

max r2: 0.211 — max r2: 0.942

Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.004	0.00004	0.86	0.316	-0.00097	30.45
0.008	0.00006	0.20	0.320	-0.00100	31.35
0.013	0.00008	-0.46	0.337	-0.00104	32.98
0.029	0.00012	-1.84	0.325	-0.00104	32.74
0.057	0.00017	-3.43	0.294	-0.00091	28.28
0.054	0.00017	-3.40	0.289	-0.00092	28.63
0.052	0.00017	-3.38	0.353	-0.00103	32.51
0.048	0.00016	-3.25	0.353	-0.00103	32.51
0.045	0.00016	-3.18	0.331	-0.00100	31.48
0.042	0.00016	-3.09	0.303	-0.00095	29.86
0.028	0.00013	-2.13	0.281	-0.00093	28.93
0.010	0.00007	-0.11	0.282	-0.00096	29.99
0.003	0.00004	0.90	0.267	-0.00096	29.94
0.001	0.00002	1.62	0.257	-0.00097	30.37
0.001	0.00002	1.80	0.234	-0.00095	29.74
0.003	0.00004	0.93	0.234	-0.00095	29.74
0.011	0.00009	-0.68	0.326	-0.00116	37.06
0.036	0.00016	-3.18	0.326	-0.00116	37.06
0.122	0.00026	-6.89	0.291	-0.00104	32.69
0.132	0.00028	-7.49	0.273	-0.00085	26.29
0.104	0.00024	-6.03	0.250	-0.00071	21.22
0.074	0.00018	-4.03	0.230	-0.00068	20.14
0.049	0.00014	-2.58	0.259	-0.00073	21.97
0.017	0.00007	0.02	0.353	-0.00084	25.89
0.001	0.00002	1.96	0.543	-0.00100	31.45
0.005	-0.00003	3.68	0.882	-0.00119	38.38
0.028	-0.00007	5.16	0.893	-0.00123	39.74
0.057	-0.00011	6.39	0.900	-0.00127	41.17
0.211	-0.00020	9.64	0.942	-0.00137	44.76

update for EV, CV:

tCd
LN Analysis
Load

PC308
tCd
Load Data, EV=0.048 lbs/day CV=0.697
Load Data-based LN

Avg:	**0.05**
SD:	**0.03**
CV:	**0.70**
Min:	**0.01**
Max:	**0.17**
Median:	**0.04**

u	ln tCd Load	tCd Load
3	-1.3	0.26
0	-3.23	0.04
-3	-5.12	0.01

0	0.048
0.70	0.697

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.963, EV=0.047lbs/day CV=0.963; max r2=0.99**

r2 u,lnLoad:	0.963	u	lnLoad	Load
slope, m:	1.234	3	-0.95	0.385
intercept, b:	4.179	0	-3.39	0.034
N:	30	-3	-5.82	0.003
E[Load]:	0.05	Parameter Estimates		
SD[Load]:	0.05	from LN regression		
CV[Load]:	0.96	update graph label		

	0.963
	0.0
	1.0
	max r2
	0.992

	0.963
	0.047
	0.963

N: 33

Date	tCd Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
9-Jun-94		1	0.0188	-2.079		
17-Feb-94		2	0.0489	-1.656		
22-Jul-94		3	0.0789	-1.412		
15-May-98	0.01	4	0.1090	-1.232	-4.651	0.963
10-May-95	0.01	5	0.1391	-1.084	-4.266	0.966
24-May-95	0.01	6	0.1692	-0.957	-4.232	0.963
25-Apr-95	0.02	7	0.1992	-0.844	-4.165	0.961
13-Nov-97	0.02	8	0.2293	-0.741	-4.074	0.960
24-Jun-94	0.02	9	0.2594	-0.645	-3.972	0.962
14-Apr-95	0.02	10	0.2895	-0.555	-3.895	0.964
21-Jan-94	0.02	11	0.3195	-0.469	-3.814	0.968
12-Jul-95	0.03	12	0.3496	-0.386	-3.425	0.977
12-Jun-95	0.03	13	0.3797	-0.306	-3.355	0.977
22-Mar-95	0.04	14	0.4098	-0.228	-3.345	0.980
27-Jun-95	0.04	15	0.4398	-0.151	-3.320	0.982
1-Dec-93	0.04	16	0.4699	-0.075	-3.299	0.983
13-Sep-95	0.04	17	0.5000	0.000	-3.251	0.983
25-Jul-95	0.04	18	0.5301	0.075	-3.240	0.984
8-Apr-94	0.04	19	0.5602	0.151	-3.217	0.983
3-May-94	0.05	20	0.5902	0.228	-3.094	0.981
29-Oct-93	0.05	21	0.6203	0.306	-3.084	0.984
21-Jan-94	0.05	22	0.6504	0.386	-3.050	0.986
18-Apr-94	0.05	23	0.6805	0.469	-3.008	0.986
19-May-94	0.05	24	0.7105	0.555	-2.955	0.986
14-Aug-95	0.05	25	0.7406	0.645	-2.933	0.987
23-Mar-94	0.06	26	0.7707	0.741	-2.816	0.984
21-Dec-93	0.06	27	0.8008	0.844	-2.775	0.987
8-Mar-94	0.07	28	0.8308	0.957	-2.691	0.988
8-Mar-94	0.07	29	0.8609	1.084	-2.615	0.992
9-Feb-95	0.08	30	0.8910	1.232	-2.537	
16-Nov-94	0.09	31	0.9211	1.412	-2.408	
10-Jan-95	0.12	32	0.9511	1.656	-2.149	
21-Dec-93	0.17	33	0.9812	2.079	-1.753	

update for EV, CV:

tCd		PC308		12	11.5
LN Analysis		tCd		0.27	0.267
Concentration		Conc. Data, EV=11.5 ug/L CV=0.267			
Avg:	12	Data-based LN			
SD:	3	u	ln[tCd]	[tCd]	
CV:	0.27	3	3.2	24	
Min:	7	0	2.41	11	
Max:	19	-3	1.62	5	
Median:	11				

					0.977	0.977
u=mLn{Conc.}+b:					11.6	11.6
update for r2, EV, CV:	rZ=0.977, EV=11.6 ug/L CV=0.283; max r2=0.98				0.283	0.283
	r2 u,lnConc:	0.977	u	lnConc.	Conc.	
	slope, m:	3.601	3	3.24	26	
	intercept, b:	-8.673	0	2.41	11	
	N:	33	-3	1.58	5	
	E[Conc]:	11.6	Parameter Estimates			
	SD[Conc]:	3	from LN regression			
	CV[Conc]:	0.28	update graph label			

	tCd	N: 33				max r2 0.978
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Data	ug/L	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
8-Apr-94	6.9	1	0.0188	-2.079	1.932	0.977
22-Mar-95	7.2	2	0.0489	-1.656	1.974	0.978
25-Apr-95	7.4	3	0.0789	-1.412	2.001	0.977
9-Feb-95	7.7	4	0.1090	-1.232	2.041	0.974
23-Mar-94	8.3	5	0.1391	-1.084	2.116	0.971
14-Apr-95	8.4	6	0.1692	-0.957	2.128	0.968
10-May-95	9	7	0.1992	-0.844	2.197	0.965
18-Apr-94	9	8	0.2293	-0.741	2.197	0.963
15-May-98	9.6	9	0.2594	-0.645	2.262	0.960
3-May-94	9.8	10	0.2895	-0.555	2.282	0.959
17-Feb-94	9.8	11	0.3195	-0.469	2.282	0.958
8-Mar-94	10	12	0.3496	-0.386	2.303	0.956
8-Mar-94	10	13	0.3797	-0.306	2.303	0.953
21-Jan-94	10	14	0.4098	-0.228	2.303	0.948
21-Jan-94	10	15	0.4398	-0.151	2.303	0.942
24-May-95	10	16	0.4699	-0.075	2.303	0.938
10-Jan-95	11	17	0.5000	0.000	2.398	0.940
12-Jul-95	11	18	0.5301	0.075	2.398	0.932
12-Jun-95	11	19	0.5602	0.151	2.398	0.925
19-May-94	11	20	0.5902	0.228	2.398	0.926
27-Jun-95	12	21	0.6203	0.306	2.485	0.961
9-Jun-94	13	22	0.6504	0.386	2.565	0.975
1-Dec-93	13.2	23	0.6805	0.469	2.580	0.971
29-Oct-93	13.3	24	0.7105	0.555	2.588	0.966
24-Jun-94	14	25	0.7406	0.645	2.639	0.966
25-Jul-95	14	26	0.7707	0.741	2.639	0.958
13-Sep-95	15	27	0.8008	0.844	2.708	0.953
14-Aug-95	15	28	0.8308	0.957	2.708	0.965
22-Jul-94	15	29	0.8609	1.084	2.708	0.961
21-Dec-93	16.1	30	0.8910	1.232	2.779	
21-Dec-93	16.1	31	0.9211	1.412	2.779	
13-Nov-97	17	32	0.9511	1.656	2.833	
16-Nov-94	19	33	0.9812	2.079	2.944	

update for EV, CV:

tCd		**PC308**			1	0.801
LN Analysis		**tCd**			0.63	0.626

Discharge, Q

Q Data, EV=0.801 cfs CV=0.626

Q Data-based LN

		u	lnQ	Q
Avg:	1			
SD:	1	u	lnQ	Q
CV:	0.63	3	1.3	4
Min:	0.2	0	-0.39	1
Max:	2	-3	-2.11	0.1
Median:	1			

	0.965	0.965
	0.8	0.787
	0.94	0.937

u=mLn{Q}+b:

update for r2, EV, CV: **r2=0.965, EV=0.787 cfs CV=0.937; max r2=0.98**

		u	lnQ	Q
r2 u,lnQ:	0.965			
slope, m:	1.260	3	1.83	6
intercept, b:	0.699	0	-0.55	1
N:	30	-3	-2.94	0.1
E[Q]:	0.8	Parameter Estimates		
SD[Q]:	1	from LN regression		
CV[Q]:	0.94	update graph label		

N: 33

max r2: 0.977

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
9-Jun-94		1	0.0188	-2.079		
17-Feb-94		2	0.0489	-1.656		
22-Jul-94		3	0.0789	-1.412		
15-May-98	0.185	4	0.1090	-1.232	-1.687	0.965
13-Nov-97	0.186	5	0.1391	-1.084	-1.682	0.963
24-Jun-94	0.25	6	0.1692	-0.957	-1.386	0.970
24-May-95	0.27	7	0.1992	-0.844	-1.309	0.970
10-May-95	0.29	8	0.2293	-0.741	-1.238	0.972
25-Apr-95	0.39	9	0.2594	-0.645	-0.942	0.977
21-Jan-94	0.41	10	0.2895	-0.555	-0.892	0.975
14-Apr-95	0.45	11	0.3195	-0.469	-0.799	0.973
13-Sep-95	0.48	12	0.3496	-0.386	-0.734	0.970
1-Dec-93	0.52	13	0.3797	-0.306	-0.654	0.967
25-Jul-95	0.52	14	0.4098	-0.228	-0.654	0.964
12-Jul-95	0.55	15	0.4398	-0.151	-0.598	0.960
27-Jun-95	0.56	16	0.4699	-0.075	-0.580	0.955
12-Jun-95	0.59	17	0.5000	0.000	-0.528	0.951
29-Oct-93	0.64	18	0.5301	0.075	-0.446	0.946
14-Aug-95	0.66	19	0.5602	0.151	-0.416	0.940
21-Dec-93	0.72	20	0.5902	0.228	-0.329	0.934
3-May-94	0.86	21	0.6203	0.306	-0.151	0.926
16-Nov-94	0.88	22	0.6504	0.386	-0.128	0.921
19-May-94	0.88	23	0.6805	0.469	-0.128	0.914
21-Jan-94	0.88	24	0.7105	0.555	-0.128	0.900
22-Mar-95	0.91	25	0.7406	0.645	-0.094	0.880
18-Apr-94	1.02	26	0.7707	0.741	0.020	0.857
8-Apr-94	1.08	27	0.8008	0.844	0.077	0.820
8-Mar-94	1.26	28	0.8308	0.957	0.231	0.770
23-Mar-94	1.34	29	0.8609	1.084	0.293	0.686
8-Mar-94	1.36	30	0.8910	1.232	0.307	
9-Feb-95	1.91	31	0.9211	1.412	0.647	
10-Jan-95	1.97	32	0.9511	1.656	0.678	
21-Dec-93	2	33	0.9812	2.079	0.693	

Secondary Scale For LN graphs

u	Cumulative Frequecay secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: PC308 **Date:** 20-Jun-00
Chemical: tPb **Analyst:** J.MacLachlan
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,671	1	10	0.04	0.00	0.00	0.00
SD:	368	1	5	0.04	1.00	1.00	1.00
CV:	0.01	0.63	0.47	1.00			
Min:	34,271	0.2	5	0.01	-1.23	-1.02	-0.87
Max:	35,930	2	20	0.2	2.39	2.24	3.67
Median:	34,537	1	8	0.03	-0.30	-0.48	-0.36

tPb PC308			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.0352)		update r2	0.04	0.0352	r2:	0.193	0.367
r2 Q,[COC]:	0.04	[tCd]	Q		m:	-0.0006	-0.00103
slope, m:	1.7	9	0.2		b:	21	35.18
intercept, b:	8.3	10	0.8				
N: 32		12	2				
LnConc. = mLn(Q)+b (r2=0.0097)		update r2		0.01	0.0097		
r2 lnQ,ln[COC]:	0.01	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	0.07	2.09	-1.69	8	0.2		
intercept, b:	2.20	2.18	-0.22	9	1		
N: 32		2.24	0.69	9	2		

N= 33

	Sampling Date	Q Discharge	tPb Concentration	tPb Load	Ln Q	Ln tPb Conc.	Ln tPb Load	tPb PC308 Standardized Values = (x - Avg)/SD	for graph 0	
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
IDEQ	29-Oct-93	0.64	9	0.031	-0.45	2.20	-3.47	-0.32	-0.15	-0.29
IDEQ	1-Dec-93	0.52	7	0.020	-0.65	1.95	-3.93	-0.56	-0.59	-0.55
IDEQ	21-Dec-93	0.72	19	0.074	-0.33	2.94	-2.61	-0.16	2.02	0.68
IDEQ	21-Dec-93	2	19	0.204	0.69	2.94	-1.59	2.39	2.02	3.67
IDEQ	21-Jan-94	0.88	5	0.024	-0.13	1.61	-3.74	0.16	-1.02	-0.46
IDEQ	21-Jan-94	0.41	5	0.011	-0.89	1.61	-4.51	-0.78	-1.02	-0.74
IDEQ	17-Feb-94		6			1.79			-0.81	
IDEQ	8-Mar-94	1.26	6	0.041	0.23	1.79	-3.20	0.92	-0.81	-0.07
IDEQ	8-Mar-94	1.36	6	0.044	0.31	1.79	-3.13	1.12	-0.81	0.01
IDEQ	23-Mar-94	1.34	12	0.087	0.29	2.48	-2.45	1.08	0.50	0.98
IDEQ	8-Apr-94	1.08	5	0.029	0.08	1.61	-3.54	0.56	-1.02	-0.33
IDEQ	*18-Apr-94*	*1.02*			0.02			0.44		
IDEQ	3-May-94	0.86	6	0.028	-0.15	1.79	-3.58	0.12	-0.81	-0.36
IDEQ	19-May-94	0.88	5	0.024	-0.13	1.61	-3.74	0.16	-1.02	-0.46
IDEQ	9-Jun-94		7			1.95			-0.59	
IDEQ	24-Jun-94	0.25	6	0.008	-1.39	1.79	-4.82	-1.10	-0.81	-0.81
IDEQ	22-Jul-94		17			2.83			1.58	
IDEQ	16-Nov-94	0.88	8	0.038	-0.13	2.08	-3.27	0.16	-0.37	-0.13
IDEQ	10-Jan-95	1.97	15	0.159	0.68	2.71	-1.84	2.33	1.15	2.63
IDEQ	9-Feb-95	1.91	7	0.072	0.65	1.95	-2.63	2.21	-0.59	0.65
IDEQ	22-Mar-95	0.91	17	0.083	-0.09	2.83	-2.49	0.22	1.58	0.90
IDEQ	14-Apr-95	0.45	9	0.022	-0.80	2.20	-3.83	-0.70	-0.15	-0.50
IDEQ	25-Apr-95	0.39	7	0.015	-0.94	1.95	-4.22	-0.82	-0.59	-0.66
IDEQ	10-May-95	0.29	9	0.014	-1.24	2.20	-4.27	-1.02	-0.15	-0.68
IDEQ	24-May-95	0.27	12	0.017	-1.31	2.48	-4.05	-1.06	0.50	-0.60
IDEQ	12-Jun-95	0.59	14	0.044	-0.53	2.64	-3.11	-0.42	0.93	0.02
IDEQ	27-Jun-95	0.56	20	0.060	-0.58	3.00	-2.81	-0.48	2.24	0.38
IDEQ	12-Jul-95	0.55	7	0.021	-0.60	1.95	-3.88	-0.50	-0.59	-0.52
IDEQ	25-Jul-95	0.52	10	0.028	-0.65	2.30	-3.58	-0.56	0.06	-0.36
IDEQ	14-Aug-95	0.66	7	0.025	-0.42	1.95	-3.69	-0.28	-0.59	-0.43
IDEQ	13-Sep-95	0.48	10	0.026	-0.73	2.30	-3.66	-0.64	0.06	-0.41
URS	13-Nov-97	0.186	13.2	0.013	-1.68	2.58	-4.33	-1.23	0.76	-0.69
URS	15-May-98	0.185	5.5	0.005	-1.69	1.70	-5.21	-1.23	-0.91	-0.87

tPb

Concentration over time analysis

				r2	Slope, m
	tPb	PC308		Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.015	0.00015
	Time	Ln[COC]	[COC]		
first:	29-Oct-93	2.11	8		
mid:	22-Jul-94	2.15	9		
last:	15-May-98	2.35	11		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

Load over time analysis

	tPb	PC308		Load over time	
	LnLoad=mTime+b All data r2, m:			0.170	-0.00088
	Time	LnLoad	Load		
first:	29-Oct-93	-3.11	0.04		
mid:	22-Jul-94	-3.35	0.04		
last:	15-May-98	-4.57	0.01		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

max r2:	0.115		max r2:	0.887	
Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.015	0.00015	-2.89	0.170	-0.00088	26.97
0.016	0.00015	-3.18	0.177	-0.00092	28.35
0.013	0.00014	-2.61	0.206	-0.00101	31.49
0.035	0.00022	-5.47	0.185	-0.00096	29.69
0.077	0.00031	-8.78	0.144	-0.00077	23.12
0.059	0.00027	-7.29	0.159	-0.00083	25.21
0.040	0.00022	-5.54	0.236	-0.00101	31.47
0.028	0.00019	-4.35	0.236	-0.00101	31.47
0.018	0.00015	-2.99	0.230	-0.00101	31.79
0.008	0.00010	-1.37	0.219	-0.00101	31.77
0.017	0.00015	-2.94	0.179	-0.00090	27.70
0.004	0.00007	-0.09	0.186	-0.00095	29.57
0.004	0.00007	-0.09	0.186	-0.00095	29.57
0.000	0.00000	2.21	0.198	-0.00102	32.00
0.010	-0.00011	6.08	0.226	-0.00114	36.21
0.027	-0.00018	8.55	0.226	-0.00114	36.21
0.077	-0.00030	12.72	0.425	-0.00153	49.98
0.041	-0.00021	9.74	0.425	-0.00153	49.98
0.061	-0.00026	11.53	0.423	-0.00156	51.11
0.041	-0.00021	9.65	0.436	-0.00135	43.43
0.072	-0.00028	11.96	0.418	-0.00123	39.21
0.046	-0.00020	9.41	0.439	-0.00107	33.58
0.053	-0.00022	10.10	0.448	-0.00110	34.65
0.095	-0.00029	12.52	0.531	-0.00120	38.39
0.115	-0.00033	13.81	0.659	-0.00134	43.30
0.100	-0.00031	13.20	0.761	-0.00147	47.91
0.066	-0.00025	10.94	0.750	-0.00140	45.53
0.004	-0.00004	3.67	0.855	-0.00121	38.46
0.032	-0.00012	6.49	0.887	-0.00130	41.62

update for EV, CV:

tPb		**PC308**		
LN Analysis		**tPb**		
Load		**Load Data, EV=0.0436 lbs/day CV=1**		
Avg:	**0.04**	**Load Data-based LN**		
SD:	**0.04**	u	ln tCd Load	tCd Load
CV:	**1.00**	3	-1.0	0.38
Min:	**0.01**	0	-3.48	0.03
Max:	**0.2**	-3	-5.98	0.003
Median:	**0.03**			
		0	0.0436	
		1.00	1	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.98, EV=0.0414lbs/day CV=1.36; max r2=0.98**

r2 u,lnLoad:	0.980	u	lnLoad	Load		
slope, m:	0.975	3	-0.63	1		
intercept, b:	3.618	0	-3.71	0.02		
N:	29	-3	-6.78	0.001		
E[Load]:	0.04	Parameter Estimates			0.980	0.98
SD[Load]:	0.1	from LN regression			0.0	0.0414
CV[Load]:	1.36	update graph label			1.4	1.36
					max r2	
	tPb	N: 33			0.982	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
17-Feb-94		1	0.0188	-2.079		
9-Jun-94		2	0.0489	-1.656		
22-Jul-94		3	0.0789	-1.412		
15-May-98	**0.005**	4	0.1090	-1.232	-5.208	0.980
18-Apr-94		5	0.1391	-1.084		
24-Jun-94	**0.008**	6	0.1692	-0.957	-4.820	0.982
21-Jan-94	**0.011**	7	0.1992	-0.844	-4.507	0.982
13-Nov-97	**0.013**	8	0.2293	-0.741	-4.327	0.980
10-May-95	**0.014**	9	0.2594	-0.645	-4.266	0.979
25-Apr-95	**0.015**	10	0.2895	-0.555	-4.221	0.977
24-May-95	**0.017**	11	0.3195	-0.469	-4.049	0.975
1-Dec-93	**0.020**	12	0.3496	-0.386	-3.933	0.974
12-Jul-95	**0.021**	13	0.3797	-0.306	-3.877	0.975
14-Apr-95	**0.022**	14	0.4098	-0.228	-3.826	0.976
21-Jan-94	**0.024**	15	0.4398	-0.151	-3.743	0.977
19-May-94	**0.024**	16	0.4699	-0.075	-3.743	0.980
14-Aug-95	**0.025**	17	0.5000	0.000	-3.695	0.980
13-Sep-95	**0.026**	18	0.5301	0.075	-3.656	0.980
3-May-94	**0.028**	19	0.5602	0.151	-3.584	0.979
25-Jul-95	**0.028**	20	0.5902	0.228	-3.576	0.978
8-Apr-94	**0.029**	21	0.6203	0.306	-3.539	0.975
29-Oct-93	**0.031**	22	0.6504	0.386	-3.474	0.971
16-Nov-94	**0.038**	23	0.6805	0.469	-3.273	0.967
8-Mar-94	**0.041**	24	0.7105	0.555	-3.202	0.962
8-Mar-94	**0.044**	25	0.7406	0.645	-3.126	0.954
12-Jun-95	**0.044**	26	0.7707	0.741	-3.114	0.944
27-Jun-95	**0.060**	27	0.8008	0.844	-2.809	0.938
9-Feb-95	**0.072**	28	0.8308	0.957	-2.632	0.923
21-Dec-93	**0.074**	29	0.8609	1.084	-2.609	0.926
22-Mar-95	**0.083**	30	0.8910	1.232	-2.486	
23-Mar-94	**0.087**	31	0.9211	1.412	-2.447	
10-Jan-95	**0.159**	32	0.9511	1.656	-1.839	
21-Dec-93	**0.204**	33	0.9812	2.079	-1.587	

		update for EV, CV:			
tPb		PC308		10	9.71
LN Analysis		tPb		0.47	0.474
Concentration		Conc. Data, EV=9.71 ug/L CV=0.474			
Avg:	10	Data-based LN			
SD:	5	u	ln[tCd]	[tCd]	
CV:	0.47	3	3.5	34	
Min:	5	0	2.17	9	
Max:	20	-3	0.82	2	
Median:	8				

					0.944	0.944
u=mLn(Conc.)+b:					9.6	9.63
update for r2, EV, CV:	r2=0.944, EV=9.63 ug/L CV=0.535; max r2=0.957				0.535	0.535
	r2 u,lnConc:	0.944	u	lnConc.	Conc.	
	slope, m:	1.992	3	3.65	38	
	intercept, b:	-4.261	0	2.14	8	
	N:	32	-3	0.63	2	
	E[Conc]:	9.6	Parameter Estimates			
	SD[Conc]:	5	from LN regression			
	CV[Conc]:	0.54	update graph label			

	tPb	N: 33				max r2 0.957
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
18-Apr-94		1	0.0188	-2.079		
21-Jan-94	5	2	0.0489	-1.656	1.609	0.944
21-Jan-94	5	3	0.0789	-1.412	1.609	0.954
8-Apr-94	5	4	0.1090	-1.232	1.609	0.957
19-May-94	5	5	0.1391	-1.084	1.609	0.957
15-May-98	5.5	6	0.1692	-0.957	1.705	0.954
17-Feb-94	6	7	0.1992	-0.844	1.792	0.953
8-Mar-94	6	8	0.2293	-0.741	1.792	0.955
8-Mar-94	6	9	0.2594	-0.645	1.792	0.954
3-May-94	6	10	0.2895	-0.555	1.792	0.952
24-Jun-94	6	11	0.3195	-0.469	1.792	0.947
1-Dec-93	7	12	0.3496	-0.386	1.946	0.942
9-Jun-94	7	13	0.3797	-0.306	1.946	0.940
9-Feb-95	7	14	0.4098	-0.228	1.946	0.935
25-Apr-95	7	15	0.4398	-0.151	1.946	0.929
12-Jul-95	7	16	0.4699	-0.075	1.946	0.921
14-Aug-95	7	17	0.5000	0.000	1.946	0.913
16-Nov-94	8	18	0.5301	0.075	2.079	0.913
29-Oct-93	9	19	0.5602	0.151	2.197	0.905
14-Apr-95	9	20	0.5902	0.228	2.197	0.892
10-May-95	9	21	0.6203	0.306	2.197	0.878
25-Jul-95	10	22	0.6504	0.386	2.303	0.872
13-Sep-95	10	23	0.6805	0.469	2.303	0.857
23-Mar-94	12	24	0.7105	0.555	2.485	0.872
24-May-95	12	25	0.7406	0.645	2.485	0.848
13-Nov-97	13.2	26	0.7707	0.741	2.580	0.842
12-Jun-95	14	27	0.8008	0.844	2.639	0.819
10-Jan-95	15	28	0.8308	0.957	2.708	0.802
22-Jul-94	17	29	0.8609	1.084	2.833	0.830
22-Mar-95	17	30	0.8910	1.232	2.833	
21-Dec-93	19	31	0.9211	1.412	2.944	
21-Dec-93	19	32	0.9511	1.656	2.944	
27-Jun-95	20	33	0.9812	2.079	2.996	

update for EV, CV:

tPb		PC308			1	0.801
LN Analysis		tPb			0.63	0.626

Discharge, Q — **Q Data, EV=0.801 cfs CV=0.626**

		Q Data-based LN		
Avg:	1	u	lnQ	Q
SD:	1	3	1.3	4
CV:	0.63	0	-0.39	1
Min:	0.2	-3	-2.11	0.1
Max:	2			
Median:	1			

	0.965	0.965
	0.8	0.787
u=mLn{Q}+b:	0.94	0.937

update for r2, EV, CV: **r2=0.965, EV=0.787 cfs CV=0.937; max r2=0.977**

r2 u,lnQ:	0.965	u	lnQ	Q
slope, m:	1.260	3	1.83	6
intercept, b:	0.699	0	-0.55	1
N:	30	-3	-2.94	0.1
E[Q]:	0.8	Parameter Estimates		
SD[Q]:	1	from LN regression		
CV[Q]:	0.94	update graph label		

	Q	N: 33				max r2 0.977
	Discharge	i	i-3/8 / N+1/4	u	Ln	r2
Date	cfs	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
17-Feb-94		1	0.0188	-2.079		
9-Jun-94		2	0.0489	-1.656		
22-Jul-94		3	0.0789	-1.412		
15-May-98	0.185	4	0.1090	-1.232	-1.687	0.965
13-Nov-97	0.186	5	0.1391	-1.084	-1.682	0.963
24-Jun-94	0.25	6	0.1692	-0.957	-1.386	0.970
24-May-95	0.27	7	0.1992	-0.844	-1.309	0.970
10-May-95	0.29	8	0.2293	-0.741	-1.238	0.972
25-Apr-95	0.39	9	0.2594	-0.645	-0.942	0.977
21-Jan-94	0.41	10	0.2895	-0.555	-0.892	0.975
14-Apr-95	0.45	11	0.3195	-0.469	-0.799	0.973
13-Sep-95	0.48	12	0.3496	-0.386	-0.734	0.970
1-Dec-93	0.52	13	0.3797	-0.306	-0.654	0.967
25-Jul-95	0.52	14	0.4098	-0.228	-0.654	0.964
12-Jul-95	0.55	15	0.4398	-0.151	-0.598	0.960
27-Jun-95	0.56	16	0.4699	-0.075	-0.580	0.955
12-Jun-95	0.59	17	0.5000	0.000	-0.528	0.951
29-Oct-93	0.64	18	0.5301	0.075	-0.446	0.946
14-Aug-95	0.66	19	0.5602	0.151	-0.416	0.940
21-Dec-93	0.72	20	0.5902	0.228	-0.329	0.934
3-May-94	0.86	21	0.6203	0.306	-0.151	0.926
21-Jan-94	0.88	22	0.6504	0.386	-0.128	0.921
19-May-94	0.88	23	0.6805	0.469	-0.128	0.914
16-Nov-94	0.88	24	0.7105	0.555	-0.128	0.900
22-Mar-95	0.91	25	0.7406	0.645	-0.094	0.880
18-Apr-94	*1.02*	26	0.7707	0.741	0.020	0.857
8-Apr-94	1.08	27	0.8008	0.844	0.077	0.820
8-Mar-94	1.26	28	0.8308	0.957	0.231	0.770
23-Mar-94	1.34	29	0.8609	1.084	0.293	0.686
8-Mar-94	1.36	30	0.8910	1.232	0.307	
9-Feb-95	1.91	31	0.9211	1.412	0.647	
10-Jan-95	1.97	32	0.9511	1.656	0.678	
21-Dec-93	2	33	0.9812	2.079	0.693	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	PC308	**Date:**	20-Jun-00
Chemical:	tZn	**Analyst:**	J.MacLachlan
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	34,671	1	4,372	19	0.00	0.00	0.00
SD:	368	1	1,167	13	1.00	1.00	1.00
CV:	0.01	0.63	0.27	0.72			
Min:	34,271	0.2	2,820	3.1	-1.23	-1.33	-1.16
Max:	35,930	2	7,260	69	2.39	2.47	3.75
Median:	34,537	1	4,070	15	-0.30	-0.26	-0.29

tZn	PC308		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.00736)		update r2	0.01	0.00736	r2:	0.193	0.367
r2 Q,[COC]:	0.01	[tCd]	Q		m:	-0.0006	-0.00103
slope, m:	-209.0	4,504	0.2		b:	21	35.18
intercept, b:	4542.4	4,375	0.8				
N: 33		4,124	2				
LnConc. = mLn(Q)+b (r2=0.0166)		update r2	0.02	0.0166			
r2 lnQ,ln[COC]:	0.02	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.05	8.41	-1.69	4,513	0.2		
intercept, b:	8.33	8.34	-0.22	4,177	1		
N: 33		8.29	0.69	3,980	2		

N= 33

	Sampling Date	Q Discharge	tZn Concentration	tZn Load	Ln Q	Ln tZn Conc.	Ln tZn Load	tZn PC308 Standardized Values = (x - Avg)/SD		for graph 0
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
IDEQ	29-Oct-93	0.64	5770	19.9	-0.45	8.66	2.99	-0.32	1.20	0.10
IDEQ	1-Dec-93	0.52	5280	14.8	-0.65	8.57	2.69	-0.56	0.78	-0.28
IDEQ	21-Dec-93	0.72	6370	24.7	-0.33	8.76	3.21	-0.16	1.71	0.46
IDEQ	21-Dec-93	2	6370	68.5	0.69	8.76	4.23	2.39	1.71	3.75
IDEQ	21-Jan-94	0.88	5370	25.4	-0.13	8.59	3.24	0.16	0.86	0.51
IDEQ	21-Jan-94	0.41	5370	11.8	-0.89	8.59	2.47	-0.78	0.86	-0.50
IDEQ	17-Feb-94		4600			8.43			0.20	
IDEQ	8-Mar-94	1.26	3900	26.4	0.23	8.27	3.27	0.92	-0.40	0.59
IDEQ	8-Mar-94	1.36	3900	28.5	0.31	8.27	3.35	1.12	-0.40	0.75
IDEQ	23-Mar-94	1.34	3190	23.0	0.29	8.07	3.14	1.08	-1.01	0.33
IDEQ	8-Apr-94	1.08	3000	17.4	0.08	8.01	2.86	0.56	-1.18	-0.08
IDEQ	18-Apr-94	1.02	2860	15.7	0.02	7.96	2.75	0.44	-1.30	-0.22
IDEQ	3-May-94	0.86	3140	14.5	-0.15	8.05	2.68	0.12	-1.06	-0.30
IDEQ	19-May-94	0.88	3580	16.9	-0.13	8.18	2.83	0.16	-0.68	-0.12
IDEQ	9-Jun-94		4000			8.29			-0.32	
IDEQ	24-Jun-94	0.25	4460	6.0	-1.39	8.40	1.79	-1.10	0.08	-0.94
IDEQ	22-Jul-94		4430			8.40			0.05	
IDEQ	16-Nov-94	0.88	7260	34.4	-0.13	8.89	3.54	0.16	2.47	1.19
IDEQ	10-Jan-95	1.97	4260	45.2	0.68	8.36	3.81	2.33	-0.10	1.99
IDEQ	9-Feb-95	1.91	3260	33.5	0.65	8.09	3.51	2.21	-0.95	1.12
IDEQ	22-Mar-95	0.91	2820	13.8	-0.09	7.94	2.63	0.22	-1.33	-0.36
IDEQ	14-Apr-95	0.45	3730	9.0	-0.80	8.22	2.20	-0.70	-0.55	-0.72
IDEQ	25-Apr-95	0.39	3490	7.3	-0.94	8.16	1.99	-0.82	-0.76	-0.84
IDEQ	10-May-95	0.29	3680	5.7	-1.24	8.21	1.75	-1.02	-0.59	-0.96
IDEQ	24-May-95	0.27	3940	5.7	-1.31	8.28	1.74	-1.06	-0.37	-0.96
IDEQ	12-Jun-95	0.59	3990	12.7	-0.53	8.29	2.54	-0.42	-0.33	-0.44
IDEQ	27-Jun-95	0.56	4260	12.8	-0.58	8.36	2.55	-0.48	-0.10	-0.43
IDEQ	12-Jul-95	0.55	4130	12.2	-0.60	8.33	2.50	-0.50	-0.21	-0.48
IDEQ	25-Jul-95	0.52	4070	11.4	-0.65	8.31	2.43	-0.56	-0.26	-0.54
IDEQ	14-Aug-95	0.66	4720	16.8	-0.42	8.46	2.82	-0.28	0.30	-0.14
IDEQ	13-Sep-95	0.48	4830	12.5	-0.73	8.48	2.52	-0.64	0.39	-0.46
URS	13-Nov-97	0.186	7150	7.2	-1.68	8.87	1.97	-1.23	2.38	-0.86
URS	15-May-98	0.185	3100	3.1	-1.69	8.04	1.13	-1.23	-1.09	-1.16

tZn

Concentration over time analysis

	tZn	PC308		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.005**	**-0.00005**
	Time	**Ln[COC]**	**[COC]**		
first:	29-Oct-93	8.37	4,314		
mid:	22-Jul-94	8.36	4,259		
last:	15-May-98	8.29	3,978		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	15-May-98	0.00	1		

Load over time analysis

	tZn	PC308		Load over time		
	LnLoad=mTime+b All data r2, m:			**0.377**	**-0.00107**	up
	Time	**LnLoad**	**Load**			
first:	29-Oct-93	3.15	23			
mid:	22-Jul-94	2.87	18			
last:	15-May-98	1.38	4			
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**	
	0-Jan-00	0.00	1			
	15-May-98	0.00	1			

max r2:	0.106			max r2:	0.843	
Forward time Regression on Ln Concentration(t)				**Forward time Regression on Ln Load(t)**		
r2	**slope**	**intercept**		**r2**	**slope**	**intercept**
only on >4 data points: delete last 4 rows				only on >4 data points: delete last 4 rows		
0.005	-0.00005	10.05		0.377	-0.00107	39.88
0.001	-0.00002	9.08		0.375	-0.00109	40.49
0.000	0.00000	8.34		0.391	-0.00113	42.09
0.004	0.00004	6.91		0.379	-0.00113	41.85
0.019	0.00009	5.27		0.353	-0.00100	37.39
0.036	0.00012	4.14		0.333	-0.00097	36.46
0.064	0.00016	2.83		0.361	-0.00104	38.82
0.082	0.00018	2.02		0.361	-0.00104	38.82
0.085	0.00019	1.79		0.338	-0.00101	37.58
0.088	0.00019	1.52		0.308	-0.00095	35.70
0.071	0.00018	2.15		0.283	-0.00092	34.54
0.050	0.00015	3.18		0.272	-0.00092	34.63
0.027	0.00010	4.67		0.267	-0.00094	35.33
0.012	0.00007	5.92		0.268	-0.00098	36.65
0.006	0.00005	6.63		0.255	-0.00099	37.03
0.004	0.00004	6.78		0.255	-0.00099	37.03
0.008	0.00006	6.19		0.384	-0.00124	45.77
0.012	0.00008	5.53		0.384	-0.00124	45.77
0.091	0.00018	1.88		0.352	-0.00112	41.45
0.106	0.00020	1.22		0.353	-0.00093	35.01
0.084	0.00018	2.09		0.367	-0.00077	29.34
0.054	0.00013	3.87		0.345	-0.00074	28.05
0.043	0.00011	4.34		0.355	-0.00076	28.90
0.025	0.00009	5.35		0.407	-0.00083	31.22
0.013	0.00006	6.26		0.568	-0.00095	35.75
0.006	0.00004	6.93		0.843	-0.00112	41.64
0.001	0.00002	7.74		0.842	-0.00114	42.32
0.000	0.00001	8.22		0.837	-0.00116	43.01
0.002	-0.00003	9.47		0.838	-0.00120	44.59

update for EV, CV:

tZn		**PC308**		
LN Analysis		**tZn**		
Load		**Load Data, EV=18.6 lbs/day CV=0.718**		
Avg:	**19**	**Load Data-based LN**		
SD:	**13**	u	ln tCd Load	tCd Load
CV:	**0.72**	3	4.6	104
Min:	**3.1**	0	2.71	15
Max:	**69**	-3	0.78	2.2
Median:	**15**			
		19	18.6	
		0.72	0.718	

u=mLn{Load}+ b:

pdate for r2, EV, CV: **r2=0.965, EV=18.1lbs/day CV=0.976; max r2=0.99**

r2 u,lnLoad:	0.965	u	lnLoad	Load		
slope, m:	1.223	3	5.02	151		
intercept, b:	-3.134	0	2.56	13		
N:	30	-3	0.11	1.1		
E[Load]:	18.1	Parameter Estimates			0.965	0.965
SD[Load]:	18	from LN regression			18.1	18.1
CV[Load]:	0.98	update graph label			1.0	0.976
					max r2	
	tZn	N: 33			0.988	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
9-Jun-94		1	0.0188	-2.079		
17-Feb-94		2	0.0489	-1.656		
22-Jul-94		3	0.0789	-1.412		
15-May-98	**3.1**	4	0.1090	-1.232	1.127	0.965
24-May-95	**5.7**	5	0.1391	-1.084	1.745	0.981
10-May-95	**5.7**	6	0.1692	-0.957	1.748	0.979
24-Jun-94	**6.0**	7	0.1992	-0.844	1.792	0.978
13-Nov-97	**7.2**	8	0.2293	-0.741	1.968	0.980
25-Apr-95	**7.3**	9	0.2594	-0.645	1.991	0.980
14-Apr-95	**9.0**	10	0.2895	-0.555	2.201	0.983
25-Jul-95	**11.4**	11	0.3195	-0.469	2.432	0.981
21-Jan-94	**11.8**	12	0.3496	-0.386	2.472	0.983
12-Jul-95	**12.2**	13	0.3797	-0.306	2.503	0.985
13-Sep-95	**12.5**	14	0.4098	-0.228	2.524	0.987
12-Jun-95	**12.7**	15	0.4398	-0.151	2.539	0.988
27-Jun-95	**12.8**	16	0.4699	-0.075	2.552	0.988
22-Mar-95	**13.8**	17	0.5000	0.000	2.625	0.987
3-May-94	**14.5**	18	0.5301	0.075	2.676	0.986
1-Dec-93	**14.8**	19	0.5602	0.151	2.693	0.985
18-Apr-94	**15.7**	20	0.5902	0.228	2.753	0.984
14-Aug-95	**16.8**	21	0.6203	0.306	2.819	0.981
19-May-94	**16.9**	22	0.6504	0.386	2.830	0.979
8-Apr-94	**17.4**	23	0.6805	0.469	2.858	0.976
29-Oct-93	**19.9**	24	0.7105	0.555	2.989	0.974
23-Mar-94	**23.0**	25	0.7406	0.645	3.135	0.969
21-Dec-93	**24.7**	26	0.7707	0.741	3.206	0.970
21-Jan-94	**25.4**	27	0.8008	0.844	3.236	0.977
8-Mar-94	**26.4**	28	0.8308	0.957	3.275	0.980
8-Mar-94	**28.5**	29	0.8609	1.084	3.351	0.977
9-Feb-95	**33.5**	30	0.8910	1.232	3.512	
16-Nov-94	**34.4**	31	0.9211	1.412	3.537	
10-Jan-95	**45.2**	32	0.9511	1.656	3.810	
21-Dec-93	**68.5**	33	0.9812	2.079	4.227	

update for EV, CV:

tZn		PC308	4,372	4370
LN Analysis		tZn	0.27	0.267

Concentration

Avg:	4,372
SD:	1,167
CV:	0.27
Min:	2,820
Max:	7,260
Median:	4,070

Conc. Data, EV=4370 ug/L CV=0.267
Data-based LN

u	ln[tCd]	[tCd]
3	9.1	9280
0	8.35	4224
-3	7.56	1923

			0.971	0.971
u=mLn{Conc.}+b:			4384.0	4380
update for r2, EV, CV:	r2=0.971, EV=4380 ug/L CV=0.271; max r2=0.98		0.271	0.271
r2 u,lnConc:	0.971	u	lnConc.	Conc.
slope, m:	3.750	3	9.15	9416
intercept, b:	-31.313	0	8.35	4231
N:	33	-3	7.55	1901
E[Conc]:	4384.0	Parameter Estimates		
SD[Conc]:	1190	from LN regression		
CV[Conc]:	0.27	update graph label		

Date	tZn Concentration ug/L Ranked	N: 33 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.980 r2 forward
update and rank for new data						
22-Mar-95	2820	1	0.0188	-2.079	7.944	0.971
18-Apr-94	2860	2	0.0489	-1.656	7.959	0.979
8-Apr-94	3000	3	0.0789	-1.412	8.006	0.980
15-May-98	3100	4	0.1090	-1.232	8.039	0.980
3-May-94	3140	5	0.1391	-1.084	8.052	0.980
23-Mar-94	3190	6	0.1692	-0.957	8.068	0.978
9-Feb-95	3260	7	0.1992	-0.844	8.089	0.976
25-Apr-95	3490	8	0.2293	-0.741	8.158	0.974
19-May-94	3580	9	0.2594	-0.645	8.183	0.973
10-May-95	3680	10	0.2895	-0.555	8.211	0.972
14-Apr-95	3730	11	0.3195	-0.469	8.224	0.971
8-Mar-94	3900	12	0.3496	-0.386	8.269	0.971
8-Mar-94	3900	13	0.3797	-0.306	8.269	0.974
24-May-95	3940	14	0.4098	-0.228	8.279	0.975
12-Jun-95	3990	15	0.4398	-0.151	8.292	0.975
9-Jun-94	4000	16	0.4699	-0.075	8.294	0.974
25-Jul-95	4070	17	0.5000	0.000	8.311	0.972
12-Jul-95	4130	18	0.5301	0.075	8.326	0.969
10-Jan-95	4260	19	0.5602	0.151	8.357	0.966
27-Jun-95	4260	20	0.5902	0.228	8.357	0.962
22-Jul-94	4430	21	0.6203	0.306	8.396	0.956
24-Jun-94	4460	22	0.6504	0.386	8.403	0.950
17-Feb-94	4600	23	0.6805	0.469	8.434	0.942
14-Aug-95	4720	24	0.7105	0.555	8.460	0.932
13-Sep-95	4830	25	0.7406	0.645	8.483	0.921
1-Dec-93	5280	26	0.7707	0.741	8.572	0.914
21-Jan-94	5370	27	0.8008	0.844	8.589	0.894
21-Jan-94	5370	28	0.8308	0.957	8.589	0.861
29-Oct-93	5770	29	0.8609	1.084	8.660	0.842
21-Dec-93	6370	30	0.8910	1.232	8.759	
21-Dec-93	6370	31	0.9211	1.412	8.759	
13-Nov-97	7150	32	0.9511	1.656	8.875	
16-Nov-94	7260	33	0.9812	2.079	8.890	

update for EV, CV:

tZn		**PC308**			1	0.801
LN Analysis		**tZn**			0.63	0.626
Discharge, Q		**Q Data, EV=0.801 cfs CV=0.626**				
Avg:	**1**	**Q Data-based LN**				
SD:	**1**	u	lnQ	Q		
CV:	**0.63**	3	1.3	4		
Min:	**0.2**	0	-0.39	1		
Max:	**2**	-3	-2.11	0.1		
Median:	**1**					
					0.965	0.965
					0.8	0.787
u=mLn(Q)+b:					0.94	0.937

update for r2, EV, CV: **r2=0.965, EV=0.787 cfs CV=0.937; max r2=0.98**

r2 u,lnQ:	0.965	u	lnQ	Q
slope, m:	1.260	3	1.83	6
intercept, b:	0.699	0	-0.55	1
N:	30	-3	-2.94	0.1
E[Q]:	0.8	Parameter Estimates		
SD[Q]:	1	from LN regression		
CV[Q]:	0.94	update graph label		

N: 33

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.977 r2 forward
update and rank for new data						
9-Jun-94		1	0.0188	-2.079		
17-Feb-94		2	0.0489	-1.656		
22-Jul-94		3	0.0789	-1.412		
15-May-98	0.185	4	0.1090	-1.232	-1.687	0.965
13-Nov-97	0.186	5	0.1391	-1.084	-1.682	0.963
24-Jun-94	0.25	6	0.1692	-0.957	-1.386	0.970
24-May-95	0.27	7	0.1992	-0.844	-1.309	0.970
10-May-95	0.29	8	0.2293	-0.741	-1.238	0.972
25-Apr-95	0.39	9	0.2594	-0.645	-0.942	0.977
21-Jan-94	0.41	10	0.2895	-0.555	-0.892	0.975
14-Apr-95	0.45	11	0.3195	-0.469	-0.799	0.973
13-Sep-95	0.48	12	0.3496	-0.386	-0.734	0.970
1-Dec-93	0.52	13	0.3797	-0.306	-0.654	0.967
25-Jul-95	0.52	14	0.4098	-0.228	-0.654	0.964
12-Jul-95	0.55	15	0.4398	-0.151	-0.598	0.960
27-Jun-95	0.56	16	0.4699	-0.075	-0.580	0.955
12-Jun-95	0.59	17	0.5000	0.000	-0.528	0.951
29-Oct-93	0.64	18	0.5301	0.075	-0.446	0.946
14-Aug-95	0.66	19	0.5602	0.151	-0.416	0.940
21-Dec-93	0.72	20	0.5902	0.228	-0.329	0.934
3-May-94	0.86	21	0.6203	0.306	-0.151	0.926
16-Nov-94	0.88	22	0.6504	0.386	-0.128	0.921
19-May-94	0.88	23	0.6805	0.469	-0.128	0.914
21-Jan-94	0.88	24	0.7105	0.555	-0.128	0.900
22-Mar-95	0.91	25	0.7406	0.645	-0.094	0.880
18-Apr-94	1.02	26	0.7707	0.741	0.020	0.857
8-Apr-94	1.08	27	0.8008	0.844	0.077	0.820
8-Mar-94	1.26	28	0.8308	0.957	0.231	0.770
23-Mar-94	1.34	29	0.8609	1.084	0.293	0.686
8-Mar-94	1.36	30	0.8910	1.232	0.307	
9-Feb-95	1.91	31	0.9211	1.412	0.647	
10-Jan-95	1.97	32	0.9511	1.656	0.678	
21-Dec-93	2	33	0.9812	2.079	0.693	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: PR14 **Date:** 3-Jun-00
Chemical: dCd **Analyst:** J.Johnston
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load				
Avg:	36,230	365	1	2			0.00	0.00	0.00
SD:	129	378	0	2			1.00	1.00	1.00
CV:	0.00	1.03	0.79	0.90					
Min:	35,921	17	0	0.2			-0.92	-1.00	-1.00
Max:	36,411	1,170	1	4			2.13	1.00	1.00
Median:	36,257	184	1	2			-0.48	0.00	0.00

dCd PR14 : Concentration v. Discharge, Q **Q = mTime +b** **LnQ = mTime +b**

Conc. = mQ+b (r2=1)		update r2	**1.00**	1	r2:	0.044	0.012
r2 Q,[COC]:	1.00	[dCd]	Q		m:	0.6138	0.00112
slope, m:	0.0	-1	17.0		b:	-21872	-35.56
intercept, b:	-0.6	0	365.4				
N: 2		2	1170				
LnConc. = mLn{Q}+b (r2=1)		update r2	1.00	1			
r2 lnQ,ln[COC]:	1.00	ln[dCd]	ln Q	[dCd]	Q		
slope, m:	2.53	-9.25	2.83	0	17		
intercept, b:	-16.42	-1.49	5.90	0	365		
N: 2		1.45	7.06	4	1,170		

N= 14

	Sampling Date	Q Discharge	dCd Concentration	dCd Load	Ln Q	Ln dCd Conc.	Ln dCd Load	dCd PR14 Standardized Values = (x - Avg)/SD	for graph 0	
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
URS	6-May-98	285	0.12	0.2	5.65	-2.12	-1.69	-0.21	-1.00	-1.00
USGS	20-Oct-98	17			2.83			-0.92		
USGS	18-Nov-98	52			3.95			-0.83		
USGS	10-Dec-98	72			4.28			-0.78		
USGS	29-Dec-98	113			4.73			-0.67		
USGS	25-Feb-99	243			5.49			-0.32		
USGS	24-Mar-99	803			6.69			1.16		
USGS	21-Apr-99	984			6.89			1.64		
USGS	4-May-99	520			6.25			0.41		
USGS	24-May-99	1170			7.06			2.13		
USGS	15-Jun-99	659	1	3.5	6.49	0.00	1.27	0.78	1.00	1.00
USGS	13-Jul-99	124			4.82			-0.64		
USGS	12-Aug-99	46			3.83			-0.85		
USGS	8-Sep-99	28			3.33			-0.89		

dCd

Concentration over time analysis r2 Slope, m

	dCd	PR14		Concentration over time	
	LnConc.=mTime+b All data r2, m:			1.000	0.00524
	Time	Ln[COC]	[COC]		
first:	6-May-98	-2.12	0		
mid:	7-Apr-99	-0.36	1		
last:	8-Sep-99	0.44	2		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

Load over time analysis

	dCd	PR14		Load over time	
	LnLoad=mTime+b All data r2, m:			1.000	0.00730
	Time	LnLoad	Load		
first:	6-May-98	-1.69	0		
mid:	7-Apr-99	0.76	2		
last:	8-Sep-99	1.89	7		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

max r2: 1.000

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
1.000	0.00524	-190.17

max r2: 1.000

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
1.000	0.00730	-264.09

update for EV, CV:

dCd **PR14**

LN Analysis **dCd**

Load **Load Data, EV=1.86 lbs/day CV=0.901**

Load Data-based LN

		u	ln dCd Load	dCd Load
Avg:	**2**	3	2.6	14
SD:	**2**	0	0.33	1
CV:	**0.90**	-3	-1.99	0.1
Min:	**0.2**			
Max:	**4**			
Median:	**2**			

2	1.86
0.90	0.901

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=1, EV=0.874lbs/day CV=2.34; max r2=0**

r2 u,lnLoad:	1.000	u	lnLoad	Load
slope, m:	0.731	3	3.03	21
intercept, b:	0.782	0	-1.07	0
N:	2	-3	-5.17	0.0
E[Load]:	0.9	Parameter Estimates		
SD[Load]:	2	from LN regression		
CV[Load]:	2.34	update graph label		

		1.000
		0.9
		2.3

		1
		0.874
		2.34

max r2
0.000
r2
forward

N: 14

Date	dCd Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis
update and rank for new data					
		1	0.0439	-1.708	
		2	0.1140	-1.205	
		3	0.1842	-0.899	
		4	0.2544	-0.661	
6-May-98	0.2	5	0.3246	-0.455	-1.693
10-Dec-98		6	0.3947	-0.267	
29-Dec-98		7	0.4649	-0.088	
13-Jul-99		8	0.5351	0.088	
25-Feb-99		9	0.6053	0.267	
4-May-99		10	0.6754	0.455	
24-Mar-99		11	0.7456	0.661	
21-Apr-99		12	0.8158	0.899	
24-May-99		13	0.8860	1.205	
15-Jun-99	3.5	14	0.9561	1.708	1.266

update for EV, CV:

dCd		PR14		1	0.56
LN Analysis		dCd		0.79	0.786

Concentration — Conc. Data, EV=0.56 ug/L CV=0.786

		Data-based LN		
Avg:	1	u	ln[dCd]	[dCd]
SD:	0	3	1.3	4
CV:	0.79	3	-0.82	0
Min:	0	0	-2.90	0
Max:	1	-3		
Median:	1			

					1.000	1
u=mLn(Conc.)+b:					0.4	0.42
update for r2, EV, CV:	r2=1, EV=0.42 ug/L CV=0.686; max r2=1.0				0.686	0.686
	r2 u,lnConc:	1.000	u	lnConc.	Conc.	
	slope, m:	1.611	3	0.80	2	
	intercept, b:	1.708	0	-1.06	0	
	N: 2		-3	-2.92	0	
	E[Conc]:	0.4	Parameter Estimates			
	SD[Conc]:	0	from LN regression			
	CV[Conc]:	0.69	update graph label			

N: 14

Date	dCd Concentration ug/L Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 1.000 r2 forward
updata and rank for new data						
8-Jan-00	0.12	1	0.0439	-1.708	-2.120	1.000
20-Oct-98		2	0.1140	-1.205		
18-Nov-98		3	0.1842	-0.899		
10-Dec-98		4	0.2544	-0.661		
29-Dec-98		5	0.3246	-0.455		
25-Feb-99		6	0.3947	-0.267		
24-Mar-99		7	0.4649	-0.088		
21-Apr-99		8	0.5351	0.088		
4-May-99		9	0.6053	0.267		
24-May-99		10	0.6754	0.455		
13-Jul-99		11	0.7456	0.661		
12-Aug-99		12	0.8158	0.899		
8-Sep-99		13	0.8860	1.205		
15-Jun-99	1	14	0.9561	1.708	0.000	

update for EV, CV:

dCd		**PR14**			365	365
LN Analysis		**dCd**			1.03	1.03
Discharge, Q		**Q Data, EV=365 cfs CV=1.03**				
Avg:	**365**	**Q Data-based LN**				
SD:	**378**	u	lnQ	Q		
CV:	**1.03**	3	8.1	3278		
Min:	**17**	0	5.54	254		
Max:	**1,170**	-3	2.98	20		
Median:	**184**					
					0.963	0.963
					534.0	534
	u=mLn(Q)+b:				2.88	2.88

update for r2, EV, CV: **r2=0.963, EV=534 cfs CV=2.88; max r2=0.963**

r2 u,lnQ:	0.963	u	lnQ	Q
slope, m:	0.669	3	9.65	15464
intercept, b:	-3.457	0	5.16	175
N:	14	-3	0.68	2
E[Q]:	534.0	Parameter Estimates		
SD[Q]:	1540	from LN regression		
CV[Q]:	2.88	update graph label		

Date	Q Discharge cfs Ranked	i rank (N: 14)	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.963 r2 forward
update and rank for new data						
20-Oct-98	17	1	0.0439	-1.708	2.833	0.963
8-Sep-99	28	2	0.1140	-1.205	3.332	0.953
12-Aug-99	46	3	0.1842	-0.899	3.829	0.939
18-Nov-98	52	4	0.2544	-0.661	3.951	0.924
10-Dec-98	72	5	0.3246	-0.455	4.277	0.906
29-Dec-98	113	6	0.3947	-0.267	4.727	0.887
13-Jul-99	124	7	0.4649	-0.088	4.820	0.857
25-Feb-99	243	8	0.5351	0.088	5.493	0.872
6-May-98	285	9	0.6053	0.267	5.652	0.837
4-May-99	520	10	0.6754	0.455	6.254	0.944
15-Jun-99	659	11	0.7456	0.661	6.491	
24-Mar-99	803	12	0.8158	0.899	6.688	
21-Apr-99	984	13	0.8860	1.205	6.892	
24-May-99	1170	14	0.9561	1.708	7.065	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	**PR14**	**Date:**	**3-Jun-00**
Chemical:	**dPb**	**Analyst:**	**J.Johnston**
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,238	390	1	4	0.00	#DIV/0!	0.00
SD:	130	381	0	1	1.00	#DIV/0!	1.00
CV:	0.00	0.98	0.00	0.41			
Min:	35,921	17	1	1.3	-0.98	0.00	-1.57
Max:	36,411	1,170	1	5	2.05	0.00	1.14
Median:	36,271	243	1	4	-0.38	#NUM!	0.21

dPb	**PR14**		**: Concentration v. Discharge, Q**			**Q = mTime +b**		**LnQ = mTime +b**
#DIV/0!		update r2	**#DIV/0!**	#DIV/0!		r2:	0.027	0.003
r2 Q,[COC]:	#DIV/0!	[dPb]	Q			m:	0.4789	0.00052
slope, m:	0.0	1	17.0			b:	-16963	-13.72
intercept, b:	1.0	1	389.5					
N: 4		1	1170					
#DIV/0!		update r2		#DIV/0!	#DIV/0!			
r2 lnQ,ln[COC]:	#DIV/0!	ln[dPb]	ln Q	[dPb]	Q			
slope, m:	0.00	0.00	2.83	1	17			
intercept, b:	0.00	0.00	5.96	1	390			
N: 4		0.00	7.06	1	1,170			

								dPb	for graph 0	
N= 13								PR14		
	Sampling Date	**Q Discharge**	**dPb Concentration**	**dPb Load**	**Ln Q**	**Ln dPb Conc.**	**Ln dPb Load**	**Standardized Values = (x - Avg)/SD**		
update for new data		**cfs**	**ug/L**	**lbs/day**				**Q**	**Conc**	**Load**
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
URS	6-May-98	285			5.65			-0.27		
USGS	20-Oct-98	17			2.83			-0.98		
USGS	10-Dec-98	72			4.28			-0.83		
USGS	29-Dec-98	113			4.73			-0.73		
USGS	25-Feb-99	243	1	1.3	5.49	0.00	0.27	-0.38		-1.57
USGS	24-Mar-99	803	1	4.3	6.69	0.00	1.46	1.08		0.48
USGS	21-Apr-99	984	1	5.3	6.89	0.00	1.67	1.56		1.14
USGS	4-May-99	520			6.25			0.34		
USGS	24-May-99	1170			7.06			2.05		
USGS	15-Jun-99	659	1	3.5	6.49	0.00	1.27	0.71		-0.05
USGS	13-Jul-99	124			4.82			-0.70		
USGS	12-Aug-99	46			3.83			-0.90		
USGS	8-Sep-99	28			3.33			-0.95		

dPb

Concentration over time analysis

	dPb	PR14		r2	Slope, m
	LnConc.=mTime+b All data r2, m:			**#DIV/0!**	**0.00000**
	Time	**Ln[COC]**	**[COC]**		
first:	6-May-98	0.00	1		
mid:	21-Apr-99	0.00	1		
last:	8-Sep-99	0.00	1		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

Load over time analysis

	dPb	PR14		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.282**	**0.00701**
	Time	**LnLoad**	**Load**		
first:	6-May-98	-1.24	0		
mid:	21-Apr-99	1.21	3		
last:	8-Sep-99	2.20	9		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

max r2: #DIV/0!

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00

max r2: 1.000

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.282	0.00701	-253.11
0.282	0.00701	-253.11
0.282	0.00701	-253.11
0.282	0.00701	-253.11
0.282	0.00701	-253.11
0.416	-0.00306	112.57
1.000	-0.00729	266.05

update for EV, CV:

dPb		**PR14**		
LN Analysis		**dPb**		
Load		**Load Data, EV=3.62 lbs/day CV=0.407**		
Avg:	**4**	**Load Data-based LN**		
SD:	**1**	u	ln dPb Load	dPb Load
CV:	**0.41**	3	2.4	11
Min:	**1.3**	0	1.21	3
Max:	**5**	-3	0.04	1.0
Median:	**4**			
		4	3.62	
		0.41	0.407	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.903, EV=2.01lbs/day CV=1.43; max r2=1.0**

r2 u,lnLoad:	0.903	u	lnLoad	Load		
slope, m:	0.949	3	3.31	27		
intercept, b:	-0.139	0	0.15	1		
N:	4	-3	-3.01	0.0		
E[Load]:	2.0	Parameter Estimates			0.903	0.903
SD[Load]:	3	from LN regression			2.0	2.01
CV[Load]:	1.43	update graph label			1.4	1.43
					max r2	
	dPb	N: 13			1.000	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
20-Oct-98		1	0.0472	-1.673		
8-Sep-99		2	0.1226	-1.162		
12-Aug-99		3	0.1981	-0.848		
10-Dec-98		4	0.2736	-0.602		
29-Dec-98		5	0.3491	-0.388		
13-Jul-99		6	0.4245	-0.190		
6-May-98		7	0.5000	0.000		
25-Feb-99	1.3	8	0.5755	0.190	0.268	0.903
4-May-99		9	0.6509	0.388		
24-May-99		10	0.7264	0.602		
15-Jun-99	3.5	11	0.8019	0.848	1.266	0.983
24-Mar-99	4.3	12	0.8774	1.162	1.463	1.000
21-Apr-99	5.3	13	0.9528	1.673	1.667	

update for EV, CV:

dPb		PR14		1	1
LN Analysis		dPb		0.00	0

Concentration

Conc. Data, EV=1 ug/L CV=0

		Data-based LN		
Avg:	1	u	ln[dPb]	[dPb]
SD:	0	3	0.0	1
CV:	0.00	0	0.00	1
Min:	1	-3	0.00	1
Max:	1			
Median:	1			

u=mLn(Conc.)+b:

update for r2, EV, CV:

	#DIV/0!				#DIV/0! #DIV/0!
	#DIV/0!				#DIV/0! #DIV/0!
	#DIV/0!				#DIV/0! #DIV/0!
r2 u,lnConc:	#DIV/0!	u	lnConc.	Conc.	
slope, m:	#DIV/0!	3	#DIV/0!	#DIV/0!	
intercept, b:	#DIV/0!	0	#DIV/0!	#DIV/0!	
N: 0		-3	#DIV/0!	#DIV/0!	
E[Conc]:	#DIV/0!	Parameter Estimates			
SD[Conc]:	#DIV/0!	from LN regression			
CV[Conc]:	#DIV/0!	update graph label			

N: 13

Date	dPb Concentration ug/L Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.000 r2 forward
update and rank for new data						
6-May-98		1	0.0472	-1.673		
20-Oct-98		2	0.1226	-1.162		
10-Dec-98		3	0.1981	-0.848		
29-Dec-98		4	0.2736	-0.602		
4-May-99		5	0.3491	-0.388		
24-May-99		6	0.4245	-0.190		
13-Jul-99		7	0.5000	0.000		
12-Aug-99		8	0.5755	0.190		
8-Sep-99		9	0.6509	0.388		
25-Feb-99	1	10	0.7264	0.602		
24-Mar-99	1	11	0.8019	0.848		
21-Apr-99	1	12	0.8774	1.162		
15-Jun-99	1	13	0.9528	1.673		

update for EV, CV:

dPb		**PR14**			390	390
LN Analysis		**dPb**			0.98	0.979
Discharge, Q		**Q Data, EV=390 cfs CV=0.979**				
Avg:	**390**	**Q Data-based LN**				
SD:	**381**	**u**	lnQ	Q		
CV:	**0.98**	3	8.1	3257		
Min:	**17**	0	5.63	278		
Max:	**1,170**	-3	3.17	24		
Median:	**243**					
					0.960	0.96
					602.1	602
	u=mLn{Q}+b:				2.97	2.97

update for r2, EV, CV: **r2=0.96, EV=602 cfs CV=2.97; max r2=1.0**

r2 u,lnQ:	0.960	u	lnQ	Q
slope, m:	0.662	3	9.79	17903
intercept, b:	-3.478	0	5.26	192
N:	13	-3	0.72	2
E[Q]:	602.1	Parameter Estimates		
SD[Q]:	1789	from LN regression		
CV[Q]:	2.97	update graph label		

N: 13

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 1.000 r2 forward
update and rank for new data						
20-Oct-98	17	1	0.0472	-1.673	2.833	0.960
8-Sep-99	28	2	0.1226	-1.162	3.332	0.945
12-Aug-99	46	3	0.1981	-0.848	3.829	0.930
10-Dec-98	72	4	0.2736	-0.602	4.277	0.914
29-Dec-98	113	5	0.3491	-0.388	4.727	0.894
13-Jul-99	124	6	0.4245	-0.190	4.820	0.864
25-Feb-99	243	7	0.5000	0.000	5.493	0.876
6-May-98	285	8	0.5755	0.190	5.652	0.841
4-May-99	520	9	0.6509	0.388	6.254	0.946
15-Jun-99	659	10	0.7264	0.602	6.491	0.960
24-Mar-99	803	11	0.8019	0.848	6.688	0.967
21-Apr-99	984	12	0.8774	1.162	6.892	1.000
24-May-99	1170	13	0.9528	1.673	7.065	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.	see comment
Station: PR14	**Date:** 14-Jul-00
Chemical: dZn	**Analyst:** J.Johnston
Notes:	
Input Discharge and Concentration Data below (in red)	

	Date	Discharge	Concentration	Load			
Avg:	36,230	365	31	58	0.00	0.00	0.00
SD:	129	378	9	61	1.00	1.00	1.00
CV:	0.00	1.03	0.30	1.04			
Min:	35,921	17	24	4.1	-0.92	-0.74	-0.89
Max:	36,411	1,170	62	180	2.13	3.38	2.00
Median:	36,257	184	29	27	-0.48	-0.20	-0.52

dZn PR14			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.0133)		update r2	**0.01**	0.0133	r2:	0.044	0.012
r2 Q,[COC]:	0.01	[dZn]	Q		m:	0.6138	0.00112
slope, m:	0.0	32	17.0		b:	-21872	-35.56
intercept, b:	31.9	31	365.4				
N:	14	29	1170				
LnConc. = mLn(Q)+b (r2=0.0493)		update r2	0.05	0.0493			
r2 lnQ,ln[COC]:	0.05	ln[dZn]	ln Q	[dZn]	Q		
slope, m:	-0.04	3.49	2.83	33	17		
intercept, b:	3.59	3.37	5.90	29	365		
N:	14	3.32	7.06	28	1,170		

N= 14								dZn	for graph 0	
	Sampling Date	Q Discharge	dZn Concentration	dZn Load	Ln Q	Ln dZn Conc.	Ln dZn Load	PR14 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
URS	6-May-98	285	30.7	47.1	5.65	3.42	3.85	-0.21	-0.01	-0.19
USGS	20-Oct-98	17	62	5.7	2.83	4.13	1.74	-0.92	3.38	-0.87
USGS	18-Nov-98	52	25	7.0	3.95	3.22	1.95	-0.83	-0.63	-0.85
USGS	10-Dec-98	72	28	10.8	4.28	3.33	2.38	-0.78	-0.51	-0.78
USGS	29-Dec-98	113	34	20.7	4.73	3.53	3.03	-0.67	0.34	-0.62
USGS	25-Feb-99	243	25	32.7	5.49	3.22	3.49	-0.32	-0.63	-0.42
USGS	24-Mar-99	803	31	133.9	6.69	3.43	4.90	1.16	0.02	1.24
USGS	21-Apr-99	984	34	180.0	6.89	3.53	5.19	1.64	0.34	2.00
USGS	4-May-99	520	30	83.9	6.25	3.40	4.43	0.41	-0.09	0.42
USGS	24-May-99	1170	26	163.7	7.06	3.26	5.10	2.13	-0.53	1.73
USGS	15-Jun-99	659	30	106.4	6.49	3.40	4.67	0.78	-0.09	0.79
USGS	13-Jul-99	124	25	16.7	4.82	3.22	2.81	-0.64	-0.63	-0.69
USGS	12-Aug-99	46	24	5.9	3.83	3.18	1.78	-0.85	-0.74	-0.86
USGS	8-Sep-99	28	27	4.1	3.33	3.30	1.40	-0.89	-0.42	-0.89

dZn

Concentration over time analysis

	dZn	PR14		r2	Slope, m
	LnConc.=mTime+b All data r2, m:			**0.168**	**-0.00073**
	Time	**Ln[COC]**	**[COC]**		
first:	6-May-98	3.62	37		
mid:	7-Apr-99	3.38	29		
last:	8-Sep-99	3.26	26		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

Load over time analysis

	dZn	PR14		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.001**	**0.00039**
	Time	**LnLoad**	**Load**		
first:	6-May-98	3.22	25		
mid:	7-Apr-99	3.35	28		
last:	8-Sep-99	3.41	30		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

max r2: 0.531

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.168	-0.00073	29.92
0.269	-0.00124	48.28
0.057	-0.00030	14.34
0.215	-0.00065	26.87
0.327	-0.00095	37.78
0.152	-0.00072	29.43
0.531	-0.00151	58.23
0.489	-0.00165	63.24
0.293	-0.00104	41.13
0.088	-0.00059	24.68

max r2: 0.953

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.001	0.00039	-10.86
0.022	0.00201	-69.53
0.000	-0.00017	9.64
0.047	-0.00340	127.06
0.210	-0.00818	300.53
0.524	-0.01626	594.04
0.832	-0.02441	890.42
0.889	-0.02897	1056.16
0.871	-0.03047	1110.92
0.953	-0.03782	1378.20

update for EV, CV:

dZn		**PR14**		
LN Analysis		**dZn**		
Load		**Load Data, EV=58.5 lbs/day CV=1.04**		
Avg:	**58**	**Load Data-based LN**		
SD:	**61**	u	ln dZn Load	dZn Load
CV:	**1.04**	3	6.3	529
Min:	**4.1**	0	3.70	40
Max:	**180**	-3	1.13	3.1
Median:	**27**			
		58	58.5	
		1.04	1.04	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.94, EV=83.6lbs/day CV=2.8; max r2=0.94**

r2 u,lnLoad:	0.940	u	lnLoad	Load			
slope, m:	0.677	3	7.77	2357			
intercept, b:	-2.261	0	3.34	28			
N: 14		-3	-1.09	0.3			
E[Load]:	83.6	Parameter Estimates			0.940	0.94	
SD[Load]:	234	from LN regression			83.6	83.6	
CV[Load]:	2.80	update graph label			2.8	2.8	
					max r2		
dZn		N: 14			0.942		
Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**		
Date	**lbs/day Ranked**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward	
update and rank for new data							
8-Sep-99	**4.1**	1	0.0439	-1.708	1.403	0.940	
20-Oct-98	**5.7**	2	0.1140	-1.205	1.735	0.942	
12-Aug-99	**5.9**	3	0.1842	-0.899	1.782	0.935	
18-Nov-98	**7.0**	4	0.2544	-0.661	1.945	0.917	
10-Dec-98	**10.8**	5	0.3246	-0.455	2.384	0.901	
13-Jul-99	**16.7**	6	0.3947	-0.267	2.814	0.880	
29-Dec-98	**20.7**	7	0.4649	-0.088	3.029	0.849	
25-Feb-99	**32.7**	8	0.5351	0.088	3.487	0.832	
6-May-98	**47.1**	9	0.6053	0.267	3.852	0.813	
4-May-99	**83.9**	10	0.6754	0.455	4.430	0.894	
15-Jun-99	**106.4**	11	0.7456	0.661	4.667		
24-Mar-99	**133.9**	12	0.8158	0.899	4.897		
24-May-99	**163.7**	13	0.8860	1.205	5.098		
21-Apr-99	**180.0**	14	0.9561	1.708	5.193		

update for EV, CV:

dZn		**PR14**		31	30.8
LN Analysis		**dZn**		0.30	0.299
Concentration		**Conc. Data, EV=30.8 ug/L CV=0.299**			
Avg:	31	**Data-based LN**			
SD:	9	u	ln[dZn]	[dZn]	
CV:	0.30	3	4.3	71	
Min:	24	0	3.39	30	
Max:	62	-3	2.51	12	
Median:	29				

					0.722	0.722
u=mLn{Conc.}+b:					31.2	31.2
update for r2, EV, CV:	**r2=0.722, EV=31.2 ug/L CV=0.302; max r2=0.474**				0.302	0.302
	r2 u,lnConc:	0.722	u	lnConc.	Conc.	
	slope, m:	3.380	3	4.28	73	
	intercept, b:	-11.482	0	3.40	30	
	N:	14	-3	2.51	12	
	E[Conc]:	31.2	Parameter Estimates			
	SD[Conc]:	9	from LN regression			
	CV[Conc]:	0.30	update graph label			

	dZn	N: 14				max r2 0.802
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
12-Aug-99	24	1	0.0439	-1.708	3.178	0.722
18-Nov-98	25	2	0.1140	-1.205	3.219	0.746
25-Feb-99	25	3	0.1842	-0.899	3.219	0.766
13-Jul-99	25	4	0.2544	-0.661	3.219	0.771
24-May-99	26	5	0.3246	-0.455	3.258	0.758
8-Sep-99	27	6	0.3947	-0.267	3.296	0.746
10-Dec-98	28	7	0.4649	-0.088	3.332	0.737
4-May-99	30	8	0.5351	0.088	3.401	0.733
15-Jun-99	30	9	0.6053	0.267	3.401	0.772
6-May-98	30.7	10	0.6754	0.455	3.424	0.802
24-Mar-99	31	11	0.7456	0.661	3.434	
29-Dec-98	34	12	0.8158	0.899	3.526	
21-Apr-99	34	13	0.8860	1.205	3.526	
20-Oct-98	62	14	0.9561	1.708	4.127	

update for EV, CV:

dZn		**PR14**			365	365
LN Analysis		**dZn**			1.03	1.03
Discharge, Q		**Q Data, EV=365 cfs CV=1.03**				
Avg:	**365**	**Q Data-based LN**				
SD:	**378**	u	lnQ	Q		
CV:	**1.03**	3	8.1	3278		
Min:	**17**	0	5.54	254		
Max:	**1,170**	-3	2.98	20		
Median:	**184**					

	0.963	0.963
	534.0	534
u=mLn(Q)+b:	2.88	2.88

update for r2, EV, CV: **r2=0.963, EV=534 cfs CV=2.88; max r2=0.96**

r2 u,lnQ:	0.963	u	lnQ	Q
slope, m:	0.669	3	9.65	15464
intercept, b:	-3.457	0	5.16	175
N:	14	-3	0.68	2
E[Q]:	534.0	Parameter Estimates		
SD[Q]:	1540	from LN regression		
CV[Q]:	2.88	update graph label		

N: 14

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.963 r2 forward
update and rank for new data						
20-Oct-98	17	1	0.0439	-1.708	2.833	0.963
8-Sep-99	28	2	0.1140	-1.205	3.332	0.953
12-Aug-99	46	3	0.1842	-0.899	3.829	0.939
18-Nov-98	52	4	0.2544	-0.661	3.951	0.924
10-Dec-98	72	5	0.3246	-0.455	4.277	0.906
29-Dec-98	113	6	0.3947	-0.267	4.727	0.887
13-Jul-99	124	7	0.4649	-0.088	4.820	0.857
25-Feb-99	243	8	0.5351	0.088	5.493	0.872
6-May-98	285	9	0.6053	0.267	5.652	0.837
4-May-99	520	10	0.6754	0.455	6.254	0.944
15-Jun-99	659	11	0.7456	0.661	6.491	
24-Mar-99	803	12	0.8158	0.899	6.688	
21-Apr-99	984	13	0.8860	1.205	6.892	
24-May-99	1170	14	0.9561	1.708	7.065	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: PR14 **Date:** 3-Jun-00
Chemical: tCd **Analyst:** J.Johnston
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,209	252	0	0	0.00	0.00	0.00
SD:	139	316	0	0	1.00	1.00	1.00
CV:	0.00	1.26	1.13	0.82			
Min:	35,921	17	0	0.0	-0.74	-0.54	-1.03
Max:	36,411	984	1	0	2.32	2.00	1.42
Median:	36,216	113	0	0	-0.44	-0.51	-0.40

tCd PR14			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.0704)		update r2	0.07	0.0704	r2:	0.002	0.007
r2 Q,[COC]:	0.07	[tCd]	Q		m:	0.1005	-0.00073
slope, m:	0.0	0	17.0		b:	-3389	31.17
intercept, b:	0.4	0	251.5				
N:	5	-1	984				
LnConc. = mLn(Q)+b (r2=0.0238)			update r2	0.02	0.0238		
r2 lnQ,ln[COC]:	0.02	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.15	-1.39	2.83	0	17		
intercept, b:	-0.96	-1.80	5.53	0	252		
N:	5	-2.01	6.89	0	984		

N= 11

	Sampling Date	Q Discharge	tCd Concentration	tCd Load	Ln Q	Ln tCd Conc.	Ln tCd Load	tCd PR14 Standardized Values = (x - Avg)/SD		for graph 0
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
URS	6-May-98	285	0.15	0.2	5.65	-1.90	-1.47	0.11	-0.45	0.95
USGS	20-Oct-98	17			2.83			-0.74		
USGS	18-Nov-98	52	1	0.3	3.95	0.00	-1.27	-0.63	2.00	1.42
USGS	10-Dec-98	72			4.28			-0.57		
USGS	29-Dec-98	113			4.73			-0.44		
USGS	25-Feb-99	243			5.49			-0.03		
USGS	24-Mar-99	803			6.69			1.75		
USGS	21-Apr-99	984			6.89			2.32		
USGS	13-Jul-99	124	0.13	0.1	4.82	-2.04	-2.45	-0.40	-0.51	-0.40
USGS	12-Aug-99	46	0.12	0.0	3.83	-2.12	-3.52	-0.65	-0.54	-0.94
USGS	8-Sep-99	28	0.13	0.0	3.33	-2.04	-3.93	-0.71	-0.51	-1.03

tCd

Concentration over time analysis

	tCd	PR14		r2	Slope, m
	LnConc.=mTime+b All data r2, m:			**0.154**	**-0.00168**
	Time	**Ln[COC]**	**[COC]**		
first:	6-May-98	-1.09	0		
mid:	25-Feb-99	-1.58	0		
last:	8-Sep-99	-1.91	0		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

Load over time analysis

	tCd	PR14			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.736**	**-0.00481**
	Time	**LnLoad**	**Load**		
first:	6-May-98	-1.01	0		
mid:	25-Feb-99	-2.42	0		
last:	8-Sep-99	-3.36	0		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

	max r2:	0.969		max r2:	0.953	
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.154	-0.00168	59.37	0.736	-0.00481	171.79
	0.969	-0.00754	272.30	0.858	-0.00817	293.76
	0.969	-0.00754	272.30	0.858	-0.00817	293.76
	0.001	-0.00005	-0.28	0.953	-0.02628	952.99
	0.001	-0.00005	-0.28	0.953	-0.02628	952.99
	0.001	-0.00005	-0.28	0.953	-0.02628	952.99
	0.001	-0.00005	-0.28	0.953	-0.02628	952.99

update for EV, CV:

tCd		**PR14**		
LN Analysis		**tCd**		
Load		**Load Data, EV=0.129 lbs/day CV=0.823**		
Avg:	**0**	**Load Data-based LN**		
SD:	**0**	u	ln tCd Load	tCd Load
CV:	**0.82**	3	-0.1	1
Min:	**0.0**	0	-2.31	0
Max:	**0**	-3	-4.46	0.0
Median:	**0**			
		0	0.129	
		0.82	0.823	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.866, EV=0.122lbs/day CV=1.02; max r2=0.87**

r2 u,lnLoad:	0.866	u	lnLoad	Load		
slope, m:	-1.181	3	-5.00	0		
intercept, b:	-2.908	0	-2.46	0		
N:	4	-3	0.08	1.1		
E[Load]:	0.1	Parameter Estimates			0.866	0.866
SD[Load]:	0	from LN regression			0.1	0.122
CV[Load]:	1.02	update graph label			1.0	1.02
					max r2	
	tCd	**N: 11**			0.866	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day Ranked**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
update and rank for new data						
6-May-98	0.2	1	0.0556	-1.593	-1.470	0.866
		2	0.1444	-1.061		
18-Nov-98	0.3	3	0.2333	-0.728		
		4	0.3222	-0.461		
		5	0.4111	-0.225		
		6	0.5000	0.000		
		7	0.5889	0.225		
		8	0.6778	0.461		
13-Jul-99	0.1	9	0.7667	0.728	-2.445	
12-Aug-99	0.0	10	0.8556	1.061	-3.517	
8-Sep-99	0.0	11	0.9444	1.593	-3.933	

		update for EV, CV:			
tCd		PR14		0	0.306
LN Analysis		tCd		1.13	1.13
Concentration		Conc. Data, EV=0.306 ug/L CV=1.13			
Avg:	0	Data-based LN			
SD:	0	u	ln[tCd]	[tCd]	
CV:	1.13	3	1.1	3	
Min:	0	0	-1.60	0	
Max:	1	-3	-4.33	0	
Median:	0				

					0.757	0.757
u=mLn(Conc.)+b:					0.1	0.137
update for r2, EV, CV:	r2=0.757, EV=0.137 ug/L CV=0.076; max r2=1.0				0.076	0.076
	r2 u,lnConc:	0.757	u	lnConc.	Conc.	
	slope, m:	-13.174	3	-2.22	0	
	intercept, b:	-26.222	0	-1.99	0	
	N:	4	-3	-1.76	0	
	E[Conc]:	0.1	Parameter Estimates			
	SD[Conc]:	0	from LN regression			
	CV[Conc]:	0.08	update graph label			

	tCd	N: 11				max r2 1.000
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
6-May-98	0.15	1	0.0556	-1.593	-1.897	
		2	0.1444	-1.061		
18-Nov-98	1	3	0.2333	-0.728		
		4	0.3222	-0.461		
		5	0.4111	-0.225		
		6	0.5000	0.000		
		7	0.5889	0.225		
		8	0.6778	0.461		
13-Jul-99	0.13	9	0.7667	0.728	-2.040	0.017
12-Aug-99	0.12	10	0.8556	1.061	-2.120	1.000
8-Sep-99	0.13	11	0.9444	1.593	-2.040	

update for EV, CV:

tCd		**PR14**			252	252
LN Analysis		**tCd**			1.26	1.26
Discharge, Q		**Q Data, EV=252 cfs CV=1.26**				
Avg:	**252**	**Q Data-based LN**				
SD:	**316**	u	lnQ	Q		
CV:	**1.26**	3	8.0	2900		
Min:	**17**	0	5.05	157		
Max:	**984**	-3	2.14	8		
Median:	**113**					

					0.001	0.000855
					#NUM!	#NUM!
u=mLn(Q)+b:					#NUM!	#NUM!
update for r2, EV, CV:	#NUM!					
	r2 u,lnQ:	0.001	u	lnQ	Q	
	slope, m:	-0.021	3	-137.37	0	
	intercept, b:	0.101	0	4.77	118	
	N: 11		-3	146.91	##########	
	E[Q]:	#NUM!	Parameter Estimates			
	SD[Q]:	#NUM!	from LN regression			
	CV[Q]:	#NUM!	update graph label			

N: 11

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 #DIV/0! r2 forward
update and rank for new data						
6-May-98	285	1	0.0556	-1.593	5.652	0.001
20-Oct-98	17	2	0.1444	-1.061	2.833	0.014
18-Nov-98	52	3	0.2333	-0.728	3.951	0.032
10-Dec-98	72	4	0.3222	-0.461	4.277	0.154
29-Dec-98	113	5	0.4111	-0.225	4.727	0.381
25-Feb-99	243	6	0.5000	0.000	5.493	0.673
24-Mar-99	803	7	0.5889	0.225	6.688	0.864
21-Apr-99	984	8	0.6778	0.461	6.892	0.810
13-Jul-99	124	9	0.7667	0.728	4.820	0.900
12-Aug-99	46	10	0.8556	1.061	3.829	1.000
8-Sep-99	28	11	0.9444	1.593	3.332	#DIV/0!

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.	see comment
Station: PR14	**Date:** 14-Jul-00
Chemical: tPb	**Analyst:** J.Johnston
Notes:	
Input Discharge and Concentration Data below (in red)	

	Date	Discharge	Concentration	Load			
Avg:	36,230	365	3	17	0.00	0.00	0.00
SD:	129	378	6	40	1.00	1.00	1.00
CV:	0.00	1.03	1.78	2.44			
Min:	35,921	17	0	0.0	-0.92	-0.51	-0.41
Max:	36,411	1,170	25	157	2.13	3.46	3.50
Median:	36,257	184	1	2	-0.48	-0.40	-0.37

tPb PR14			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.585)		update r2	0.58	0.585	r2:	0.044	0.012
r2 Q,[COC]:	0.58	[tPb]	Q		m:	0.6138	0.00112
slope, m:	0.0	-1	17.0		b:	-21872	-35.56
intercept, b:	-1.1	3	365.4				
N: 14		14	1170				
LnConc. = mLn(Q)+b (r2=0.647)		update r2		0.65	0.647		
r2 lnQ,ln[COC]:	0.65	ln[tPb]	ln Q	[tPb]	Q		
slope, m:	0.67	-1.11	2.83	0	17		
intercept, b:	-3.00	0.94	5.90	3	365		
N: 14		1.72	7.06	6	1,170		

N= 14

								tPb PR14	for graph 0	
	Sampling Date	**Q Discharge**	**tPb Concentration**	**tPb Load**	**Ln Q**	**Ln tPb Conc.**	**Ln tPb Load**	**Standardized Values = (x - Avg)/SD**		
update for new data		**cfs**	**ug/L**	**lbs/day**				**Q**	**Conc**	**Load**
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
URS	6-May-98	285	1.6	2.5	5.65	0.47	0.90	-0.21	-0.31	-0.35
USGS	20-Oct-98	17	1	0.1	2.83	0.00	-2.39	-0.92	-0.40	-0.41
USGS	18-Nov-98	52	1	0.3	3.95	0.00	-1.27	-0.83	-0.40	-0.40
USGS	10-Dec-98	72	1	0.4	4.28	0.00	-0.95	-0.78	-0.40	-0.40
USGS	29-Dec-98	113	1	0.6	4.73	0.00	-0.50	-0.67	-0.40	-0.40
USGS	25-Feb-99	243	2	2.6	5.49	0.69	0.96	-0.32	-0.24	-0.35
USGS	24-Mar-99	803	3	13.0	6.69	1.10	2.56	1.16	-0.08	-0.09
USGS	21-Apr-99	984	7	37.1	6.89	1.95	3.61	1.64	0.56	0.51
USGS	4-May-99	520	1	2.8	6.25	0.00	1.03	0.41	-0.40	-0.34
USGS	24-May-99	1170	25	157.4	7.06	3.22	5.06	2.13	3.46	3.50
USGS	15-Jun-99	659	4	14.2	6.49	1.39	2.65	0.78	0.08	-0.06
USGS	13-Jul-99	124	0.66	0.4	4.82	-0.42	-0.82	-0.64	-0.46	-0.40
USGS	12-Aug-99	46	0.39	0.1	3.83	-0.94	-2.34	-0.85	-0.50	-0.41
USGS	8-Sep-99	28	0.32	0.0	3.33	-1.14	-3.03	-0.89	-0.51	-0.41

tPb

Concentration over time analysis

				r2	Slope, m
	tPb	**PR14**		**Concentration over time**	
	LnConc.=mTime+b All data r2, m:			**0.002**	**-0.00039**
	Time	**Ln[COC]**	**[COC]**		
first:	6-May-98	0.57	2		
mid:	7-Apr-99	0.44	2		
last:	8-Sep-99	0.38	1		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

Load over time analysis

	tPb	**PR14**		**Load over time**	
	LnLoad=mTime+b All data r2, m:			**0.002**	**0.00074**
	Time	**LnLoad**	**Load**		
first:	6-May-98	0.16	1		
mid:	7-Apr-99	0.41	2		
last:	8-Sep-99	0.52	2		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

max r2:	0.863		max r2:	0.932	
Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.002	-0.00039	14.51	0.002	0.00074	-26.28
0.003	-0.00064	23.82	0.012	0.00260	-93.99
0.016	-0.00163	59.65	0.003	-0.00150	54.94
0.046	-0.00320	116.67	0.042	-0.00596	216.85
0.118	-0.00603	219.60	0.156	-0.01326	482.35
0.318	-0.01247	453.39	0.443	-0.02801	1018.00
0.445	-0.01760	640.00	0.650	-0.04050	1472.19
0.527	-0.02282	829.74	0.722	-0.05014	1822.66
0.453	-0.02318	842.85	0.676	-0.05261	1912.64
0.863	-0.04001	1455.04	0.932	-0.07724	2808.56

update for EV, CV:

tPb		**PR14**		
LN Analysis		**tPb**		
Load		**Load Data, EV=16.5 lbs/day CV=2.44**		
Avg:	**17**	**Load Data-based LN**		
SD:	**40**	u	ln tPb Load	tPb Load
CV:	**2.44**	3	6.0	408
Min:	**0.0**	0	1.84	6
Max:	**157**	-3	-2.34	0.1
Median:	**2**			
		17	16.5	
		2.44	2.44	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.966, EV=42.7lbs/day CV=28.9; max r2=0.98**

r2 u,lnLoad:	0.966	u	lnLoad	Load		
slope, m:	0.386	3	8.17	3542		
intercept, b:	-0.151	0	0.39	1		
N:	14	-3	-7.39	0.0		
E[Load]:	42.7	Parameter Estimates			0.966	0.966
SD[Load]:	1234	from LN regression			42.7	42.7
CV[Load]:	28.89	update graph label			28.9	28.9
					max r2	
	tPb	N: 14			0.980	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day Ranked**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
update and rank for new data						
8-Sep-99	**0.0**	1	0.0439	-1.708	-3.032	0.966
20-Oct-98	**0.1**	2	0.1140	-1.205	-2.392	0.976
12-Aug-99	**0.1**	3	0.1842	-0.899	-2.338	0.980
18-Nov-98	**0.3**	4	0.2544	-0.661	-1.274	0.974
10-Dec-98	**0.4**	5	0.3246	-0.455	-0.948	0.974
13-Jul-99	**0.4**	6	0.3947	-0.267	-0.820	0.970
29-Dec-98	**0.6**	7	0.4649	-0.088	-0.498	0.962
6-May-98	**2.5**	8	0.5351	0.088	0.897	0.958
25-Feb-99	**2.6**	9	0.6053	0.267	0.961	0.963
4-May-99	**2.8**	10	0.6754	0.455	1.029	0.949
24-Mar-99	**13.0**	11	0.7456	0.661	2.562	
15-Jun-99	**14.2**	12	0.8158	0.899	2.652	
21-Apr-99	**37.1**	13	0.8860	1.205	3.612	
24-May-99	**157.4**	14	0.9561	1.708	5.059	

update for EV, CV:

tPb		PR14		3	3.5
LN Analysis		tPb		1.78	1.78
Concentration		Conc. Data, EV=3.5 ug/L CV=1.78			
Avg:	3	Data-based LN			
SD:	6	u	ln[tPb]	[tPb]	
CV:	1.78	3	4.1	62	
Min:	0	0	0.54	2	
Max:	25	-3	-3.04	0	
Median:	1				

				0.911	0.911
u=mLn(Conc.)+b:				3.5	3.54
update for r2, EV, CV:	r2=0.911, EV=3.54 ug/L CV=2.02; max r2=0.27			2.022	2.02
r2 u,lnConc:	0.911	u	lnConc.	Conc.	
slope, m:	0.784	3	4.28	72	
intercept, b:	-0.354	0	0.45	2	
N:	14	-3	-3.38	0	
E[Conc]:	3.5	Parameter Estimates			
SD[Conc]:	7	from LN regression			
CV[Conc]:	2.02	update graph label			

Date	tPb Concentration ug/L Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.987 r2 forward
		N: 14				
update and rank for new data						
8-Sep-99	0.32	1	0.0439	-1.708	-1.139	0.911
12-Aug-99	0.39	2	0.1140	-1.205	-0.942	0.910
13-Jul-99	0.66	3	0.1842	-0.899	-0.416	0.894
20-Oct-98	1	4	0.2544	-0.661	0.000	0.896
18-Nov-98	1	5	0.3246	-0.455	0.000	0.933
10-Dec-98	1	6	0.3947	-0.267	0.000	0.961
29-Dec-98	1	7	0.4649	-0.088	0.000	0.980
4-May-99	1	8	0.5351	0.088	0.000	0.987
6-May-98	1.6	9	0.6053	0.267	0.470	0.982
25-Feb-99	2	10	0.6754	0.455	0.693	0.984
24-Mar-99	3	11	0.7456	0.661	1.099	
15-Jun-99	4	12	0.8158	0.899	1.386	
21-Apr-99	7	13	0.8860	1.205	1.946	
24-May-99	25	14	0.9561	1.708	3.219	

update for EV, CV:

tPb		**PR14**			365	365
LN Analysis		**tPb**			1.03	1.03
Discharge, Q		**Q Data, EV=365 cfs CV=1.03**				
Avg:	**365**	**Q Data-based LN**				
SD:	**378**	u	lnQ	Q		
CV:	**1.03**	3	8.1	3278		
Min:	**17**	0	5.54	254		
Max:	**1,170**	-3	2.98	20		
Median:	**184**					

	0.963	0.963
	534.0	534
u=mLn(Q)+b:	2.88	2.88

update for r2, EV, CV: **r2=0.963, EV=534 cfs CV=2.88; max r2=0.96**

r2 u,lnQ:	0.963	u	lnQ	Q
slope, m:	0.669	3	9.65	15464
intercept, b:	-3.457	0	5.16	175
N:	14	-3	0.68	2
E[Q]:	534.0	Parameter Estimates		
SD[Q]:	1540	from LN regression		
CV[Q]:	2.88	update graph label		

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.963 r2 forward
		N: 14				
update and rank for new data						
20-Oct-98	17	1	0.0439	-1.708	2.833	0.963
8-Sep-99	28	2	0.1140	-1.205	3.332	0.953
12-Aug-99	46	3	0.1842	-0.899	3.829	0.939
18-Nov-98	52	4	0.2544	-0.661	3.951	0.924
10-Dec-98	72	5	0.3246	-0.455	4.277	0.906
29-Dec-98	113	6	0.3947	-0.267	4.727	0.887
13-Jul-99	124	7	0.4649	-0.088	4.820	0.857
25-Feb-99	243	8	0.5351	0.088	5.493	0.872
6-May-98	285	9	0.6053	0.267	5.652	0.837
4-May-99	520	10	0.6754	0.455	6.254	0.944
15-Jun-99	659	11	0.7456	0.661	6.491	
24-Mar-99	803	12	0.8158	0.899	6.688	
21-Apr-99	984	13	0.8860	1.205	6.892	
24-May-99	1170	14	0.9561	1.708	7.065	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	**PR14**	**Date:**	14-Jul-00
Chemical:	**tZn**	**Analyst:**	J.Johnston
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,257	447	31	87		0.00	0.00	0.00
SD:	132	388	7	84		1.00	1.00	1.00
CV:	0.00	0.87	0.24	0.97				
Min:	35,921	28	20	3.6		-1.08	-1.52	-0.99
Max:	36,411	1,170	40	252		1.87	1.20	1.95
Median:	36,284	285	30	52		-0.42	-0.16	-0.41

tZn	PR14		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.629)		update r2	0.63	0.629	r2:	0.002	0.023
r2 Q,[COC]:	0.63	[tZn]	Q		m:	0.1275	-0.00147
slope, m:	0.0	25	28.0		b:	-4178	58.70
intercept, b:	24.5	31	446.7				
N: 11		42	1170				
LnConc. = mLn(Q)+b (r2=0.719)		update r2	0.72	0.719			
r2 lnQ,ln[COC]:	0.72	ln[tZn]	ln Q	[tZn]	Q		
slope, m:	0.16	3.06	3.33	21	28		
intercept, b:	2.52	3.51	6.10	33	447		
N: 11		3.66	7.06	39	1,170		

N= 11

	Sampling Date	Q Discharge	tZn Concentration	tZn Load	Ln Q	Ln tZn Conc.	Ln tZn Load	tZn PR14 Standardized Values = (x - Avg)/SD	for graph 0	
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
URS	6-May-98	285	30.6	46.9	5.65	3.42	3.85	-0.42	-0.08	-0.48
USGS	18-Nov-98	52	20	5.6	3.95	3.00	1.72	-1.02	-1.52	-0.97
USGS	25-Feb-99	243	40	52.3	5.49	3.69	3.96	-0.53	1.20	-0.41
USGS	24-Mar-99	803	40	172.8	6.69	3.69	5.15	0.92	1.20	1.02
USGS	21-Apr-99	984	40	211.8	6.89	3.69	5.36	1.39	1.20	1.48
USGS	4-May-99	520	30	83.9	6.25	3.40	4.43	0.19	-0.16	-0.04
USGS	24-May-99	1170	40	251.8	7.06	3.69	5.53	1.87	1.20	1.95
USGS	15-Jun-99	659	30	106.4	6.49	3.40	4.67	0.55	-0.16	0.23
USGS	13-Jul-99	124	25.4	16.9	4.82	3.23	2.83	-0.83	-0.79	-0.83
USGS	12-Aug-99	46	22.8	5.6	3.83	3.13	1.73	-1.03	-1.14	-0.96
USGS	8-Sep-99	28	24.1	3.6	3.33	3.18	1.29	-1.08	-0.96	-0.99

tZn

Concentration over time analysis

	tZn	PR14		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.009**	**-0.00017**
	Time	**Ln[COC]**	**[COC]**		
first:	6-May-98	3.47	32		
mid:	4-May-99	3.41	30		
last:	8-Sep-99	3.38	29		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

Load over time analysis

	tZn	PR14			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.021**	**-0.00164**
	Time	**LnLoad**	**Load**		
first:	6-May-98	4.23	69		
mid:	4-May-99	3.64	38		
last:	8-Sep-99	3.43	31		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

	max r2:	0.783		max r2:	0.962
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**	
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.009	-0.00017	9.64	0.021	-0.00164	63.12
	0.020	-0.00043	19.18	0.040	-0.00377	140.39
	0.783	-0.00327	122.05	0.595	-0.01880	686.66
	0.773	-0.00361	134.40	0.828	-0.02651	966.60
	0.719	-0.00373	139.06	0.871	-0.03105	1131.98
	0.613	-0.00332	123.99	0.851	-0.03275	1193.79
	0.776	-0.00464	172.09	0.962	-0.04188	1525.61

update for EV, CV:

tZn		**PR14**		
LN Analysis		**tZn**		
Load		**Load Data, EV=87.1 lbs/day CV=0.97**		
Avg:	**87**	**Load Data-based LN**		
SD:	**84**	u	ln tZn Load	tZn Load
CV:	**0.97**	3	6.6	719
Min:	**3.6**	0	4.14	63
Max:	**252**	-3	1.69	5.4
Median:	**52**			
		87	87.1	
		0.97	0.97	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.12, EV=3170000lbs/day CV=79800; max r2=0.89**

r2 u,lnLoad:	0.120	u	lnLoad	Load		
slope, m:	-0.210	3	-10.57	0		
intercept, b:	0.775	0	3.68	40		
N: 11		-3	17.94	61620979.5	0.120	0.12
E[Load]:	3172340.9	Parameter Estimates			#########	3170000
SD[Load]:	253149869574	from LN regression			79799.1	79800
CV[Load]:	79799.08	update graph label			max r2	
					0.887	

N: 11

Date	tZn Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
6-May-98	**46.9**	1	0.0556	-1.593	3.848	0.120
18-Nov-98	**5.6**	2	0.1444	-1.061	1.722	0.155
25-Feb-99	**52.3**	3	0.2333	-0.728	3.957	0.620
24-Mar-99	**172.8**	4	0.3222	-0.461	5.152	0.822
21-Apr-99	**211.8**	5	0.4111	-0.225	5.355	0.846
4-May-99	**83.9**	6	0.5000	0.000	4.430	0.821
24-May-99	**251.8**	7	0.5889	0.225	5.529	0.887
15-Jun-99	**106.4**	8	0.6778	0.461	4.667	
13-Jul-99	**16.9**	9	0.7667	0.728	2.830	
12-Aug-99	**5.6**	10	0.8556	1.061	1.730	
8-Sep-99	**3.6**	11	0.9444	1.593	1.289	

update for EV, CV:

tZn		**PR14**		31	31.2
LN Analysis		**tZn**		0.24	0.236
Concentration		**Conc. Data, EV=31.2 ug/L CV=0.236**			
Avg:	31	**Data-based LN**			
SD:	7	u	ln[tZn]	[tZn]	
CV:	0.24	3	4.1	61	
Min:	20	0	3.41	30	
Max:	40	-3	2.72	15	
Median:	30				

					0.086	0.0863
u=mLn(Conc.)+b:					46.1	46.1
update for r2, EV, CV:	**r2=0.0863, EV=46.1 ug/L CV=1.15; max r2=0.77**				1.147	1.15
	r2 u,lnConc:	0.086	u	lnConc.	Conc.	
	slope, m:	-1.091	3	0.66	2	
	intercept, b:	3.722	0	3.41	30	
	N:	11	-3	6.16	473	
	E[Conc]:	46.1	Parameter Estimates			
	SD[Conc]:	53	from LN regression			
	CV[Conc]:	1.15	update graph label			

	tZn	N: 11				max r2 0.766
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L Ranked**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
update and rank for new data						
6-May-98	30.6	1	0.0556	-1.593	3.421	0.086
18-Nov-98	20	2	0.1444	-1.061	2.996	0.119
25-Feb-99	40	3	0.2333	-0.728	3.689	0.766
24-Mar-99	40	4	0.3222	-0.461	3.689	0.740
21-Apr-99	40	5	0.4111	-0.225	3.689	0.676
4-May-99	30	6	0.5000	0.000	3.401	0.551
24-May-99	40	7	0.5889	0.225	3.689	0.656
15-Jun-99	30	8	0.6778	0.461	3.401	
13-Jul-99	25.4	9	0.7667	0.728	3.235	
12-Aug-99	22.8	10	0.8556	1.061	3.127	
8-Sep-99	24.1	11	0.9444	1.593	3.182	

update for EV, CV:

tZn		**PR14**			447	447
LN Analysis		**tZn**			0.87	0.868
Discharge, Q		**Q Data, EV=447 cfs CV=0.868**				
Avg:	**447**	**Q Data-based LN**				
SD:	**388**	u	lnQ	Q		
CV:	**0.87**	3	8.1	3193		
Min:	**28**	0	5.82	337		
Max:	**1,170**	-3	3.57	36		
Median:	**285**					

					0.121	0.121
					914631.1	915000
u=mLn{Q}+b:					3749.05	3750
update for r2, EV, CV:	**r2=0.121, EV=915000 cfs CV=3750; max r2=0.90**					
	r2 u,lnQ:	0.121	u	lnQ	Q	
	slope, m:	-0.246	3	-6.67	0	
	intercept, b:	1.355	0	5.50	244	
	N: 11		-3	17.67	47098300	
	E[Q]:	914631.1	Parameter Estimates			
	SD[Q]:	3428994100	from LN regression			
	CV[Q]:	3749.05	update graph label			

	Q	N: 11				max r2 0.903
Date	**Discharge cfs Ranked**	**i rank**	**i-3/8 / N+1/4 plotting points**	**u y-axis**	**Ln x-axis**	**r2 forward**
update and rank for new data						
6-May-98	285	1	0.0556	-1.593	5.652	0.121
18-Nov-98	52	2	0.1444	-1.061	3.951	0.155
25-Feb-99	243	3	0.2333	-0.728	5.493	0.565
24-Mar-99	803	4	0.3222	-0.461	6.688	0.814
21-Apr-99	984	5	0.4111	-0.225	6.892	0.852
4-May-99	520	6	0.5000	0.000	6.254	0.842
24-May-99	1170	7	0.5889	0.225	7.065	0.903
15-Jun-99	659	8	0.6778	0.461	6.491	
13-Jul-99	124	9	0.7667	0.728	4.820	
12-Aug-99	46	10	0.8556	1.061	3.829	
8-Sep-99	28	11	0.9444	1.593	3.332	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF12	Date:	13-Jun-00
Chemical:	dCd	Analyst:	J.MacLachlan
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load				
Avg:	34,578	98	9	4			0.00	0.00	0.00
SD:	279	65	3	2			1.00	1.00	1.00
CV:	0.01	0.66	0.35	0.46					
Min:	33,514	37	4	2.0			-0.93	-1.65	-1.05
Max:	34,956	310	18	9			3.28	3.04	2.71
Median:	34,586	76	9	4			-0.33	0.04	-0.10

dCd SF12			: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.34)		update r2	0.34	0.34		r2:	0.068	0.129
r2 Q,[COC]:	0.34	[dCd]	Q			m:	0.0603	0.00072
slope, m:	-0.03	10	37.3			b:	-1989	-20.54
intercept, b:	11.4	9	97.6					
N: 35		3	310					
LnConc. = mLn(Q)+b (r2=0.456)		update r2		0.46		0.456		
r2 lnQ,ln[COC]:	0.46	ln[dCd]	ln Q	[dCd]	Q			
slope, m:	-0.45	2.45	3.62	12	37			
intercept, b:	4.08	2.02	4.58	8	98			
N: 35		1.49	5.74	4	310			

N= 35

	Sampling Date	Q Discharge	dCd Concentration	dCd Load	Ln Q	Ln dCd Conc.	Ln dCd Load	dCd SF12 Standardized Values = (x - Avg)/SD Q	Conc	Load	for graph dCd 0
update for new data		cfs	ug/L	lbs/day							
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis				
MFG	3-Oct-91	44.3	10	2.4	3.79	2.30	0.87	-0.82	0.43	-0.86	
IDEQ	26-Oct-93	44.25	8.6	2.0	3.79	2.15	0.72	-0.82	-0.02	-1.05	
IDEQ	30-Nov-93	44.25	9.1	2.2	3.79	2.21	0.77	-0.82	0.14	-0.98	
IDEQ	20-Dec-93	44.25	12.2	2.9	3.79	2.50	1.07	-0.82	1.15	-0.57	
IDEQ	20-Dec-93	37.25	12.2	2.4	3.62	2.50	0.89	-0.93	1.15	-0.83	
IDEQ	19-Jan-94	51.54	9.8	2.7	3.94	2.28	1.00	-0.71	0.37	-0.68	
IDEQ	19-Jan-94	54.6	9.8	2.9	4.00	2.28	1.06	-0.66	0.37	-0.59	
IDEQ	15-Feb-94	45.68	11	2.7	3.82	2.40	0.99	-0.80	0.76	-0.68	
IDEQ	7-Mar-94	78.34	10	4.2	4.36	2.30	1.44	-0.30	0.43	0.16	
IDEQ	23-Mar-94	76.34	11	4.5	4.34	2.40	1.51	-0.33	0.76	0.33	
IDEQ	6-Apr-94	121.33	7.4	4.8	4.80	2.00	1.57	0.37	-0.41	0.50	
IDEQ	18-Apr-94	297.51	5.5	8.8	5.70	1.70	2.18	3.08	-1.03	2.71	
IDEQ	3-May-94	164.09	4.3	3.8	5.10	1.46	1.33	1.02	-1.42	-0.07	
IDEQ	20-May-94	154.9	4.6	3.8	5.04	1.53	1.34	0.88	-1.33	-0.05	
IDEQ	8-Jun-94	134.39	5.8	4.2	4.90	1.76	1.43	0.57	-0.94	0.15	
IDEQ	24-Jun-94	70.68	5.5	2.1	4.26	1.70	0.74	-0.42	-1.03	-1.02	
IDEQ	23-Jul-94	58.28	8.6	2.7	4.07	2.15	0.99	-0.61	-0.02	-0.69	
IDEQ	9-Sep-94	50.71	9	2.5	3.93	2.20	0.90	-0.72	0.11	-0.82	
IDEQ	5-Oct-94	47.55	10	2.6	3.86	2.30	0.94	-0.77	0.43	-0.76	
IDEQ	15-Nov-94	53.68	14	4.0	3.98	2.64	1.40	-0.68	1.74	0.06	
IDEQ	14-Dec-94	52.39	18	5.1	3.96	2.89	1.62	-0.70	3.04	0.64	
IDEQ	11-Jan-95	122.46	11	7.2	4.81	2.40	1.98	0.38	0.76	1.85	
IDEQ	10-Feb-95	124.74	10	6.7	4.83	2.30	1.90	0.42	0.43	1.55	
IDEQ	8-Mar-95	100.24	8.2	4.4	4.61	2.10	1.49	0.04	-0.15	0.27	
IDEQ	22-Mar-95	131.9	12	8.5	4.88	2.48	2.14	0.53	1.08	2.55	
IDEQ	13-Apr-95	110.71	7.5	4.5	4.71	2.01	1.50	0.20	-0.38	0.30	
IDEQ	25-Apr-95	118.03	7	4.4	4.77	1.95	1.49	0.31	-0.54	0.29	
IDEQ	10-May-95	310.37	3.9	6.5	5.74	1.36	1.87	3.28	-1.55	1.44	
IDEQ	23-May-95	193.74	3.6	3.8	5.27	1.28	1.32	1.48	-1.65	-0.10	
IDEQ	13-Jun-95	106.76	4.8	2.8	4.67	1.57	1.01	0.14	-1.26	-0.65	
IDEQ	28-Jun-95	92.51	5.2	2.6	4.53	1.65	0.95	-0.08	-1.13	-0.75	
IDEQ	12-Jul-95	56.39	6.8	2.1	4.03	1.92	0.72	-0.64	-0.61	-1.04	
IDEQ	26-Jul-95	54.57	8	2.3	4.00	2.08	0.85	-0.66	-0.22	-0.88	
IDEQ	15-Aug-95	120.22	8.8	5.7	4.79	2.17	1.74	0.35	0.04	0.98	
IDEQ	14-Sep-95	48.71	10.3	2.7	3.89	2.33	0.99	-0.75	0.53	-0.69	

dCd

Concentration over time analysis

	dCd	SF12		r2	Slope, m
	LnConc.=mTime+b All data r2, m:			**0.053**	**-0.00031**
	Time	**Ln[COC]**	**[COC]**		
first:	3-Oct-91	2.42	11		
mid:	9-Sep-94	2.09	8		
last:	14-Sep-95	1.98	7		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	14-Sep-95	0.00	1		

Load over time analysis

	dCd	SF12		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.077**	**0.00041**
	Time	**LnLoad**	**Load**		
first:	3-Oct-91	0.84	2		
mid:	9-Sep-94	1.28	4		
last:	14-Sep-95	1.43	4		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	14-Sep-95	0.00	1		

max r2: 0.952

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points. delete last 4 rows		
0.053	-0.00031	12.80
0.050	-0.00039	15.72
0.050	-0.00041	16.31
0.047	-0.00041	16.37
0.031	-0.00034	13.78
0.015	-0.00024	10.54
0.009	-0.00020	8.96
0.004	-0.00014	6.92
0.000	-0.00003	3.06
0.001	0.00007	-0.44
0.010	0.00024	-6.17
0.011	0.00027	-7.25
0.003	0.00015	-3.28
0.003	-0.00015	7.30
0.034	-0.00053	20.55
0.082	-0.00089	33.11
0.193	-0.00151	54.48
0.234	-0.00189	67.77
0.266	-0.00228	81.32
0.276	-0.00265	94.34
0.192	-0.00238	85.08
0.054	-0.00122	44.41
0.007	-0.00049	19.06
0.005	0.00043	-13.06
0.028	0.00118	-39.07
0.317	0.00394	-135.66
0.571	0.00594	-205.32
0.952	0.00888	-308.17
0.951	0.00945	-327.83
0.934	0.00860	-298.26
0.901	0.00813	-281.64

max r2: 0.484

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.077	0.00041	-12.97
0.050	0.00043	-13.65
0.028	0.00033	-10.05
0.013	0.00022	-6.41
0.007	0.00018	-4.74
0.001	0.00007	-0.93
0.000	-0.00003	2.40
0.004	-0.00013	6.00
0.015	-0.00028	11.01
0.014	-0.00029	11.32
0.011	-0.00027	10.65
0.006	-0.00021	8.68
0.005	0.00018	-4.82
0.005	0.00021	-5.81
0.007	0.00025	-7.37
0.013	0.00039	-12.09
0.001	-0.00012	5.48
0.023	-0.00062	22.79
0.109	-0.00146	52.09
0.315	-0.00274	96.85
0.431	-0.00367	129.22
0.484	-0.00445	156.36
0.414	-0.00446	156.96
0.336	-0.00432	152.01
0.366	-0.00508	178.46
0.198	-0.00350	123.18
0.156	-0.00345	121.61
0.102	-0.00316	111.40
0.004	0.00058	-19.10
0.108	0.00347	-120.04
0.141	0.00489	-169.64

update for EV, CV:

dCd
LN Analysis

SF12
dCd

Load

Load Data, EV=3.93 lbs/day CV=0.457

Load Data-based LN

		u	ln dCd Load	dCd Load
Avg:	**4**	3	2.6	13
SD:	**2**	0	1.27	4
CV:	**0.46**	-3	-0.03	1.0
Min:	**2.0**			
Max:	**9**			
Median:	**4**			

4	3.93
0.46	0.457

u=mLn(Load)+ b:

update for r2, EV, CV: **r2=0.94, EV=3.96lbs/day CV=0.467; max r2=0.97**

r2 u,lnLoad:	0.940	u	lnLoad	Load		
slope, m:	2.253	3	2.61	14		
intercept, b:	-2.881	0	1.28	4		
N:	35	-3	-0.05	0.9		
E[Load]:	4.0	Parameter Estimates			0.940	0.94
SD[Load]:	2	from LN regression			4.0	3.96
CV[Load]:	0.47	update graph label			0.5	0.467
					max r2	
	N: 35				0.970	

Date	dCd Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
26-Oct-93	**2.0**	1	0.0177	-2.103	0.717	0.940
12-Jul-95	**2.1**	2	0.0461	-1.684	0.724	0.957
24-Jun-94	**2.1**	3	0.0745	-1.443	0.738	0.963
30-Nov-93	**2.2**	4	0.1028	-1.266	0.773	0.965
26-Jul-95	**2.3**	5	0.1312	-1.121	0.854	0.965
3-Oct-91	**2.4**	6	0.1596	-0.996	0.869	0.968
20-Dec-93	**2.4**	7	0.1879	-0.885	0.894	0.969
9-Sep-94	**2.5**	8	0.2163	-0.785	0.898	0.970
5-Oct-94	**2.6**	9	0.2447	-0.691	0.939	0.969
28-Jun-95	**2.6**	10	0.2730	-0.604	0.951	0.968
23-Jul-94	**2.7**	11	0.3014	-0.520	0.992	0.966
14-Sep-95	**2.7**	12	0.3298	-0.441	0.993	0.965
15-Feb-94	**2.7**	13	0.3582	-0.363	0.994	0.962
19-Jan-94	**2.7**	14	0.3865	-0.288	1.000	0.958
13-Jun-95	**2.8**	15	0.4149	-0.215	1.014	0.955
19-Jan-94	**2.9**	16	0.4433	-0.143	1.057	0.954
20-Dec-93	**2.9**	17	0.4716	-0.071	1.066	0.954
23-May-95	**3.8**	18	0.5000	0.000	1.322	0.965
3-May-94	**3.8**	19	0.5284	0.071	1.334	0.964
20-May-94	**3.8**	20	0.5567	0.143	1.344	0.961
15-Nov-94	**4.0**	21	0.5851	0.215	1.397	0.957
8-Jun-94	**4.2**	22	0.6135	0.288	1.434	0.955
7-Mar-94	**4.2**	23	0.6418	0.363	1.439	0.954
8-Mar-95	**4.4**	24	0.6702	0.441	1.487	0.949
25-Apr-95	**4.4**	25	0.6986	0.520	1.492	0.946
13-Apr-95	**4.5**	26	0.7270	0.604	1.497	0.938
23-Mar-94	**4.5**	27	0.7553	0.691	1.508	0.925
6-Apr-94	**4.8**	28	0.7837	0.785	1.575	0.914
14-Dec-94	**5.1**	29	0.8121	0.885	1.624	0.900
15-Aug-95	**5.7**	30	0.8404	0.996	1.739	0.906
10-May-95	**6.5**	31	0.8688	1.121	1.874	0.904
10-Feb-95	**6.7**	32	0.8972	1.266	1.904	
11-Jan-95	**7.2**	33	0.9255	1.443	1.981	
22-Mar-95	**8.5**	34	0.9539	1.684	2.142	
18-Apr-94	**8.8**	35	0.9823	2.103	2.175	

update for EV, CV:

dCd		SF12		9	8.67
LN Analysis		dCd	•	0.35	0.354

Concentration — **Conc. Data, EV=8.67 ug/L CV=0.354**

		Data-based LN		
Avg:	9	u	ln[dCd]	[dCd]
SD:	3	3	3.1	23
CV:	0.35	3	3.1	23
Min:	4	0	2.10	8
Max:	18	-3	1.07	3
Median:	9			

				0.961	0.961
u=mLn(Conc.)+b:				8.8	8.78
update for r2, EV, CV:	r2=0.961, EV=8.78 ug/L CV=0.414; max r2=0.96			0.414	0.414
	r2 u,lnConc:	0.961	u	lnConc.	Conc.
	slope, m:	2.516	3	3.29	27
	intercept, b:	-5.268	0	2.09	8
	N:	35	-3	0.90	2
	E[Conc]:	8.8	Parameter Estimates		
	SD[Conc]:	4	from LN regression		
	CV[Conc]:	0.41	update graph label		

Date	dCd Concentration ug/L Ranked	N: 35 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.964 r2 forward
update and rank for new data						
23-May-95	3.6	1	0.0177	-2.103	1.281	0.961
10-May-95	3.9	2	0.0461	-1.684	1.361	0.955
3-May-94	4.3	3	0.0745	-1.443	1.459	0.951
20-May-94	4.6	4	0.1028	-1.266	1.526	0.947
13-Jun-95	4.8	5	0.1312	-1.121	1.569	0.944
28-Jun-95	5.2	6	0.1596	-0.996	1.649	0.943
18-Apr-94	5.5	7	0.1879	-0.885	1.705	0.942
24-Jun-94	5.5	8	0.2163	-0.785	1.705	0.941
8-Jun-94	5.8	9	0.2447	-0.691	1.758	0.950
12-Jul-95	6.8	10	0.2730	-0.604	1.917	0.964
25-Apr-95	7	11	0.3014	-0.520	1.946	0.962
6-Apr-94	7.4	12	0.3298	-0.441	2.001	0.961
13-Apr-95	7.5	13	0.3582	-0.363	2.015	0.957
26-Jul-95	8	14	0.3865	-0.288	2.079	0.955
8-Mar-95	8.2	15	0.4149	-0.215	2.104	0.950
26-Oct-93	8.6	16	0.4433	-0.143	2.152	0.945
23-Jul-94	8.6	17	0.4716	-0.071	2.152	0.942
15-Aug-95	8.8	18	0.5000	0.000	2.175	0.936
9-Sep-94	9	19	0.5284	0.071	2.197	0.930
30-Nov-93	9.1	20	0.5567	0.143	2.208	0.924
19-Jan-94	9.8	21	0.5851	0.215	2.282	0.916
19-Jan-94	9.8	22	0.6135	0.288	2.282	0.922
3-Oct-91	10	23	0.6418	0.363	2.303	0.926
7-Mar-94	10	24	0.6702	0.441	2.303	0.934
5-Oct-94	10	25	0.6986	0.520	2.303	0.938
10-Feb-95	10	26	0.7270	0.604	2.303	0.936
14-Sep-95	10.3	27	0.7553	0.691	2.332	0.927
15-Feb-94	11	28	0.7837	0.785	2.398	0.916
23-Mar-94	11	29	0.8121	0.885	2.398	0.930
11-Jan-95	11	30	0.8404	0.996	2.398	0.933
22-Mar-95	12	31	0.8688	1.121	2.485	0.914
20-Dec-93	12.2	32	0.8972	1.266	2.501	
20-Dec-93	12.2	33	0.9255	1.443	2.501	
15-Nov-94	14	34	0.9539	1.684	2.639	
14-Dec-94	18	35	0.9823	2.103	2.890	

update for EV, CV:

dCd		**SF12**			98	97.6
LN Analysis		**dCd**			0.66	0.664
Discharge, Q		**Q Data, EV=97.6 cfs CV=0.664**				
Avg:	**98**	**Q Data-based LN**				
SD:	**65**	u	lnQ	Q		
CV:	**0.66**	3	6.2	499		
Min:	**37**	0	4.40	81		
Max:	**310**	-3	2.58	13		
Median:	**76**					
					0.922	0.922
					98.9	98.9
	u=mLn(Q)+b:				0.67	0.668

update for r2, EV, CV: **r2=0.922, EV=98.9 cfs CV=0.668; max r2=0.97**

r2 u,lnQ:	0.922	u	lnQ	Q
slope, m:	1.647	3	6.23	509
intercept, b:	-7.262	0	4.41	82
N:	35	-3	2.59	13
E[Q]:	98.9	Parameter Estimates		
SD[Q]:	66	from LN regression		
CV[Q]:	0.67	update graph label		

	Q	N: 35				max r2 0.965
	Discharge	i	i-3/8 / N+1/4	u	Ln	r2
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
20-Dec-93	37.25	1	0.0177	-2.103	3.618	0.922
26-Oct-93	44.25	2	0.0461	-1.684	3.790	0.935
30-Nov-93	44.25	3	0.0745	-1.443	3.790	0.949
20-Dec-93	44.25	4	0.1028	-1.266	3.790	0.958
3-Oct-91	44.3	5	0.1312	-1.121	3.791	0.962
15-Feb-94	45.68	6	0.1596	-0.996	3.822	0.964
5-Oct-94	47.55	7	0.1879	-0.885	3.862	0.965
14-Sep-95	48.71	8	0.2163	-0.785	3.886	0.965
9-Sep-94	50.71	9	0.2447	-0.691	3.926	0.964
19-Jan-94	51.54	10	0.2730	-0.604	3.942	0.962
14-Dec-94	52.39	11	0.3014	-0.520	3.959	0.960
15-Nov-94	53.68	12	0.3298	-0.441	3.983	0.956
26-Jul-95	54.57	13	0.3582	-0.363	3.999	0.952
19-Jan-94	54.6	14	0.3865	-0.288	4.000	0.948
12-Jul-95	56.39	15	0.4149	-0.215	4.032	0.944
23-Jul-94	58.28	16	0.4433	-0.143	4.065	0.943
24-Jun-94	70.68	17	0.4716	-0.071	4.258	0.948
23-Mar-94	76.34	18	0.5000	0.000	4.335	0.943
7-Mar-94	78.34	19	0.5284	0.071	4.361	0.937
28-Jun-95	92.51	20	0.5567	0.143	4.527	0.932
8-Mar-95	100.24	21	0.5851	0.215	4.608	0.925
13-Jun-95	106.76	22	0.6135	0.288	4.671	0.919
13-Apr-95	110.71	23	0.6418	0.363	4.707	0.918
25-Apr-95	118.03	24	0.6702	0.441	4.771	0.917
15-Aug-95	120.22	25	0.6986	0.520	4.789	0.925
6-Apr-94	121.33	26	0.7270	0.604	4.799	0.933
11-Jan-95	122.46	27	0.7553	0.691	4.808	0.937
10-Feb-95	124.74	28	0.7837	0.785	4.826	0.935
22-Mar-95	131.9	29	0.8121	0.885	4.882	0.926
8-Jun-94	134.39	30	0.8404	0.996	4.901	0.910
20-May-94	154.9	31	0.8688	1.121	5.043	0.876
3-May-94	164.09	32	0.8972	1.266	5.100	
23-May-95	193.74	33	0.9255	1.443	5.267	
18-Apr-94	297.51	34	0.9539	1.684	5.695	
10-May-95	310.37	35	0.9823	2.103	5.738	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SF12 **Date:** 13-Jun-00
Chemical: dPb **Analyst:** JMacLachlan
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,578	98	15	8	0.00	0.00	0.00
SD:	279	65	4	5	1.00	1.00	1.00
CV:	0.01	0.66	0.24	0.62			
Min:	33,514	37	6	1.4	-0.93	-2.53	-1.33
Max:	34,956	310	23	22	3.28	2.04	2.79
Median:	34,586	76	15	7	-0.33	-0.11	-0.28

dPb SF12 : Concentration v. Discharge, Q

Conc. = mQ+b (r2=0.00691)	update r2	0.01	0.00691		Q = mTime +b		LnQ = mTime +b
r2 Q,[COC]:	0.01	[dPb]	Q		r2:	0.068	0.129
slope, m:	-0.005	16	37.3		m:	0.0603	0.00072
intercept, b:	15.9	15	97.6		b:	-1989	-20.54
N: 35		14	310				
LnConc. = mLn(Q)+b (r2=0.00393)	update r2	0.00	0.00393				
r2 lnQ,ln[COC]:	0.004	ln[dPb]	ln Q	[dPb]	Q		
slope, m:	0.03	2.68	3.62	15	37		
intercept, b:	2.57	2.71	4.58	15	98		
N: 35		2.74	5.74	16	310		

N= 35

	Sampling Date	Q Discharge	dPb Concentration	dPb Load	Ln Q	Ln dPb Conc.	Ln dPb Load	for graph 0 dPb SF12 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	3-Oct-91	44.3	6	1.4	3.79	1.79	0.36	-0.82	-2.53	-1.33
IDEQ	26-Oct-93	44.25	15	3.6	3.79	2.71	1.27	-0.82	-0.11	-0.90
IDEQ	30-Nov-93	44.25	11	2.6	3.79	2.40	0.96	-0.82	-1.18	-1.09
IDEQ	20-Dec-93	44.25	12	2.9	3.79	2.48	1.05	-0.82	-0.91	-1.04
IDEQ	20-Dec-93	37.25	12	2.4	3.62	2.48	0.88	-0.93	-0.91	-1.13
IDEQ	19-Jan-94	51.54	15	4.2	3.94	2.71	1.43	-0.71	-0.11	-0.78
IDEQ	19-Jan-94	54.6	15	4.4	4.00	2.71	1.48	-0.66	-0.11	-0.73
IDEQ	15-Feb-94	45.68	12	2.9	3.82	2.48	1.08	-0.80	-0.91	-1.02
IDEQ	7-Mar-94	78.34	15	6.3	4.36	2.71	1.84	-0.30	-0.11	-0.34
IDEQ	23-Mar-94	76.34	17	7.0	4.34	2.83	1.94	-0.33	0.43	-0.20
IDEQ	6-Apr-94	121.33	14	9.1	4.80	2.64	2.21	0.37	-0.38	0.24
IDEQ	18-Apr-94	297.51	11	17.6	5.70	2.40	2.87	3.08	-1.18	1.96
IDEQ	3-May-94	164.09	21	18.5	5.10	3.04	2.92	1.02	1.51	2.15
IDEQ	20-May-94	154.9	11	9.2	5.04	2.40	2.22	0.88	-1.18	0.24
IDEQ	8-Jun-94	134.39	14	10.1	4.90	2.64	2.31	0.57	-0.38	0.44
IDEQ	24-Jun-94	70.68	17	6.5	4.26	2.83	1.87	-0.42	0.43	-0.31
IDEQ	23-Jul-94	58.28	21	6.6	4.07	3.04	1.88	-0.61	1.51	-0.28
IDEQ	9-Sep-94	50.71	14	3.8	3.93	2.64	1.34	-0.72	-0.38	-0.85
IDEQ	5-Oct-94	47.55	12	3.1	3.86	2.48	1.12	-0.77	-0.91	-1.00
IDEQ	15-Nov-94	53.68	18	5.2	3.98	2.89	1.65	-0.68	0.70	-0.57
IDEQ	14-Dec-94	52.39	18	5.1	3.96	2.89	1.62	-0.70	0.70	-0.59
IDEQ	11-Jan-95	122.46	10	6.6	4.81	2.30	1.89	0.38	-1.45	-0.28
IDEQ	10-Feb-95	124.74	16	10.7	4.83	2.77	2.37	0.42	0.16	0.56
IDEQ	8-Mar-95	100.24	16	8.6	4.61	2.77	2.16	0.04	0.16	0.13
IDEQ	22-Mar-95	131.9	23	16.3	4.88	3.14	2.79	0.53	2.04	1.70
IDEQ	13-Apr-95	110.71	18	10.7	4.71	2.89	2.37	0.20	0.70	0.56
IDEQ	25-Apr-95	118.03	18	11.4	4.77	2.89	2.44	0.31	0.70	0.70
IDEQ	10-May-95	310.37	13	21.7	5.74	2.56	3.08	3.28	-0.65	2.79
IDEQ	23-May-95	193.74	13	13.6	5.27	2.56	2.61	1.48	-0.65	1.13
IDEQ	13-Jun-95	106.76	21	12.1	4.67	3.04	2.49	0.14	1.51	0.83
IDEQ	28-Jun-95	92.51	14	7.0	4.53	2.64	1.94	-0.08	-0.38	-0.21
IDEQ	12-Jul-95	56.39	18	5.5	4.03	2.89	1.70	-0.64	0.70	-0.51
IDEQ	26-Jul-95	54.57	19	5.6	4.00	2.94	1.72	-0.66	0.97	-0.49
IDEQ	15-Aug-95	120.22	18	11.6	4.79	2.89	2.45	0.35	0.70	0.74
IDEQ	14-Sep-95	48.71	21	5.5	3.89	3.04	1.71	-0.75	1.51	-0.50

dPb

Concentration over time analysis

	dPb	SF12		r2	Slope, m
	LnConc.=mTime+b All data r2, m:			**0.435**	**0.00063**
	Time	**Ln[COC]**	**[COC]**		
first:	3-Oct-91	2.03	8		
mid:	9-Sep-94	2.71	15		
last:	14-Sep-95	2.94	19		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	14-Sep-95	0.00	1		

Load over time analysis

	dPb	SF12		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.352**	**0.00135**
	Time	**LnLoad**	**Load**		
first:	3-Oct-91	0.45	2		
mid:	9-Sep-94	1.90	7		
last:	14-Sep-95	2.40	11		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	14-Sep-95	0.00	1		

max r2: 0.674 — **Forward time Regression on Ln Concentration(t)**

max r2: 0.503 — **Forward time Regression on Ln Load(t)**

r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.435	0.00063	-19.04	0.352	0.00135	-44.81
0.203	0.00046	-13.20	0.220	0.00129	-42.57
0.216	0.00049	-14.35	0.194	0.00123	-40.71
0.180	0.00045	-12.87	0.154	0.00109	-35.65
0.153	0.00042	-11.84	0.116	0.00093	-30.37
0.122	0.00038	-10.56	0.068	0.00069	-22.03
0.124	0.00040	-11.22	0.045	0.00057	-17.78
0.127	0.00043	-12.07	0.025	0.00044	-13.00
0.094	0.00038	-10.25	0.002	0.00013	-2.30
0.093	0.00039	-10.82	0.000	0.00003	0.94
0.116	0.00046	-13.22	0.000	-0.00004	3.61
0.104	0.00046	-13.14	0.000	-0.00002	2.79
0.053	0.00033	-8.59	0.012	0.00035	-10.13
0.127	0.00053	-15.65	0.076	0.00089	-28.75
0.059	0.00036	-9.81	0.108	0.00115	-37.73
0.036	0.00031	-7.93	0.173	0.00159	-53.13
0.052	0.00042	-11.70	0.179	0.00180	-60.70
0.177	0.00084	-26.56	0.191	0.00212	-71.54
0.151	0.00087	-27.54	0.108	0.00169	-56.76
0.066	0.00061	-18.59	0.011	0.00052	-16.08
0.118	0.00094	-29.92	0.004	-0.00034	14.22
0.203	0.00142	-46.51	0.093	-0.00181	65.44
0.037	0.00054	-15.80	0.269	-0.00344	122.10
0.023	0.00047	-13.69	0.318	-0.00428	151.38
0.009	0.00034	-9.06	0.477	-0.00591	208.47
0.183	0.00155	-51.06	0.405	-0.00589	207.77
0.301	0.00225	-75.67	0.461	-0.00714	251.26
0.514	0.00342	-116.49	0.503	-0.00862	303.09
0.370	0.00297	-100.74	0.305	-0.00590	207.99
0.111	0.00147	-48.56	0.108	-0.00366	129.65
0.674	0.00402	-137.64	0.006	0.00079	-25.64

update for EV, CV:

dPb		**SF12**		
LN Analysis		**dPb**		
Load		**Load Data, EV=7.98 lbs/day CV=0.616**		
Avg:	**8**	**Load Data-based LN**		
SD:	**5**	u	ln dPb Load	dPb Load
CV:	**0.62**	3	3.6	37
Min:	**1.4**	0	1.92	7
Max:	**22**	-3	0.22	1.2
Median:	**7**			
		8	7.98	
		0.62	0.616	

u=mLn(Load)+ b:

update for r2, EV, CV: **r2=0.989, EV=8.23lbs/day CV=0.746; max r2=0.99**

r2 u,lnLoad:	0.989	u	lnLoad	Load		
slope, m:	1.504	3	3.88	48		
intercept, b:	-2.837	0	1.89	7		
N:	35	-3	-0.11	0.9		
E[Load]:	8.2	Parameter Estimates			0.989	0.989
SD[Load]:	6	from LN regression			8.2	8.23
CV[Load]:	0.75	update graph label			0.7	0.746
					max r2	
	dPb	N: 35			0.989	

Date	Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
3-Oct-91	1.4	1	0.0177	-2.103	0.358	0.989
20-Dec-93	2.4	2	0.0461	-1.684	0.877	0.988
30-Nov-93	2.6	3	0.0745	-1.443	0.963	0.988
20-Dec-93	2.9	4	0.1028	-1.266	1.050	0.986
15-Feb-94	2.9	5	0.1312	-1.121	1.082	0.985
5-Oct-94	3.1	6	0.1596	-0.996	1.122	0.984
26-Oct-93	3.6	7	0.1879	-0.885	1.273	0.985
9-Sep-94	3.8	8	0.2163	-0.785	1.340	0.984
19-Jan-94	4.2	9	0.2447	-0.691	1.425	0.983
19-Jan-94	4.4	10	0.2730	-0.604	1.483	0.982
14-Dec-94	5.1	11	0.3014	-0.520	1.624	0.980
15-Nov-94	5.2	12	0.3298	-0.441	1.648	0.979
12-Jul-95	5.5	13	0.3582	-0.363	1.698	0.977
14-Sep-95	5.5	14	0.3865	-0.288	1.705	0.975
26-Jul-95	5.6	15	0.4149	-0.215	1.719	0.972
7-Mar-94	6.3	16	0.4433	-0.143	1.844	0.971
24-Jun-94	6.5	17	0.4716	-0.071	1.866	0.968
23-Jul-94	6.6	18	0.5000	0.000	1.885	0.964
11-Jan-95	6.6	19	0.5284	0.071	1.885	0.960
28-Jun-95	7.0	20	0.5567	0.143	1.941	0.959
23-Mar-94	7.0	21	0.5851	0.215	1.943	0.959
8-Mar-95	8.6	22	0.6135	0.288	2.155	0.974
6-Apr-94	9.1	23	0.6418	0.363	2.213	0.970
20-May-94	9.2	24	0.6702	0.441	2.216	0.966
8-Jun-94	10.1	25	0.6986	0.520	2.315	0.962
13-Apr-95	10.7	26	0.7270	0.604	2.372	0.956
10-Feb-95	10.7	27	0.7553	0.691	2.374	0.950
25-Apr-95	11.4	28	0.7837	0.785	2.436	0.939
15-Aug-95	11.6	29	0.8121	0.885	2.455	0.924
13-Jun-95	12.1	30	0.8404	0.996	2.490	0.902
23-May-95	13.6	31	0.8688	1.121	2.606	0.908
22-Mar-95	16.3	32	0.8972	1.266	2.792	
18-Apr-94	17.6	33	0.9255	1.443	2.868	
3-May-94	18.5	34	0.9539	1.684	2.920	
10-May-95	21.7	35	0.9823	2.103	3.078	

update for EV, CV:

dPb		SF12		15	15.4
LN Analysis		dPb		0.24	0.242

Concentration

Conc. Data, EV=15.4 ug/L CV=0.242

Avg:	15	Data-based LN		
SD:	4	u	ln[dPb]	[dPb]
CV:	0.24	3	3.4	31
Min:	6	0	2.71	15
Max:	23	-3	1.99	7
Median:	15			

					0.923	0.923
u=mLn(Conc.)+b:					15.5	15.5
update for r2, EV, CV:	r2=0.923, EV=15.5 ug/L CV=0.294; max r2=0.97				0.294	0.294
	r2 u,lnConc:	0.923	u	lnConc.	Conc.	
	slope, m:	3.470	3	3.57	35	
	intercept, b:	-9.374	0	2.70	15	
	N:	35	-3	1.84	6	
	E[Conc]:	15.5	Parameter Estimates			
	SD[Conc]:	5	from LN regression			
	CV[Conc]:	0.29	update graph label			

Date	dPb Concentration ug/L Ranked	i rank	I-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.973 r2 forward
update and rank for new data						
3-Oct-91	6	1	0.0177	-2.103	1.792	0.923
11-Jan-95	10	2	0.0461	-1.684	2.303	0.973
30-Nov-93	11	3	0.0745	-1.443	2.398	0.969
18-Apr-94	11	4	0.1028	-1.266	2.398	0.967
20-May-94	11	5	0.1312	-1.121	2.398	0.963
20-Dec-93	12	6	0.1596	-0.996	2.485	0.961
20-Dec-93	12	7	0.1879	-0.885	2.485	0.958
15-Feb-94	12	8	0.2163	-0.785	2.485	0.954
5-Oct-94	12	9	0.2447	-0.691	2.485	0.951
10-May-95	13	10	0.2730	-0.604	2.565	0.953
23-May-95	13	11	0.3014	-0.520	2.565	0.949
6-Apr-94	14	12	0.3298	-0.441	2.639	0.947
8-Jun-94	14	13	0.3582	-0.363	2.639	0.942
9-Sep-94	14	14	0.3865	-0.288	2.639	0.937
28-Jun-95	14	15	0.4149	-0.215	2.639	0.931
26-Oct-93	15	16	0.4433	-0.143	2.708	0.930
19-Jan-94	15	17	0.4716	-0.071	2.708	0.923
19-Jan-94	15	18	0.5000	0.000	2.708	0.914
7-Mar-94	15	19	0.5284	0.071	2.708	0.909
10-Feb-95	16	20	0.5567	0.143	2.773	0.913
8-Mar-95	16	21	0.5851	0.215	2.773	0.903
23-Mar-94	17	22	0.6135	0.288	2.833	0.898
24-Jun-94	17	23	0.6418	0.363	2.833	0.885
15-Nov-94	18	24	0.6702	0.441	2.890	0.867
14-Dec-94	18	25	0.6986	0.520	2.890	0.865
13-Apr-95	18	26	0.7270	0.604	2.890	0.856
25-Apr-95	18	27	0.7553	0.691	2.890	0.836
12-Jul-95	18	28	0.7837	0.785	2.890	0.802
15-Aug-95	18	29	0.8121	0.885	2.890	0.750
26-Jul-95	19	30	0.8404	0.996	2.944	0.724
3-May-94	21	31	0.8688	1.121	3.045	0.704
23-Jul-94	21	32	0.8972	1.266	3.045	
13-Jun-95	21	33	0.9255	1.443	3.045	
14-Sep-95	21	34	0.9539	1.684	3.045	
22-Mar-95	23	35	0.9823	2.103	3.135	

update for EV, CV:

dPb		**SF12**			98	97.6
LN Analysis		**dPb**			0.66	0.664
Discharge, Q		**Q Data, EV=97.6 cfs CV=0.664**				
Avg:	**98**	**Q Data-based LN**				
SD:	**65**	u	lnQ	Q		
CV:	**0.66**	3	6.2	499		
Min:	**37**	0	4.40	81		
Max:	**310**	-3	2.58	13		
Median:	**76**					
					0.922	0.922
					98.9	98.9
	u=mLn(Q)+b:				0.67	0.668

update for r2, EV, CV: **r2=0.922, EV=98.9 cfs CV=0.668; max r2=0.97**

r2 u,lnQ:	0.922	u	lnQ	Q
slope, m:	1.647	3	6.23	509
intercept, b:	-7.262	0	4.41	82
N:	35	-3	2.59	13
E[Q]:	98.9	Parameter Estimates		
SD[Q]:	66	from LN regression		
CV[Q]:	0.67	update graph label		

	Q	N: 35				max r2 0.965
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
20-Dec-93	37.25	1	0.0177	-2.103	3.618	0.922
26-Oct-93	44.25	2	0.0461	-1.684	3.790	0.935
30-Nov-93	44.25	3	0.0745	-1.443	3.790	0.949
20-Dec-93	44.25	4	0.1028	-1.266	3.790	0.958
3-Oct-91	44.3	5	0.1312	-1.121	3.791	0.962
15-Feb-94	45.68	6	0.1596	-0.996	3.822	0.964
5-Oct-94	47.55	7	0.1879	-0.885	3.862	0.965
14-Sep-95	48.71	8	0.2163	-0.785	3.886	0.965
9-Sep-94	50.71	9	0.2447	-0.691	3.926	0.964
19-Jan-94	51.54	10	0.2730	-0.604	3.942	0.962
14-Dec-94	52.39	11	0.3014	-0.520	3.959	0.960
15-Nov-94	53.68	12	0.3298	-0.441	3.983	0.956
26-Jul-95	54.57	13	0.3582	-0.363	3.999	0.952
19-Jan-94	54.6	14	0.3865	-0.288	4.000	0.948
12-Jul-95	56.39	15	0.4149	-0.215	4.032	0.944
23-Jul-94	58.28	16	0.4433	-0.143	4.065	0.943
24-Jun-94	70.68	17	0.4716	-0.071	4.258	0.948
23-Mar-94	76.34	18	0.5000	0.000	4.335	0.943
7-Mar-94	78.34	19	0.5284	0.071	4.361	0.937
28-Jun-95	92.51	20	0.5567	0.143	4.527	0.932
8-Mar-95	100.24	21	0.5851	0.215	4.608	0.925
13-Jun-95	106.76	22	0.6135	0.288	4.671	0.919
13-Apr-95	110.71	23	0.6418	0.363	4.707	0.918
25-Apr-95	118.03	24	0.6702	0.441	4.771	0.917
15-Aug-95	120.22	25	0.6986	0.520	4.789	0.925
6-Apr-94	121.33	26	0.7270	0.604	4.799	0.933
11-Jan-95	122.46	27	0.7553	0.691	4.808	0.937
10-Feb-95	124.74	28	0.7837	0.785	4.826	0.935
22-Mar-95	131.9	29	0.8121	0.885	4.882	0.926
8-Jun-94	134.39	30	0.8404	0.996	4.901	0.910
20-May-94	154.9	31	0.8688	1.121	5.043	0.876
3-May-94	164.09	32	0.8972	1.266	5.100	
23-May-95	193.74	33	0.9255	1.443	5.267	
18-Apr-94	297.51	34	0.9539	1.684	5.695	
10-May-95	310.37	35	0.9823	2.103	5.738	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF12	Date:	13-Jun-00
Chemical:	dZn	Analyst:	J.MacLachlan
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,578	98	1,384	612	0.00	0.00	0.00
SD:	279	65	560	274	1.00	1.00	1.00
CV:	0.01	0.66	0.40	0.45			
Min:	33,514	37	474	243.1	-0.93	-1.63	-1.34
Max:	34,956	310	2,840	1,407	3.28	2.60	2.90
Median:	34,586	76	1,380	519	-0.33	-0.01	-0.34

dZn	SF12		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.349)		update r2	0.35	0.349	r2:	0.068	0.129
r2 Q,[COC]:	0.35	[dZn]	Q		m:	0.0603	0.00072
slope, m:	-5.1	1,692	37.3		b:	-1989	-20.54
intercept, b:	1881.4	1,384	97.6				
N: 35		300	310				
LnConc. = mLn(Q)+b (r2=0.446)		update r2	0.45	0.446			
r2 lnQ,ln[COC]:	0.45	ln[dZn]	ln Q	[dZn]	Q		
slope, m:	-0.54	7.57	3.62	1,932	37		
intercept, b:	9.52	7.05	4.58	1,149	98		
N: 35		6.42	5.74	616	310		

N= 35

	Sampling Date	Q Discharge	dZn Concentration	dZn Load	Ln Q	Ln dZn Conc.	Ln dZn Load	dZn SF12 Standardized Values = (x - Avg)/SD		for graph 0
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	3-Oct-91	44.3	1020	243.1	3.79	6.93	5.49	-0.82	-0.65	-1.34
IDEQ	26-Oct-93	44.25	1830	435.7	3.79	7.51	6.08	-0.82	0.80	-0.64
IDEQ	30-Nov-93	44.25	1720	409.5	3.79	7.45	6.01	-0.82	0.60	-0.74
IDEQ	20-Dec-93	44.25	2090	497.6	3.79	7.64	6.21	-0.82	1.26	-0.42
IDEQ	20-Dec-93	37.25	2090	418.8	3.62	7.64	6.04	-0.93	1.26	-0.70
IDEQ	19-Jan-94	51.54	1850	513.0	3.94	7.52	6.24	-0.71	0.83	-0.36
IDEQ	19-Jan-94	54.6	1850	543.4	4.00	7.52	6.30	-0.66	0.83	-0.25
IDEQ	15-Feb-94	45.68	1820	447.3	3.82	7.51	6.10	-0.80	0.78	-0.60
IDEQ	7-Mar-94	78.34	1770	746.0	4.36	7.48	6.61	-0.30	0.69	0.49
IDEQ	23-Mar-94	76.34	1770	727.0	4.34	7.48	6.59	-0.33	0.69	0.42
IDEQ	6-Apr-94	121.33	1170	763.7	4.80	7.06	6.64	0.37	-0.38	0.55
IDEQ	18-Apr-94	297.51	879	1406.9	5.70	6.78	7.25	3.08	-0.90	2.90
IDEQ	3-May-94	164.09	623	550.0	5.10	6.43	6.31	1.02	-1.36	-0.22
IDEQ	20-May-94	154.9	623	519.2	5.04	6.43	6.25	0.88	-1.36	-0.34
IDEQ	8-Jun-94	134.39	924	668.1	4.90	6.83	6.50	0.57	-0.82	0.21
IDEQ	24-Jun-94	70.68	924	351.4	4.26	6.83	5.86	-0.42	-0.82	-0.95
IDEQ	23-Jul-94	58.28	1190	373.1	4.07	7.08	5.92	-0.61	-0.35	-0.87
IDEQ	9-Sep-94	50.71	1570	428.3	3.93	7.36	6.06	-0.72	0.33	-0.67
IDEQ	5-Oct-94	47.55	1500	383.7	3.86	7.31	5.95	-0.77	0.21	-0.83
IDEQ	15-Nov-94	53.68	2460	710.4	3.98	7.81	6.57	-0.68	1.92	0.36
IDEQ	14-Dec-94	52.39	2840	800.5	3.96	7.95	6.69	-0.70	2.60	0.69
IDEQ	11-Jan-95	122.46	1790	1179.3	4.81	7.49	7.07	0.38	0.73	2.07
IDEQ	10-Feb-95	124.74	1650	1107.3	4.83	7.41	7.01	0.42	0.48	1.81
IDEQ	8-Mar-95	100.24	1340	722.7	4.61	7.20	6.58	0.04	-0.08	0.40
IDEQ	22-Mar-95	131.9	1600	1135.4	4.88	7.38	7.03	0.53	0.39	1.91
IDEQ	13-Apr-95	110.71	1210	720.7	4.71	7.10	6.58	0.20	-0.31	0.40
IDEQ	25-Apr-95	118.03	1080	685.8	4.77	6.98	6.53	0.31	-0.54	0.27
IDEQ	10-May-95	310.37	489	816.5	5.74	6.19	6.71	3.28	-1.60	0.75
IDEQ	23-May-95	193.74	474	494.1	5.27	6.16	6.20	1.48	-1.63	-0.43
IDEQ	13-Jun-95	106.76	536	307.9	4.67	6.28	5.73	0.14	-1.51	-1.11
IDEQ	28-Jun-95	92.51	799	397.7	4.53	6.68	5.99	-0.08	-1.04	-0.78
IDEQ	12-Jul-95	56.39	934	283.4	4.03	6.84	5.65	-0.64	-0.80	-1.20
IDEQ	26-Jul-95	54.57	1160	340.6	4.00	7.06	5.83	-0.66	-0.40	-0.99
IDEQ	15-Aug-95	120.22	1380	892.6	4.79	7.23	6.79	0.35	-0.01	1.02
IDEQ	14-Sep-95	48.71	1480	387.8	3.89	7.30	5.96	-0.75	0.17	-0.82

dZn

Concentration over time analysis

	dZn	SF12		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.050	-0.00036
	Time	Ln[COC]	[COC]		
first:	3-Oct-91	7.52	1,851		
mid:	9-Sep-94	7.14	1,257		
last:	14-Sep-95	7.00	1,100		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	14-Sep-95	0.00	1		

Load over time analysis

	dZn	SF12			
				Load over time	
	LnLoad=mTime+b All data r2, m:			0.056	0.00036
	Time	LnLoad	Load		
first:	3-Oct-91	5.94	380		
mid:	9-Sep-94	6.33	560		
last:	14-Sep-95	6.46	639		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	14-Sep-95	0.00	1		

max r2: 0.930

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points. delete last 4 rows		
0.050	-0.00036	19.62
0.133	-0.00078	34.06
0.117	-0.00075	33.20
0.105	-0.00073	32.55
0.082	-0.00066	29.94
0.058	-0.00057	26.68
0.041	-0.00049	23.99
0.024	-0.00039	20.53
0.011	-0.00027	16.49
0.003	-0.00014	11.82
0.000	0.00003	5.94
0.000	0.00006	4.91
0.000	-0.00005	8.69
0.016	-0.00040	20.97
0.071	-0.00089	38.16
0.123	-0.00128	51.68
0.212	-0.00188	72.44
0.280	-0.00246	92.77
0.286	-0.00280	104.46
0.307	-0.00332	122.58
0.212	-0.00293	108.94
0.078	-0.00176	68.30
0.018	-0.00091	38.70
0.001	0.00028	-2.92
0.031	0.00143	-42.93
0.223	0.00407	-135.09
0.496	0.00669	-226.46
0.930	0.01049	-359.40
0.920	0.01106	-379.31
0.874	0.01054	-360.83
0.902	0.00808	-275.14

max r2: 0.512

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.056	0.00036	-6.15
0.001	0.00005	4.69
0.000	-0.00001	6.84
0.002	-0.00010	9.77
0.005	-0.00015	11.42
0.014	-0.00025	15.21
0.020	-0.00032	17.43
0.026	-0.00038	19.61
0.046	-0.00052	24.44
0.038	-0.00050	23.58
0.031	-0.00047	22.77
0.022	-0.00042	20.83
0.000	-0.00002	7.15
0.000	-0.00004	7.86
0.001	-0.00011	10.24
0.000	0.00000	6.48
0.016	-0.00049	23.44
0.077	-0.00119	47.80
0.170	-0.00198	75.24
0.404	-0.00341	125.10
0.473	-0.00421	153.08
0.512	-0.00499	180.25
0.430	-0.00489	176.60
0.328	-0.00447	162.15
0.310	-0.00483	174.60
0.158	-0.00337	123.75
0.087	-0.00270	100.47
0.023	-0.00155	60.17
0.048	0.00219	-70.57
0.194	0.00540	-182.62
0.113	0.00485	-163.14

update for EV, CV:

dZn		SF12		
LN Analysis		dZn		
Load		**Load Data, EV=612 lbs/day CV=0.448**		
Avg:	612	**Load Data-based LN**		
SD:	274	u	ln dZn Load	dZn Load
CV:	0.45	3	7.6	2016
Min:	243.1	0	6.32	558
Max:	1,407	-3	5.04	154.5
Median:	519			
		612	612	
		0.45	0.448	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.981, EV=616lbs/day CV=0.469; max r2=0.98**

r2 u,lnLoad:	0.981	u	lnLoad	Load		
slope, m:	2.242	3	7.66	2126		
intercept, b:	#######	0	6.32	558		
N:	35	-3	4.99	146.4		
E[Load]:	616.2	Parameter Estimates			0.981	0.981
SD[Load]:	289	from LN regression			616.2	616
CV[Load]:	0.47	update graph label			0.5	0.469
					max r2	
		N: 35			0.981	

Date	dZn Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
3-Oct-91	243.1	1	0.0177	-2.103	5.493	0.981
12-Jul-95	283.4	2	0.0461	-1.684	5.647	0.980
13-Jun-95	307.9	3	0.0745	-1.443	5.730	0.979
26-Jul-95	340.6	4	0.1028	-1.266	5.831	0.978
24-Jun-94	351.4	5	0.1312	-1.121	5.862	0.978
23-Jul-94	373.1	6	0.1596	-0.996	5.922	0.978
5-Oct-94	383.7	7	0.1879	-0.885	5.950	0.978
14-Sep-95	387.8	8	0.2163	-0.785	5.961	0.978
28-Jun-95	397.7	9	0.2447	-0.691	5.986	0.977
30-Nov-93	409.5	10	0.2730	-0.604	6.015	0.975
20-Dec-93	418.8	11	0.3014	-0.520	6.038	0.973
9-Sep-94	428.3	12	0.3298	-0.441	6.060	0.970
26-Oct-93	435.7	13	0.3582	-0.363	6.077	0.968
15-Feb-94	447.3	14	0.3865	-0.288	6.103	0.965
23-May-95	494.1	15	0.4149	-0.215	6.203	0.963
20-Dec-93	497.6	16	0.4433	-0.143	6.210	0.959
19-Jan-94	513.0	17	0.4716	-0.071	6.240	0.955
20-May-94	519.2	18	0.5000	0.000	6.252	0.950
19-Jan-94	543.4	19	0.5284	0.071	6.298	0.947
3-May-94	550.0	20	0.5567	0.143	6.310	0.944
8-Jun-94	668.1	21	0.5851	0.215	6.504	0.947
25-Apr-95	685.8	22	0.6135	0.288	6.531	0.946
15-Nov-94	710.4	23	0.6418	0.363	6.566	0.945
13-Apr-95	720.7	24	0.6702	0.441	6.580	0.949
8-Mar-95	722.7	25	0.6986	0.520	6.583	0.951
23-Mar-94	727.0	26	0.7270	0.604	6.589	0.949
7-Mar-94	746.0	27	0.7553	0.691	6.615	0.941
6-Apr-94	763.7	28	0.7837	0.785	6.638	0.928
14-Dec-94	800.5	29	0.8121	0.885	6.685	0.910
10-May-95	816.5	30	0.8404	0.996	6.705	0.882
15-Aug-95	892.6	31	0.8688	1.121	6.794	0.864
10-Feb-95	1107.3	32	0.8972	1.266	7.010	
22-Mar-95	1135.4	33	0.9255	1.443	7.035	
11-Jan-95	1179.3	34	0.9539	1.684	7.073	
18-Apr-94	1406.9	35	0.9823	2.103	7.249	

update for EV, CV:

dZn		SF12	1,384	1380
LN Analysis		dZn	0.40	0.405

Concentration

Conc. Data, EV=1380 ug/L CV=0.405

Avg:	1,384
SD:	560
CV:	0.40
Min:	474
Max:	2,840
Median:	1,380

Data-based LN

u	ln[dZn]	[dZn]
3	8.3	4125
0	7.16	1283
-3	5.99	399

		0.953	0.953
u=mLn(Conc.)+b:		1415.9	1420
update for r2, EV, CV: **r2=0.953, EV=1420 ug/L CV=0.511; max r2=0.97**		0.511	0.511

r2 u,lnConc:	0.953	u	lnConc.	Conc.
slope, m:	2.075	3	8.59	5353
intercept, b:	-14.813	0	7.14	1261
N:	35	-3	5.69	297
E[Conc]:	1415.9	Parameter Estimates		
SD[Conc]:	724	from LN regression		
CV[Conc]:	0.51	update graph label		

Date	dZn Concentration ug/L Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.967 r2 forward
		N: 35				
update and rank for new data						
23-May-95	474	1	0.0177	-2.103	6.161	0.953
10-May-95	489	2	0.0461	-1.684	6.192	0.946
13-Jun-95	536	3	0.0745	-1.443	6.284	0.942
3-May-94	623	4	0.1028	-1.266	6.435	0.943
20-May-94	623	5	0.1312	-1.121	6.435	0.943
28-Jun-95	799	6	0.1596	-0.996	6.683	0.956
18-Apr-94	879	7	0.1879	-0.885	6.779	0.955
8-Jun-94	924	8	0.2163	-0.785	6.829	0.951
24-Jun-94	924	9	0.2447	-0.691	6.829	0.947
12-Jul-95	934	10	0.2730	-0.604	6.839	0.946
3-Oct-91	1020	11	0.3014	-0.520	6.928	0.950
25-Apr-95	1080	12	0.3298	-0.441	6.985	0.950
26-Jul-95	1160	13	0.3582	-0.363	7.056	0.949
6-Apr-94	1170	14	0.3865	-0.288	7.065	0.945
23-Jul-94	1190	15	0.4149	-0.215	7.082	0.943
13-Apr-95	1210	16	0.4433	-0.143	7.098	0.944
8-Mar-95	1340	17	0.4716	-0.071	7.200	0.954
15-Aug-95	1380	18	0.5000	0.000	7.230	0.952
14-Sep-95	1480	19	0.5284	0.071	7.300	0.949
5-Oct-94	1500	20	0.5567	0.143	7.313	0.943
9-Sep-94	1570	21	0.5851	0.215	7.359	0.936
22-Mar-95	1600	22	0.6135	0.288	7.378	0.929
10-Feb-95	1650	23	0.6418	0.363	7.409	0.921
30-Nov-93	1720	24	0.6702	0.441	7.450	0.914
7-Mar-94	1770	25	0.6986	0.520	7.479	0.916
23-Mar-94	1770	26	0.7270	0.604	7.479	0.930
11-Jan-95	1790	27	0.7553	0.691	7.490	0.939
15-Feb-94	1820	28	0.7837	0.785	7.507	0.948
26-Oct-93	1830	29	0.8121	0.885	7.512	0.961
19-Jan-94	1850	30	0.8404	0.996	7.523	0.967
19-Jan-94	1850	31	0.8688	1.121	7.523	0.964
20-Dec-93	2090	32	0.8972	1.266	7.645	
20-Dec-93	2090	33	0.9255	1.443	7.645	
15-Nov-94	2460	34	0.9539	1.684	7.808	
14-Dec-94	2840	35	0.9823	2.103	7.952	

update for EV, CV:

dZn		**SF12**			98	97.6
LN Analysis		**dZn**			0.66	0.664
Discharge, Q		**Q Data, EV=97.6 cfs CV=0.664**				
Avg:	**98**	**Q Data-based LN**				
SD:	**65**	u	lnQ	Q		
CV:	**0.66**	3	6.2	499		
Min:	**37**	0	4.40	81		
Max:	**310**	-3	2.58	13		
Median:	**76**					

					0.922	0.922
					98.9	98.9
u=mLn(Q)+b:					0.67	0.668

update for r2, EV, CV: **r2=0.922, EV=98.9 cfs CV=0.668; max r2=0.97**

r2 u,lnQ:	0.922	u	lnQ	Q
slope, m:	1.647	3	6.23	509
intercept, b:	-7.262	0	4.41	82
N:	35	-3	2.59	13
E[Q]:	98.9	Parameter Estimates		
SD[Q]:	66	from LN regression		
CV[Q]:	0.67	update graph label		

N: 35

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 = 0.965 r2 forward
update and rank for new data						
20-Dec-93	37.25	1	0.0177	-2.103	3.618	0.922
26-Oct-93	44.25	2	0.0461	-1.684	3.790	0.935
30-Nov-93	44.25	3	0.0745	-1.443	3.790	0.949
20-Dec-93	44.25	4	0.1028	-1.266	3.790	0.958
3-Oct-91	44.3	5	0.1312	-1.121	3.791	0.962
15-Feb-94	45.68	6	0.1596	-0.996	3.822	0.964
5-Oct-94	47.55	7	0.1879	-0.885	3.862	0.965
14-Sep-95	48.71	8	0.2163	-0.785	3.886	0.965
9-Sep-94	50.71	9	0.2447	-0.691	3.926	0.964
19-Jan-94	51.54	10	0.2730	-0.604	3.942	0.962
14-Dec-94	52.39	11	0.3014	-0.520	3.959	0.960
15-Nov-94	53.68	12	0.3298	-0.441	3.983	0.956
26-Jul-95	54.57	13	0.3582	-0.363	3.999	0.952
19-Jan-94	54.6	14	0.3865	-0.288	4.000	0.948
12-Jul-95	56.39	15	0.4149	-0.215	4.032	0.944
23-Jul-94	58.28	16	0.4433	-0.143	4.065	0.943
24-Jun-94	70.68	17	0.4716	-0.071	4.258	0.948
23-Mar-94	76.34	18	0.5000	0.000	4.335	0.943
7-Mar-94	78.34	19	0.5284	0.071	4.361	0.937
28-Jun-95	92.51	20	0.5567	0.143	4.527	0.932
8-Mar-95	100.24	21	0.5851	0.215	4.608	0.925
13-Jun-95	106.76	22	0.6135	0.288	4.671	0.919
13-Apr-95	110.71	23	0.6418	0.363	4.707	0.918
25-Apr-95	118.03	24	0.6702	0.441	4.771	0.917
15-Aug-95	120.22	25	0.6986	0.520	4.789	0.925
6-Apr-94	121.33	26	0.7270	0.604	4.799	0.933
11-Jan-95	122.46	27	0.7553	0.691	4.808	0.937
10-Feb-95	124.74	28	0.7837	0.785	4.826	0.935
22-Mar-95	131.9	29	0.8121	0.885	4.882	0.926
8-Jun-94	134.39	30	0.8404	0.996	4.901	0.910
20-May-94	154.9	31	0.8688	1.121	5.043	0.876
3-May-94	164.09	32	0.8972	1.266	5.100	
23-May-95	193.74	33	0.9255	1.443	5.267	
18-Apr-94	297.51	34	0.9539	1.684	5.695	
10-May-95	310.37	35	0.9823	2.103	5.738	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SF12 **Date:** 13-Jun-00

Chemical: tCd **Analyst:** J.MacLachlan

Notes:

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,577	96	9	4	0.00	0.00	0.00
SD:	275	64	3	2	1.00	1.00	1.00
CV:	0.01	0.67	0.33	0.50			
Min:	33,514	37	4	1.9	-0.92	-1.63	-1.08
Max:	34,956	310	17	11	3.32	2.66	3.11
Median:	34,574	74	9	4	-0.36	0.01	-0.30

tCd SF12 : Concentration v. Discharge, Q

					Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.299)		update r2	0.30	0.299	r2:	0.067	0.128
r2 Q,[COC]:	0.30	[tCd]	Q		m:	0.0606	0.00072
slope, m:	-0.03	11	37.3		b:	-1999	-20.64
intercept, b:	11.5	9	96.4				
N: 36		4	310				
LnConc. = mLn{Q}+b (r2=0.399)		update r2	0.40	0.399			
r2 lnQ,ln[COC]:	0.40	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.40	2.46	3.62	12	37		
intercept, b:	3.89	2.08	4.57	8	96		
N: 36		1.61	5.74	5	310		

N= 36

	Sampling Date	Q Discharge	tCd Concentration	tCd Load	Ln Q	Ln tCd Conc.	Ln tCd Load	tCd SF12 Standardized Values = (x - Avg)/SD Q	Conc	Load	for graph 0
update for new data		cfs	ug/L	lbs/day							
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis				
MFG	3-Oct-91	44.3	8	1.9	3.79	2.08	0.65	-0.81	-0.36	-1.08	
IDEQ	26-Oct-93	44.25	10	2.4	3.79	2.30	0.87	-0.81	0.31	-0.85	
IDEQ	30-Nov-93	44.25	10.1	2.4	3.79	2.31	0.88	-0.81	0.35	-0.84	
IDEQ	20-Dec-93	44.25	12.2	2.9	3.79	2.50	1.07	-0.81	1.05	-0.60	
IDEQ	20-Dec-93	37.25	12.2	2.4	3.62	2.50	0.89	-0.92	1.05	-0.82	
IDEQ	19-Jan-94	51.54	10.9	3.0	3.94	2.39	1.11	-0.70	0.62	-0.54	
IDEQ	19-Jan-94	54.6	10.9	3.2	4.00	2.39	1.16	-0.65	0.62	-0.45	
IDEQ	15-Feb-94	45.68	11	2.7	3.82	2.40	0.99	-0.79	0.65	-0.69	
IDEQ	7-Mar-94	78.34	9.4	4.0	4.36	2.24	1.38	-0.28	0.11	-0.08	
IDEQ	23-Mar-94	76.34	10	4.1	4.34	2.30	1.41	-0.31	0.31	-0.01	
IDEQ	6-Apr-94	121.33	7.4	4.8	4.80	2.00	1.57	0.39	-0.56	0.34	
IDEQ	18-Apr-94	297.51	6.6	10.6	5.70	1.89	2.36	3.12	-0.83	3.11	
IDEQ	3-May-94	164.09	4.8	4.2	5.10	1.57	1.44	1.05	-1.43	0.05	
IDEQ	20-May-94	154.9	4.6	3.8	5.04	1.53	1.34	0.91	-1.50	-0.15	
IDEQ	8-Jun-94	134.39	5.8	4.2	4.90	1.76	1.43	0.59	-1.10	0.03	
IDEQ	24-Jun-94	70.68	6.8	2.6	4.26	1.92	0.95	-0.40	-0.76	-0.75	
IDEQ	23-Jul-94	58.28	9.2	2.9	4.07	2.22	1.06	-0.59	0.05	-0.61	
IDEQ	16-Aug-94	52.82	11	3.1	3.97	2.40	1.14	-0.68	0.65	-0.49	
IDEQ	9-Sep-94	50.71	9	2.5	3.93	2.20	0.90	-0.71	-0.02	-0.81	
IDEQ	5-Oct-94	47.55	12	3.1	3.86	2.48	1.12	-0.76	0.99	-0.52	
IDEQ	15-Nov-94	53.68	14	4.0	3.98	2.64	1.40	-0.66	1.66	-0.05	
IDEQ	14-Dec-94	52.39	17	4.8	3.96	2.83	1.57	-0.68	2.66	0.32	
IDEQ	11-Jan-95	122.46	13	8.6	4.81	2.56	2.15	0.40	1.32	2.14	
IDEQ	10-Feb-95	124.74	11	7.4	4.83	2.40	2.00	0.44	0.65	1.57	
IDEQ	8-Mar-95	100.24	9	4.9	4.61	2.20	1.58	0.06	-0.02	0.35	
IDEQ	22-Mar-95	131.9	13	9.2	4.88	2.56	2.22	0.55	1.32	2.46	
IDEQ	13-Apr-95	110.71	8.3	4.9	4.71	2.12	1.60	0.22	-0.26	0.39	
IDEQ	25-Apr-95	118.03	7.2	4.6	4.77	1.97	1.52	0.34	-0.63	0.21	
IDEQ	10-May-95	310.37	4.2	7.0	5.74	1.44	1.95	3.32	-1.63	1.39	
IDEQ	23-May-95	193.74	4.6	4.8	5.27	1.53	1.57	1.51	-1.50	0.32	
IDEQ	13-Jun-95	106.76	4.8	2.8	4.67	1.57	1.01	0.16	-1.43	-0.67	
IDEQ	28-Jun-95	92.51	5.2	2.6	4.53	1.65	0.95	-0.06	-1.30	-0.75	
IDEQ	12-Jul-95	56.39	6.7	2.0	4.03	1.90	0.71	-0.62	-0.79	-1.02	
IDEQ	26-Jul-95	54.57	8	2.3	4.00	2.08	0.85	-0.65	-0.36	-0.86	
IDEQ	15-Aug-95	120.22	8.8	5.7	4.79	2.17	1.74	0.37	-0.09	0.75	
IDEQ	14-Sep-95	48.71	9.6	2.5	3.89	2.26	0.92	-0.74	0.18	-0.78	

tCd

Concentration over time analysis

tCd SF12			r2	Slope, m
			Concentration over time	
LnConc.=mTime+b All data r2, m:			**0.031**	**-0.00022**
	Time	**Ln[COC]**	**[COC]**	
first:	3-Oct-91	2.38	11	
mid:	28-Aug-94	2.15	9	
last:	14-Sep-95	2.06	8	
LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1	
	14-Sep-95	0.00	1	

Load over time analysis

tCd SF12				
			Load over time	
LnLoad=mTime+b All data r2, m:			**0.101**	**0.00050**
	Time	**LnLoad**	**Load**	
first:	3-Oct-91	0.79	2	
mid:	28-Aug-94	1.32	4	
last:	14-Sep-95	1.51	5	
LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1	
	14-Sep-95	0.00	1	

max r2: 0.938			max r2: 0.551		
Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
only on >4 data points delete last 4 rows			only on >4 data points: delete last 4 rows		
0.031	-0.00022	9.88	0.101	0.00050	-15.98
0.067	-0.00044	17.24	0.040	0.00040	-12.57
0.062	-0.00043	17.18	0.025	0.00032	-9.77
0.056	-0.00043	16.91	0.012	0.00023	-6.65
0.040	-0.00037	14.88	0.007	0.00017	-4.66
0.024	-0.00030	12.34	0.001	0.00005	-0.49
0.015	-0.00024	10.48	0.000	-0.00002	2.19
0.007	-0.00017	8.11	0.002	-0.00010	4.94
0.002	-0.00009	5.15	0.011	-0.00025	10.14
0.000	-0.00004	3.51	0.013	-0.00029	11.59
0.000	0.00004	0.64	0.015	-0.00033	12.83
0.000	0.00002	1.51	0.012	-0.00030	11.91
0.001	-0.00007	4.57	0.002	0.00011	-2.48
0.019	-0.00036	14.63	0.003	0.00016	-4.24
0.084	-0.00078	29.06	0.003	0.00017	-4.41
0.173	-0.00118	43.01	0.005	0.00023	-6.79
0.275	-0.00161	58.25	0.000	-0.00008	4.03
0.317	-0.00191	68.59	0.011	-0.00042	15.93
0.316	-0.00211	75.42	0.037	-0.00083	30.45
0.383	-0.00263	93.61	0.146	-0.00181	64.39
0.367	-0.00290	102.99	0.310	-0.00299	105.50
0.292	-0.00280	99.50	0.443	-0.00408	143.65
0.152	-0.00201	71.97	0.551	-0.00524	183.92
0.053	-0.00125	45.64	0.478	-0.00523	183.53
0.005	-0.00043	17.01	0.407	-0.00518	182.08
0.001	0.00022	-5.90	0.436	-0.00603	211.64
0.225	0.00284	-97.06	0.280	-0.00460	161.78
0.536	0.00478	-165.02	0.230	-0.00461	161.91
0.938	0.00730	-252.86	0.189	-0.00474	166.71
0.922	0.00752	-260.64	0.018	-0.00135	48.09
0.901	0.00798	-276.66	0.071	0.00285	-98.44
0.850	0.00736	-255.08	0.097	0.00413	-143.08

update for EV, CV:

tCd		**SF12**		
LN Analysis		**tCd**		
Load		**Load Data, EV=4.14 lbs/day CV=0.5**		
Avg:	4	**Load Data-based LN**		
SD:	2	u	ln tCd Load	tCd Load
CV:	0.50	3	2.7	15
Min:	1.9	0	1.31	4
Max:	11	-3	-0.11	0.9
Median:	4			
		4	4.14	
		0.50	0.5	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.944, EV=4.16lbs/day CV=0.488; max r2=0.98**

r2 u,lnLoad:	0.944	u	lnLoad	Load		
slope, m:	2.162	3	2.71	15		
intercept, b:	-2.850	0	1.32	4		
N:	36	-3	-0.07	0.9		
E[Load]:	4.2	Parameter Estimates			0.944	0.944
SD[Load]:	2	from LN regression			4.2	4.16
CV[Load]:	0.49	update graph label			0.5	0.488
					max r2	
		N: 36			0.977	

Date	tCd Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
3-Oct-91	1.9	1	0.0172	-2.114	0.645	0.944
12-Jul-95	2.0	2	0.0448	-1.697	0.709	0.951
26-Jul-95	2.3	3	0.0724	-1.458	0.854	0.954
26-Oct-93	2.4	4	0.1000	-1.282	0.867	0.963
30-Nov-93	2.4	5	0.1276	-1.138	0.877	0.969
20-Dec-93	2.4	6	0.1552	-1.014	0.894	0.973
9-Sep-94	2.5	7	0.1828	-0.905	0.898	0.976
14-Sep-95	2.5	8	0.2103	-0.805	0.923	0.976
24-Jun-94	2.6	9	0.2379	-0.713	0.950	0.977
28-Jun-95	2.6	10	0.2655	-0.626	0.951	0.977
15-Feb-94	2.7	11	0.2931	-0.544	0.994	0.975
13-Jun-95	2.8	12	0.3207	-0.466	1.014	0.974
23-Jul-94	2.9	13	0.3483	-0.390	1.059	0.972
20-Dec-93	2.9	14	0.3759	-0.316	1.066	0.970
19-Jan-94	3.0	15	0.4034	-0.244	1.106	0.967
5-Oct-94	3.1	16	0.4310	-0.174	1.122	0.964
16-Aug-94	3.1	17	0.4586	-0.104	1.140	0.960
19-Jan-94	3.2	18	0.4862	-0.035	1.164	0.957
20-May-94	3.8	19	0.5138	0.035	1.344	0.954
7-Mar-94	4.0	20	0.5414	0.104	1.377	0.953
15-Nov-94	4.0	21	0.5690	0.174	1.397	0.953
23-Mar-94	4.1	22	0.5966	0.244	1.413	0.952
8-Jun-94	4.2	23	0.6241	0.316	1.434	0.950
3-May-94	4.2	24	0.6517	0.390	1.444	0.946
25-Apr-95	4.6	25	0.6793	0.466	1.520	0.940
14-Dec-94	4.8	26	0.7069	0.544	1.567	0.937
23-May-95	4.8	27	0.7345	0.626	1.568	0.937
6-Apr-94	4.8	28	0.7621	0.713	1.575	0.930
8-Mar-95	4.9	29	0.7897	0.805	1.580	0.915
13-Apr-95	4.9	30	0.8172	0.905	1.598	0.895
15-Aug-95	5.7	31	0.8448	1.014	1.739	0.908
10-May-95	7.0	32	0.8724	1.138	1.948	0.963
10-Feb-95	7.4	33	0.9000	1.282	1.999	
11-Jan-95	8.6	34	0.9276	1.458	2.148	
22-Mar-95	9.2	35	0.9552	1.697	2.222	
18-Apr-94	10.6	36	0.9828	2.114	2.357	

		update for EV, CV:			
tCd		SF12		9	9.06
LN Analysis		tCd		0.33	0.329
Concentration		Conc. Data, EV=9.06 ug/L CV=0.329			
Avg:	9	Data-based LN			
SD:	3	u	ln[tCd]	[tCd]	
CV:	0.33	3	3.1	23	
Min:	4	0	2.15	9	
Max:	17	-3	1.19	3	
Median:	9				

					0.962	0.962
u=mLn[Conc.]+b:					9.2	9.16
update for r2, EV, CV:	r2=0.962, EV=9.16 ug/L CV=0.385; max r2=0.98				0.385	0.385
	r2 u,lnConc:	0.962	u	lnConc.	Conc.	
	slope, m:	2.691	3	3.26	26	
	intercept, b:	-5.774	0	2.15	9	
	N:	36	-3	1.03	3	
	E[Conc]:	9.2	Parameter Estimates			
	SD[Conc]:	4	from LN regression			
	CV[Conc]:	0.38	update graph label			

	tCd	N: 36				max r2 0.981
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
10-May-95	4.2	1	0.0172	-2.114	1.435	0.962
20-May-94	4.6	2	0.0448	-1.697	1.526	0.957
23-May-95	4.6	3	0.0724	-1.458	1.526	0.952
3-May-94	4.8	4	0.1000	-1.282	1.569	0.948
13-Jun-95	4.8	5	0.1276	-1.138	1.569	0.947
28-Jun-95	5.2	6	0.1552	-1.014	1.649	0.955
8-Jun-94	5.8	7	0.1828	-0.905	1.758	0.966
18-Apr-94	6.6	8	0.2103	-0.805	1.887	0.973
12-Jul-95	6.7	9	0.2379	-0.713	1.902	0.972
24-Jun-94	6.8	10	0.2655	-0.626	1.917	0.972
25-Apr-95	7.2	11	0.2931	-0.544	1.974	0.976
6-Apr-94	7.4	12	0.3207	-0.466	2.001	0.977
3-Oct-91	8	13	0.3483	-0.390	2.079	0.981
26-Jul-95	8	14	0.3759	-0.316	2.079	0.979
13-Apr-95	8.3	15	0.4034	-0.244	2.116	0.980
15-Aug-95	8.8	16	0.4310	-0.174	2.175	0.979
9-Sep-94	9	17	0.4586	-0.104	2.197	0.977
8-Mar-95	9	18	0.4862	-0.035	2.197	0.975
23-Jul-94	9.2	19	0.5138	0.035	2.219	0.973
7-Mar-94	9.4	20	0.5414	0.104	2.241	0.970
14-Sep-95	9.6	21	0.5690	0.174	2.262	0.966
26-Oct-93	10	22	0.5966	0.244	2.303	0.962
23-Mar-94	10	23	0.6241	0.316	2.303	0.958
30-Nov-93	10.1	24	0.6517	0.390	2.313	0.952
19-Jan-94	10.9	25	0.6793	0.466	2.389	0.945
19-Jan-94	10.9	26	0.7069	0.544	2.389	0.951
15-Feb-94	11	27	0.7345	0.626	2.398	0.952
16-Aug-94	11	28	0.7621	0.713	2.398	0.950
10-Feb-95	11	29	0.7897	0.805	2.398	0.941
5-Oct-94	12	30	0.8172	0.905	2.485	0.927
20-Dec-93	12.2	31	0.8448	1.014	2.501	0.935
20-Dec-93	12.2	32	0.8724	1.138	2.501	0.947
11-Jan-95	13	33	0.9000	1.282	2.565	
22-Mar-95	13	34	0.9276	1.458	2.565	
15-Nov-94	14	35	0.9552	1.697	2.639	
14-Dec-94	17	36	0.9828	2.114	2.833	

update for EV, CV:

tCd		**SF12**			96	96.4
LN Analysis		**tCd**			0.67	0.668
Discharge, Q		**Q Data, EV=96.4 cfs CV=0.668**				
Avg:	**96**	**Q Data-based LN**				
SD:	**64**	u	lnQ	Q		
CV:	**0.67**	3	6.2	496		
Min:	**37**	0	4.38	80		
Max:	**310**	-3	2.56	13		
Median:	**74**					

	0.916	0.916
	97.6	97.6
u=mLn(Q)+b:	0.67	0.665

update for r2, EV, CV: **r2=0.916, EV=97.6 cfs CV=0.665; max r2=0.96**

r2 u,lnQ:	0.916	u	lnQ	Q
slope, m:	1.652	3	6.21	499
intercept, b:	-7.265	0	4.40	81
N:	36	-3	2.58	13
E[Q]:	97.6	Parameter Estimates		
SD[Q]:	65	from LN regression		
CV[Q]:	0.67	update graph label		

N: 36

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.963 r2 forward
update and rank for new data						
20-Dec-93	37.25	1	0.0172	-2.114	3.618	0.916
26-Oct-93	44.25	2	0.0448	-1.697	3.790	0.929
30-Nov-93	44.25	3	0.0724	-1.458	3.790	0.944
20-Dec-93	44.25	4	0.1000	-1.282	3.790	0.953
3-Oct-91	44.3	5	0.1276	-1.138	3.791	0.958
15-Feb-94	45.68	6	0.1552	-1.014	3.822	0.960
5-Oct-94	47.55	7	0.1828	-0.905	3.862	0.962
14-Sep-95	48.71	8	0.2103	-0.805	3.886	0.963
9-Sep-94	50.71	9	0.2379	-0.713	3.926	0.963
19-Jan-94	51.54	10	0.2655	-0.626	3.942	0.962
14-Dec-94	52.39	11	0.2931	-0.544	3.959	0.961
16-Aug-94	52.82	12	0.3207	-0.466	3.967	0.959
15-Nov-94	53.68	13	0.3483	-0.390	3.983	0.955
26-Jul-95	54.57	14	0.3759	-0.316	3.999	0.951
19-Jan-94	54.6	15	0.4034	-0.244	4.000	0.947
12-Jul-95	56.39	16	0.4310	-0.174	4.032	0.944
23-Jul-94	58.28	17	0.4586	-0.104	4.065	0.943
24-Jun-94	70.68	18	0.4862	-0.035	4.258	0.948
23-Mar-94	76.34	19	0.5138	0.035	4.335	0.943
7-Mar-94	78.34	20	0.5414	0.104	4.361	0.938
28-Jun-95	92.51	21	0.5690	0.174	4.527	0.933
8-Mar-95	100.24	22	0.5966	0.244	4.608	0.926
13-Jun-95	106.76	23	0.6241	0.316	4.671	0.920
13-Apr-95	110.71	24	0.6517	0.390	4.707	0.918
25-Apr-95	118.03	25	0.6793	0.466	4.771	0.918
15-Aug-95	120.22	26	0.7069	0.544	4.789	0.926
6-Apr-94	121.33	27	0.7345	0.626	4.799	0.933
11-Jan-95	122.46	28	0.7621	0.713	4.808	0.937
10-Feb-95	124.74	29	0.7897	0.805	4.826	0.935
22-Mar-95	131.9	30	0.8172	0.905	4.882	0.926
8-Jun-94	134.39	31	0.8448	1.014	4.901	0.910
20-May-94	154.9	32	0.8724	1.138	5.043	0.876
3-May-94	164.09	33	0.9000	1.282	5.100	
23-May-95	193.74	34	0.9276	1.458	5.267	
18-Apr-94	297.51	35	0.9552	1.697	5.695	
10-May-95	310.37	36	0.9828	2.114	5.738	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SF12 **Date:** 13-Jun-00
Chemical: tPb **Analyst:** J.MacLachlan
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,577	96	36	24	0.00	0.00	0.00
SD:	275	64	30	50	1.00	1.00	1.00
CV:	0.01	0.67	0.83	2.06			
Min:	33,514	37	21	4.2	-0.92	-0.51	-0.40
Max:	34,956	310	194	311	3.32	5.24	5.73
Median:	34,574	74	29	11	-0.36	-0.25	-0.26

tPb SF12 : Concentration v. Discharge, Q Q = mTime +b LnQ = mTime +b

Conc. = mQ+b (r2=0.26)		update r2	0.26	0.26	r2:	0.067	0.128
r2 Q,[COC]:	0.26	[tPb]	Q		m:	0.0606	0.00072
slope, m:	0.2	22	37.3		b:	-1999	-20.64
intercept, b:	13.4	36	96.4				
N: 36		87	310				
LnConc. = mLn(Q)+b (r2=0.18)		update r2	0.18	0.18			
r2 lnQ,ln[COC]:	0.18	ln[tPb]	ln Q	[tPb]	Q		
slope, m:	0.34	3.19	3.62	24	37		
intercept, b:	1.98	3.51	4.57	33	96		
N: 36		3.90	5.74	49	310		

N= 36

update for new data	Sampling Date	Q Discharge cfs	tPb Concentration ug/L	tPb Load lbs/day	Ln Q	Ln tPb Conc.	Ln tPb Load	for graph 0 tPb SF12 Standardized Values = (x - Avg)/SD Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	3-Oct-91	44.3	23	5.5	3.79	3.14	1.70	-0.81	-0.44	-0.37
IDEQ	26-Oct-93	44.25	26	6.2	3.79	3.26	1.82	-0.81	-0.35	-0.36
IDEQ	30-Nov-93	44.25	98	23.3	3.79	4.58	3.15	-0.81	2.05	-0.02
IDEQ	20-Dec-93	44.25	21	5.0	3.79	3.04	1.61	-0.81	-0.51	-0.38
IDEQ	20-Dec-93	37.25	21	4.2	3.62	3.04	1.44	-0.92	-0.51	-0.40
IDEQ	19-Jan-94	51.54	22	6.1	3.94	3.09	1.81	-0.70	-0.48	-0.36
IDEQ	19-Jan-94	54.6	22	6.5	4.00	3.09	1.87	-0.65	-0.48	-0.35
IDEQ	15-Feb-94	45.68	24	5.9	3.82	3.18	1.77	-0.79	-0.41	-0.37
IDEQ	7-Mar-94	78.34	29	12.2	4.36	3.37	2.50	-0.28	-0.25	-0.24
IDEQ	23-Mar-94	76.34	28	11.5	4.34	3.33	2.44	-0.31	-0.28	-0.25
IDEQ	6-Apr-94	121.33	32	20.9	4.80	3.47	3.04	0.39	-0.15	-0.07
IDEQ	18-Apr-94	297.51	194	310.5	5.70	5.27	5.74	3.12	5.24	5.73
IDEQ	3-May-94	164.09	34	30.0	5.10	3.53	3.40	1.05	-0.08	0.12
IDEQ	20-May-94	154.9	24	20.0	5.04	3.18	3.00	0.91	-0.41	-0.08
IDEQ	8-Jun-94	134.39	25	18.1	4.90	3.22	2.89	0.59	-0.38	-0.12
IDEQ	24-Jun-94	70.68	29	11.0	4.26	3.37	2.40	-0.40	-0.25	-0.26
IDEQ	23-Jul-94	58.28	36	11.3	4.07	3.58	2.42	-0.59	-0.01	-0.26
IDEQ	16-Aug-94	52.82	26	7.4	3.97	3.26	2.00	-0.68	-0.35	-0.34
IDEQ	9-Sep-94	50.71	29	7.9	3.93	3.37	2.07	-0.71	-0.25	-0.33
IDEQ	5-Oct-94	47.55	29	7.4	3.86	3.37	2.00	-0.76	-0.25	-0.34
IDEQ	15-Nov-94	53.68	31	9.0	3.98	3.43	2.19	-0.66	-0.18	-0.31
IDEQ	14-Dec-94	52.39	26	7.3	3.96	3.26	1.99	-0.68	-0.35	-0.34
IDEQ	11-Jan-95	122.46	57	37.6	4.81	4.04	3.63	0.40	0.68	0.27
IDEQ	10-Feb-95	124.74	42	28.2	4.83	3.74	3.34	0.44	0.19	0.08
IDEQ	8-Mar-95	100.24	25	13.5	4.61	3.22	2.60	0.06	-0.38	-0.21
IDEQ	22-Mar-95	131.9	39	27.7	4.88	3.66	3.32	0.55	0.09	0.07
IDEQ	13-Apr-95	110.71	35	20.8	4.71	3.56	3.04	0.22	-0.05	-0.07
IDEQ	25-Apr-95	118.03	29	18.4	4.77	3.37	2.91	0.34	-0.25	-0.12
IDEQ	10-May-95	310.37	40	66.8	5.74	3.69	4.20	3.32	0.12	0.85
IDEQ	23-May-95	193.74	23	24.0	5.27	3.14	3.18	1.51	-0.44	0.00
IDEQ	13-Jun-95	106.76	57	32.7	4.67	4.04	3.49	0.16	0.68	0.17
IDEQ	28-Jun-95	92.51	21	10.5	4.53	3.04	2.35	-0.06	-0.51	-0.28
IDEQ	12-Jul-95	56.39	24	7.3	4.03	3.18	1.99	-0.62	-0.41	-0.34
IDEQ	26-Jul-95	54.57	29	8.5	4.00	3.37	2.14	-0.65	-0.25	-0.31
IDEQ	15-Aug-95	120.22	31	20.1	4.79	3.43	3.00	0.37	-0.18	-0.08
IDEQ	14-Sep-95	48.71	29	7.6	3.89	3.37	2.03	-0.74	-0.25	-0.33

tPb

Concentration over time analysis

	tPb	SF12		r2	Slope, m
	LnConc.=mTime+b All data r2, m:			**0.005**	**0.00011**
	Time	**Ln[COC]**	**[COC]**		
first:	3-Oct-91	3.33	28		
mid:	28-Aug-94	3.45	32		
last:	14-Sep-95	3.49	33		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	14-Sep-95	0.00	1		

Load over time analysis

	tPb	SF12		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.075**	**0.00084**
	Time	**LnLoad**	**Load**		
first:	3-Oct-91	1.73	6		
mid:	28-Aug-94	2.62	14		
last:	14-Sep-95	2.94	19		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	14-Sep-95	0.00	1		

max r2: 0.617

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.005	0.00011	-0.47
0.000	-0.00002	4.26
0.001	-0.00007	6.03
0.009	0.00019	-3.13
0.003	-0.00011	-0.25
0.000	0.00000	3.34
0.002	-0.00010	6.98
0.011	-0.00023	11.62
0.024	-0.00036	15.99
0.032	-0.00044	18.82
0.046	-0.00055	22.70
0.055	-0.00063	25.50
0.007	0.00013	-1.23
0.014	0.00020	-3.65
0.002	0.00008	0.63
0.001	-0.00006	5.60
0.005	-0.00015	8.52
0.001	-0.00005	5.36
0.012	-0.00029	13.39
0.028	-0.00049	20.66
0.060	-0.00082	32.17
0.089	-0.00115	43.58
0.214	-0.00202	73.72
0.078	-0.00121	45.75
0.024	-0.00073	28.90
0.093	-0.00159	58.84
0.044	-0.00122	45.97
0.023	-0.00099	37.79
0.041	-0.00155	57.52
0.000	-0.00014	8.12
0.071	-0.00272	98.22
0.617	0.00417	-142.20

max r2: 0.520

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.075	0.00084	-26.33
0.042	0.00081	-25.55
0.028	0.00068	-20.93
0.041	0.00085	-26.69
0.023	0.00065	-19.78
0.007	0.00035	-9.48
0.001	0.00012	-1.31
0.001	-0.00016	8.45
0.013	-0.00052	20.98
0.021	-0.00069	26.90
0.034	-0.00092	34.89
0.033	-0.00095	35.90
0.006	0.00032	-8.28
0.030	0.00073	-22.53
0.052	0.00102	-32.84
0.077	0.00135	-44.19
0.069	0.00139	-45.70
0.061	0.00144	-47.30
0.024	0.00099	-31.58
0.002	0.00033	-8.56
0.014	-0.00091	34.69
0.083	-0.00244	87.73
0.335	-0.00525	185.67
0.269	-0.00519	183.64
0.239	-0.00548	193.97
0.387	-0.00784	276.37
0.371	-0.00866	304.81
0.413	-0.01038	364.72
0.520	-0.01360	477.10
0.321	-0.00901	316.85
0.188	-0.00785	276.44
0.005	0.00093	-30.20

update for EV, CV:

tPb		**SF12**		
LN Analysis		**tPb**		
Load		**Load Data, EV=24.2 lbs/day CV=2.06**		
Avg:	**24**	**Load Data-based LN**		
SD:	**50**	u	ln tPb Load	tPb Load
CV:	**2.06**	3	6.2	503
Min:	**4.2**	0	2.36	11
Max:	**311**	-3	-1.51	0.2
Median:	**11**			
		24	24.2	
		2.06	2.06	

u=mLn(Load)+ b:

update for r2, EV, CV: **r2=0.88, EV=21.4lbs/day CV=1.18; max r2=0.92**

r2 u,lnLoad:	0.880	u	lnLoad	Load		
slope, m:	1.069	3	5.43	228		
intercept, b:	-2.806	0	2.62	14		
N:	36	-3	-0.18	0.8		
E[Load]:	21.4	Parameter Estimates			0.880	0.88
SD[Load]:	25	from LN regression			21.4	21.4
CV[Load]:	1.18	update graph label			1.2	1.18
					max r2	
	tPb	**N: 36**			0.923	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
20-Dec-93	**4.2**	1	0.0172	-2.114	1.437	0.880
20-Dec-93	**5.0**	2	0.0448	-1.697	1.609	0.888
3-Oct-91	**5.5**	3	0.0724	-1.458	1.701	0.893
15-Feb-94	**5.9**	4	0.1000	-1.282	1.775	0.898
19-Jan-94	**6.1**	5	0.1276	-1.138	1.808	0.901
26-Oct-93	**6.2**	6	0.1552	-1.014	1.823	0.904
19-Jan-94	**6.5**	7	0.1828	-0.905	1.866	0.903
12-Jul-95	**7.3**	8	0.2103	-0.805	1.985	0.903
14-Dec-94	**7.3**	9	0.2379	-0.713	1.992	0.904
16-Aug-94	**7.4**	10	0.2655	-0.626	2.000	0.904
5-Oct-94	**7.4**	11	0.2931	-0.544	2.004	0.902
14-Sep-95	**7.6**	12	0.3207	-0.466	2.028	0.897
9-Sep-94	**7.9**	13	0.3483	-0.390	2.068	0.891
26-Jul-95	**8.5**	14	0.3759	-0.316	2.142	0.884
15-Nov-94	**9.0**	15	0.4034	-0.244	2.192	0.876
28-Jun-95	**10.5**	16	0.4310	-0.174	2.347	0.867
24-Jun-94	**11.0**	17	0.4586	-0.104	2.400	0.861
23-Jul-94	**11.3**	18	0.4862	-0.035	2.424	0.854
23-Mar-94	**11.5**	19	0.5138	0.035	2.442	0.844
7-Mar-94	**12.2**	20	0.5414	0.104	2.503	0.832
8-Mar-95	**13.5**	21	0.5690	0.174	2.601	0.817
8-Jun-94	**18.1**	22	0.5966	0.244	2.895	0.802
25-Apr-95	**18.4**	23	0.6241	0.316	2.913	0.807
20-May-94	**20.0**	24	0.6517	0.390	2.996	0.810
15-Aug-95	**20.1**	25	0.6793	0.466	2.998	0.821
13-Apr-95	**20.8**	26	0.7069	0.544	3.037	0.828
6-Apr-94	**20.9**	27	0.7345	0.626	3.039	0.837
30-Nov-93	**23.3**	28	0.7621	0.713	3.150	0.839
23-May-95	**24.0**	29	0.7897	0.805	3.177	0.852
22-Mar-95	**27.7**	30	0.8172	0.905	3.321	0.862
10-Feb-95	**28.2**	31	0.8448	1.014	3.339	0.893
3-May-94	**30.0**	32	0.8724	1.138	3.402	0.923
13-Jun-95	**32.7**	33	0.9000	1.282	3.489	
11-Jan-95	**37.6**	34	0.9276	1.458	3.626	
10-May-95	**66.8**	35	0.9552	1.697	4.202	
18-Apr-94	**310.5**	36	0.9828	2.114	5.738	

update for EV, CV:

tPb		*SF12*		36	36.4
LN Analysis		**tPb**		0.83	0.827
Concentration		**Conc. Data, EV=36.4 ug/L CV=0.827**			
Avg:	36	**Data-based LN**			
SD:	30	u	ln[tPb]	[tPb]	
CV:	0.83	3	5.5	245	
Min:	21	0	3.33	28	
Max:	194	-3	1.17	3	
Median:	29				

					0.722	0.722
u=mLn{Conc.}+b:					36.5	36.5
update for r2, EV, CV:	**r2=0.722, EV=36.5 ug/L CV=0.579; max r2=0.97**				0.579	0.579
	r2 u,lnConc:	0.722	u	lnConc.	Conc.	
	slope, m:	1.859	3	5.07	158	
	intercept, b:	-6.417	0	3.45	32	
	N:	36	-3	1.84	6	
	E[Conc]:	36.5	Parameter Estimates			
	SD[Conc]:	21	from LN regression			
	CV[Conc]:	0.58	update graph label			

	tPb	N: 36				max r2 0.972
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	**ug/L Ranked**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
update and rank for new data						
20-Dec-93	21	1	0.0172	-2.114	3.045	0.722
20-Dec-93	21	2	0.0448	-1.697	3.045	0.745
28-Jun-95	21	3	0.0724	-1.458	3.045	0.756
19-Jan-94	22	4	0.1000	-1.282	3.091	0.761
19-Jan-94	22	5	0.1276	-1.138	3.091	0.767
3-Oct-91	23	6	0.1552	-1.014	3.135	0.771
23-May-95	23	7	0.1828	-0.905	3.135	0.777
15-Feb-94	24	8	0.2103	-0.805	3.178	0.780
20-May-94	24	9	0.2379	-0.713	3.178	0.787
12-Jul-95	24	10	0.2655	-0.626	3.178	0.791
8-Jun-94	25	11	0.2931	-0.544	3.219	0.794
8-Mar-95	25	12	0.3207	-0.466	3.219	0.799
26-Oct-93	26	13	0.3483	-0.390	3.258	0.803
16-Aug-94	26	14	0.3759	-0.316	3.258	0.810
14-Dec-94	26	15	0.4034	-0.244	3.258	0.814
23-Mar-94	28	16	0.4310	-0.174	3.332	0.817
7-Mar-94	29	17	0.4586	-0.104	3.367	0.828
24-Jun-94	29	18	0.4862	-0.035	3.367	0.843
9-Sep-94	29	19	0.5138	0.035	3.367	0.857
5-Oct-94	29	20	0.5414	0.104	3.367	0.870
25-Apr-95	29	21	0.5690	0.174	3.367	0.882
26-Jul-95	29	22	0.5966	0.244	3.367	0.892
14-Sep-95	29	23	0.6241	0.316	3.367	0.899
15-Nov-94	31	24	0.6517	0.390	3.434	0.903
15-Aug-95	31	25	0.6793	0.466	3.434	0.913
6-Apr-94	32	26	0.7069	0.544	3.466	0.919
3-May-94	34	27	0.7345	0.626	3.526	0.926
13-Apr-95	35	28	0.7621	0.713	3.555	0.937
23-Jul-94	36	29	0.7897	0.805	3.584	0.947
22-Mar-95	39	30	0.8172	0.905	3.664	0.955
10-May-95	40	31	0.8448	1.014	3.689	0.968
10-Feb-95	42	32	0.8724	1.138	3.738	0.972
11-Jan-95	57	33	0.9000	1.282	4.043	
13-Jun-95	57	34	0.9276	1.458	4.043	
30-Nov-93	98	35	0.9552	1.697	4.585	
18-Apr-94	194	36	0.9828	2.114	5.268	

update for EV, CV:

tPb		**SF12**			96	96.4
LN Analysis		**tPb**			0.67	0.668
Discharge, Q		**Q Data, EV=96.4 cfs CV=0.668**				
Avg:	**96**	**Q Data-based LN**				
SD:	**64**	u	lnQ	Q		
CV:	**0.67**	3	6.2	496		
Min:	**37**	0	4.38	80		
Max:	**310**	-3	2.56	13		
Median:	**74**					
					0.916	0.916
					97.6	97.6
	u=mLn(Q)+b:				0.67	0.665

update for r2, EV, CV: **r2=0.916, EV=97.6 cfs CV=0.665; max r2=0.96**

r2 u,lnQ:	0.916	u	lnQ	Q
slope, m:	1.652	3	6.21	499
intercept, b:	-7.265	0	4.40	81
N: 36		-3	2.58	13
E[Q]:	97.6	Parameter Estimates		
SD[Q]:	65	from LN regression		
CV[Q]:	0.67	update graph label		

	Q	N: 36				max r2 0.963
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
20-Dec-93	37.25	1	0.0172	-2.114	3.618	0.916
26-Oct-93	44.25	2	0.0448	-1.697	3.790	0.929
30-Nov-93	44.25	3	0.0724	-1.458	3.790	0.944
20-Dec-93	44.25	4	0.1000	-1.282	3.790	0.953
3-Oct-91	44.3	5	0.1276	-1.138	3.791	0.958
15-Feb-94	45.68	6	0.1552	-1.014	3.822	0.960
5-Oct-94	47.55	7	0.1828	-0.905	3.862	0.962
14-Sep-95	48.71	8	0.2103	-0.805	3.886	0.963
9-Sep-94	50.71	9	0.2379	-0.713	3.926	0.963
19-Jan-94	51.54	10	0.2655	-0.626	3.942	0.962
14-Dec-94	52.39	11	0.2931	-0.544	3.959	0.961
16-Aug-94	52.82	12	0.3207	-0.466	3.967	0.959
15-Nov-94	53.68	13	0.3483	-0.390	3.983	0.955
26-Jul-95	54.57	14	0.3759	-0.316	3.999	0.951
19-Jan-94	54.6	15	0.4034	-0.244	4.000	0.947
12-Jul-95	56.39	16	0.4310	-0.174	4.032	0.944
23-Jul-94	58.28	17	0.4586	-0.104	4.065	0.943
24-Jun-94	70.68	18	0.4862	-0.035	4.258	0.948
23-Mar-94	76.34	19	0.5138	0.035	4.335	0.943
7-Mar-94	78.34	20	0.5414	0.104	4.361	0.938
28-Jun-95	92.51	21	0.5690	0.174	4.527	0.933
8-Mar-95	100.24	22	0.5966	0.244	4.608	0.926
13-Jun-95	106.76	23	0.6241	0.316	4.671	0.920
13-Apr-95	110.71	24	0.6517	0.390	4.707	0.918
25-Apr-95	118.03	25	0.6793	0.466	4.771	0.918
15-Aug-95	120.22	26	0.7069	0.544	4.789	0.926
6-Apr-94	121.33	27	0.7345	0.626	4.799	0.933
11-Jan-95	122.46	28	0.7621	0.713	4.808	0.937
10-Feb-95	124.74	29	0.7897	0.805	4.826	0.935
22-Mar-95	131.9	30	0.8172	0.905	4.882	0.926
8-Jun-94	134.39	31	0.8448	1.014	4.901	0.910
20-May-94	154.9	32	0.8724	1.138	5.043	0.876
3-May-94	164.09	33	0.9000	1.282	5.100	
23-May-95	193.74	34	0.9276	1.458	5.267	
18-Apr-94	297.51	35	0.9552	1.697	5.695	
10-May-95	310.37	36	0.9828	2.114	5.738	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.		see comment
Station:	SF12	**Date:** 13-Jun-00
Chemical:	tZn	**Analyst:** J.MacLachlan
Notes:		
Input Discharge and Concentration Data below (in red)		

	Date	Discharge	Concentration	Load			
Avg:	34,585	98	1,406	631	0.00	0.00	0.00
SD:	275	65	549	298	1.00	1.00	1.00
CV:	0.01	0.66	0.39	0.47			
Min:	33,514	37	492	276.1	-0.94	-1.66	-1.19
Max:	34,956	310	2,800	1,633	3.29	2.54	3.36
Median:	34,586	76	1,390	546	-0.33	-0.03	-0.28

J.MacLachlan SF12			: Concentration v. Discharge, Q			Q = mTime +b	LnQ = mTime +b
Conc. = mQ+b (r2=0.329)		update r2	0.33	0.329		r2: 0.058	0.114
r2 Q,[COC]:	0.33	[tZn]	Q			m: 0.0568	0.00068
slope, m:	-4.9	1,701	37.3			b: -1867	-19.12
intercept, b:	1883.1	1,406	97.9				
N: 35		370	310				
LnConc. = mLn(Q)+b (r2=0.429)		update r2	0.43	0.429			
r2 lnQ,ln[COC]:	0.43	ln[tZn]	ln Q	[tZn]	Q		
slope, m:	-0.52	7.57	3.62	1,942	37		
intercept, b:	9.43	7.07	4.58	1,181	98		
N: 35		6.48	5.74	652	310		

for graph 0

N= 35

	Sampling Date	Q Discharge cfs	J.MacLachlan Concentration ug/L	MacLachlan Load lbs/day	Ln Q	Ln MacLachlan Conc.	Ln MacLachlan Load	J.MacLachlan SF12 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data										
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	3-Oct-91	44.3	1390	331.3	3.79	7.24	5.80	-0.83	-0.03	-1.00
IDEQ	26-Oct-93	44.25	1800	428.5	3.79	7.50	6.06	-0.83	0.72	-0.68
IDEQ	20-Dec-93	44.25	2040	485.7	3.79	7.62	6.19	-0.83	1.15	-0.49
IDEQ	20-Dec-93	37.25	2040	408.8	3.62	7.62	6.01	-0.94	1.15	-0.74
IDEQ	19-Jan-94	51.54	2030	562.9	3.94	7.62	6.33	-0.72	1.14	-0.23
IDEQ	19-Jan-94	54.6	2030	596.3	4.00	7.62	6.39	-0.67	1.14	-0.12
IDEQ	15-Feb-94	45.68	1810	444.8	3.82	7.50	6.10	-0.81	0.74	-0.62
IDEQ	7-Mar-94	78.34	1790	754.4	4.36	7.49	6.63	-0.30	0.70	0.41
IDEQ	23-Mar-94	76.34	1760	722.8	4.34	7.47	6.58	-0.33	0.64	0.31
IDEQ	6-Apr-94	121.33	1130	737.6	4.80	7.03	6.60	0.36	-0.50	0.36
IDEQ	18-Apr-94	297.51	1020	1632.6	5.70	6.93	7.40	3.09	-0.70	3.36
IDEQ	3-May-94	164.09	619	546.5	5.10	6.43	6.30	1.02	-1.43	-0.28
IDEQ	20-May-94	154.9	616	513.4	5.04	6.42	6.24	0.88	-1.44	-0.39
IDEQ	8-Jun-94	134.39	944	682.5	4.90	6.85	6.53	0.56	-0.84	0.17
IDEQ	24-Jun-94	70.68	934	355.2	4.26	6.84	5.87	-0.42	-0.86	-0.92
IDEQ	23-Jul-94	58.28	1190	373.1	4.07	7.08	5.92	-0.61	-0.39	-0.86
IDEQ	16-Aug-94	52.82	1450	412.0	3.97	7.28	6.02	-0.70	0.08	-0.73
IDEQ	9-Sep-94	50.71	1580	431.1	3.93	7.37	6.07	-0.73	0.32	-0.67
IDEQ	5-Oct-94	47.55	1540	394.0	3.86	7.34	5.98	-0.78	0.24	-0.79
IDEQ	15-Nov-94	53.68	2440	704.7	3.98	7.80	6.56	-0.68	1.88	0.25
IDEQ	14-Dec-94	52.39	2800	789.2	3.96	7.94	6.67	-0.70	2.54	0.53
IDEQ	11-Jan-95	122.46	1840	1212.3	4.81	7.52	7.10	0.38	0.79	1.95
IDEQ	10-Feb-95	124.74	1680	1127.5	4.83	7.43	7.03	0.42	0.50	1.66
IDEQ	8-Mar-95	100.24	1360	733.4	4.61	7.22	6.60	0.04	-0.08	0.34
IDEQ	22-Mar-95	131.9	1650	1170.9	4.88	7.41	7.07	0.53	0.44	1.81
IDEQ	13-Apr-95	110.71	1250	744.5	4.71	7.13	6.61	0.20	-0.28	0.38
IDEQ	25-Apr-95	118.03	1080	685.8	4.77	6.98	6.53	0.31	-0.59	0.18
IDEQ	10-May-95	310.37	570	951.8	5.74	6.35	6.86	3.29	-1.52	1.08
IDEQ	23-May-95	193.74	492	512.8	5.27	6.20	6.24	1.48	-1.66	-0.39
IDEQ	13-Jun-95	106.76	554	318.2	4.67	6.32	5.76	0.14	-1.55	-1.05
IDEQ	28-Jun-95	92.51	823	409.6	4.53	6.71	6.02	-0.08	-1.06	-0.74
IDEQ	12-Jul-95	56.39	910	276.1	4.03	6.81	5.62	-0.64	-0.90	-1.19
IDEQ	26-Jul-95	54.57	1160	340.6	4.00	7.06	5.83	-0.67	-0.45	-0.97
IDEQ	15-Aug-95	120.22	1370	886.1	4.79	7.22	6.79	0.35	-0.07	0.86
IDEQ	14-Sep-95	48.71	1510	395.7	3.89	7.32	5.98	-0.76	0.19	-0.79

J.MacLachlan

Concentration over time analysis

				r2	Slope, m
	J.MacLachlan SF12			**Concentration over time**	
	LnConc.=mTime+b All data r2, m:			**0.080**	**-0.00045**
	Time	**Ln[COC]**	**[COC]**		
first:	3-Oct-91	7.64	2,084		
mid:	9-Sep-94	7.16	1,288		
last:	14-Sep-95	6.99	1,091		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	14-Sep-95	0.00	1		

Load over time analysis

	J.MacLachlan SF12			**Load over time**	
	LnLoad=mTime+b All data r2, m:			**0.022**	**0.00023**
	Time	**LnLoad**	**Load**		
first:	3-Oct-91	6.10	447		
mid:	9-Sep-94	6.35	573		
last:	14-Sep-95	6.44	624		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	14-Sep-95	0.00	1		

max r2: #DIV/0!

max r2: #DIV/0!

Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.080	-0.00045	22.70	0.022	0.00023	-1.65
0.125	-0.00075	33.21	0.000	0.00001	6.14
0.110	-0.00073	32.52	0.001	-0.00007	8.96
0.089	-0.00067	30.35	0.003	-0.00013	10.82
0.066	-0.00059	27.65	0.012	-0.00024	14.82
0.045	-0.00050	24.43	0.015	-0.00028	16.14
0.025	-0.00038	20.33	0.016	-0.00031	17.17
0.013	-0.00028	16.72	0.030	-0.00044	21.72
0.004	-0.00016	12.43	0.024	-0.00041	20.51
0.000	-0.00001	7.32	0.018	-0.00038	19.51
0.000	-0.00001	7.46	0.013	-0.00033	17.87
0.001	-0.00007	9.37	0.002	0.00012	2.32
0.018	-0.00041	21.33	0.001	0.00011	2.45
0.080	-0.00087	37.50	0.000	0.00007	4.02
0.131	-0.00121	49.01	0.003	0.00021	-0.79
0.215	-0.00168	65.63	0.002	-0.00015	11.42
0.272	-0.00209	79.92	0.023	-0.00060	27.26
0.298	-0.00243	91.83	0.070	-0.00116	46.86
0.308	-0.00278	103.95	0.161	-0.00196	74.72
0.329	-0.00329	121.61	0.382	-0.00338	124.12
0.234	-0.00295	109.63	0.458	-0.00423	153.77
0.096	-0.00187	72.17	0.510	-0.00510	184.12
0.026	-0.00106	43.72	0.431	-0.00503	181.62
0.000	0.00007	4.47	0.336	-0.00468	169.53
0.021	0.00112	-32.15	0.326	-0.00514	185.38
0.208	0.00367	-121.19	0.179	-0.00377	137.65
0.493	0.00619	-209.18	0.109	-0.00320	117.75
0.912	0.00967	-330.46	0.048	-0.00238	89.12
0.932	0.01079	-369.79	0.037	0.00192	-61.05
0.893	0.01038	-355.29	0.185	0.00524	-177.07
0.922	0.00816	-277.97	0.116	0.00493	-165.97
0.877	0.00748	-254.01	0.161	0.00736	-250.99
0.931	0.00511	-171.41	0.001	0.00064	-16.27
1.000	0.00324	-106.05	1.000	-0.02687	945.30
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

J.MacLachlan **SF12**
LN Analysis **J.MacLachlan**

Load **Load Data, EV=631 lbs/day CV=0.473**

Avg:	**631**	**Load Data-based LN**		
SD:	**298**	u	ln tZn Load	tZn Load
CV:	**0.47**	3	7.7	2196
Min:	**276.1**	0	6.35	570
Max:	**1,633**	-3	5.00	148.0
Median:	**546**			
		631	631	
		0.47	0.473	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.967, EV=634lbs/day CV=0.475; max r2=0.99**

r2 u,lnLoad:	0.967	u	lnLoad	Load		
slope, m:	2.218	3	7.70	2216		
intercept, b:	-14.085	0	6.35	573		
N:	35	-3	5.00	148.1		
E[Load]:	634.3	Parameter Estimates			0.967	0.967
SD[Load]:	301	from LN regression			634.3	634
CV[Load]:	0.47	update graph label			0.5	0.475
					max r2	

J.MacLachlan N: 35 #DIV/0!

Date	**Load lbs/day Ranked**	**i rank**	**i-3/8 / N+1/4 plotting points**	**u y-axis**	**Ln x-axis**	**r2 forward**
update and rank for new data						
12-Jul-95	**276.1**	1	0.0177	-2.103	5.621	0.967
13-Jun-95	**318.2**	2	0.0461	-1.684	5.763	0.972
3-Oct-91	**331.3**	3	0.0745	-1.443	5.803	0.976
26-Jul-95	**340.6**	4	0.1028	-1.266	5.831	0.979
24-Jun-94	**355.2**	5	0.1312	-1.121	5.873	0.979
23-Jul-94	**373.1**	6	0.1596	-0.996	5.922	0.980
5-Oct-94	**394.0**	7	0.1879	-0.885	5.976	0.980
14-Sep-95	**395.7**	8	0.2163	-0.785	5.981	0.982
20-Dec-93	**408.8**	9	0.2447	-0.691	6.013	0.982
28-Jun-95	**409.6**	10	0.2730	-0.604	6.015	0.981
16-Aug-94	**412.0**	11	0.3014	-0.520	6.021	0.980
26-Oct-93	**428.5**	12	0.3298	-0.441	6.060	0.978
9-Sep-94	**431.1**	13	0.3582	-0.363	6.066	0.976
15-Feb-94	**444.8**	14	0.3865	-0.288	6.098	0.974
20-Dec-93	**485.7**	15	0.4149	-0.215	6.185	0.973
23-May-95	**512.8**	16	0.4433	-0.143	6.240	0.971
20-May-94	**513.4**	17	0.4716	-0.071	6.241	0.968
3-May-94	**546.5**	18	0.5000	0.000	6.303	0.965
19-Jan-94	**562.9**	19	0.5284	0.071	6.333	0.961
19-Jan-94	**596.3**	20	0.5567	0.143	6.391	0.957
8-Jun-94	**682.5**	21	0.5851	0.215	6.526	0.952
25-Apr-95	**685.8**	22	0.6135	0.288	6.531	0.956
15-Nov-94	**704.7**	23	0.6418	0.363	6.558	0.958
23-Mar-94	**722.8**	24	0.6702	0.441	6.583	0.961
8-Mar-95	**733.4**	25	0.6986	0.520	6.598	0.966
6-Apr-94	**737.6**	26	0.7270	0.604	6.603	0.969
13-Apr-95	**744.5**	27	0.7553	0.691	6.613	0.967
7-Mar-94	**754.4**	28	0.7837	0.785	6.626	0.960
14-Dec-94	**789.2**	29	0.8121	0.885	6.671	0.951
15-Aug-95	**886.1**	30	0.8404	0.996	6.787	0.948
10-May-95	**951.8**	31	0.8688	1.121	6.858	0.930
10-Feb-95	**1127.5**	32	0.8972	1.266	7.028	0.902
22-Mar-95	**1170.9**	33	0.9255	1.443	7.066	0.927
11-Jan-95	**1212.3**	34	0.9539	1.684	7.100	1.000
18-Apr-94	**1632.6**	35	0.9823	2.103	7.398	#DIV/0!

update for EV, CV:

J.MacLachlan		SF12		1,406	1410
LN Analysis		J.MacLachlan		0.39	0.391
Concentration		Conc. Data, EV=1410 ug/L CV=0.391			
Avg:	1,406	Data-based LN			
SD:	549	u	ln[tZn]	[tZn]	
CV:	0.39	3	8.3	4057	
Min:	492	0	7.18	1309	
Max:	2,800	-3	6.05	423	
Median:	1,390				

					0.953	0.953
u=mLn(Conc.)+b:					1436.0	1440
update for r2, EV, CV:	r2=0.953, EV=1440 ug/L CV=0.492; max r2=0.99				0.492	0.492
	r2 u,lnConc:	0.953	u	lnConc.	Conc.	
	slope, m:	2.148	3	8.56	5209	
	intercept, b:	-15.379	0	7.16	1288	
	N:	35	-3	5.76	319	
	E[Conc]:	1436.0	Parameter Estimates			
	SD[Conc]:	707	from LN regression			
	CV[Conc]:	0.49	update graph label			

	J.MacLachlan Concentration	N: 35 i	i-3/8 / N+1/4	u	Ln	max r2 #DIV/0!
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	r2 forward
update and rank for new data						
23-May-95	492	1	0.0177	-2.103	6.198	0.953
13-Jun-95	554	2	0.0461	-1.684	6.317	0.946
10-May-95	570	3	0.0745	-1.443	6.346	0.940
20-May-94	616	4	0.1028	-1.266	6.423	0.939
3-May-94	619	5	0.1312	-1.121	6.428	0.942
28-Jun-95	823	6	0.1596	-0.996	6.713	0.965
12-Jul-95	910	7	0.1879	-0.885	6.813	0.965
24-Jun-94	934	8	0.2163	-0.785	6.839	0.963
8-Jun-94	944	9	0.2447	-0.691	6.850	0.962
18-Apr-94	1020	10	0.2730	-0.604	6.928	0.966
25-Apr-95	1080	11	0.3014	-0.520	6.985	0.967
6-Apr-94	1130	12	0.3298	-0.441	7.030	0.967
26-Jul-95	1160	13	0.3582	-0.363	7.056	0.966
23-Jul-94	1190	14	0.3865	-0.288	7.082	0.967
13-Apr-95	1250	15	0.4149	-0.215	7.131	0.970
8-Mar-95	1360	16	0.4433	-0.143	7.215	0.972
15-Aug-95	1370	17	0.4716	-0.071	7.223	0.969
3-Oct-91	1390	18	0.5000	0.000	7.237	0.966
16-Aug-94	1450	19	0.5284	0.071	7.279	0.965
14-Sep-95	1510	20	0.5567	0.143	7.320	0.962
5-Oct-94	1540	21	0.5851	0.215	7.340	0.957
9-Sep-94	1580	22	0.6135	0.288	7.365	0.951
22-Mar-95	1650	23	0.6418	0.363	7.409	0.944
10-Feb-95	1680	24	0.6702	0.441	7.427	0.937
23-Mar-94	1760	25	0.6986	0.520	7.473	0.929
7-Mar-94	1790	26	0.7270	0.604	7.490	0.927
26-Oct-93	1800	27	0.7553	0.691	7.496	0.927
15-Feb-94	1810	28	0.7837	0.785	7.501	0.921
11-Jan-95	1840	29	0.8121	0.885	7.518	0.904
19-Jan-94	2030	30	0.8404	0.996	7.616	0.874
19-Jan-94	2030	31	0.8688	1.121	7.616	0.914
20-Dec-93	2040	32	0.8972	1.266	7.621	0.944
20-Dec-93	2040	33	0.9255	1.443	7.621	0.948
15-Nov-94	2440	34	0.9539	1.684	7.800	1.000
14-Dec-94	2800	35	0.9823	2.103	7.937	#DIV/0!

update for EV, CV:

J.MacLachlan		**SF12**			98	97.9
LN Analysis		**J.MacLachlan**			0.66	0.661
Discharge, Q		**Q Data, EV=97.9 cfs CV=0.661**				
Avg:	**98**	**Q Data-based LN**				
SD:	**65**	u	lnQ	Q		
CV:	**0.66**	3	6.2	497		
Min:	**37**	0	4.40	82		
Max:	**310**	-3	2.60	13		
Median:	**76**					

	0.923	0.923
	99.1	99.1
u=mLn(Q)+b:	0.66	0.661

update for r2, EV, CV: **r2=0.923, EV=99.1 cfs CV=0.661; max r2=0.98**

r2 u,lnQ:	0.923	u	lnQ	Q
slope, m:	1.661	3	6.22	503
intercept, b:	-7.334	0	4.41	83
N:	35	-3	2.61	14
E[Q]:	99.1	Parameter Estimates		
SD[Q]:	65	from LN regression		
CV[Q]:	0.66	update graph label		

	Q	N: 35				max r2 #DIV/0!
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
20-Dec-93	37.25	1	0.0177	-2.103	3.618	0.923
26-Oct-93	44.25	2	0.0461	-1.684	3.790	0.934
20-Dec-93	44.25	3	0.0745	-1.443	3.790	0.947
3-Oct-91	44.3	4	0.1028	-1.266	3.791	0.955
15-Feb-94	45.68	5	0.1312	-1.121	3.822	0.958
5-Oct-94	47.55	6	0.1596	-0.996	3.862	0.960
14-Sep-95	48.71	7	0.1879	-0.885	3.886	0.962
9-Sep-94	50.71	8	0.2163	-0.785	3.926	0.962
19-Jan-94	51.54	9	0.2447	-0.691	3.942	0.963
14-Dec-94	52.39	10	0.2730	-0.604	3.959	0.962
16-Aug-94	52.82	11	0.3014	-0.520	3.967	0.960
15-Nov-94	53.68	12	0.3298	-0.441	3.983	0.956
26-Jul-95	54.57	13	0.3582	-0.363	3.999	0.952
19-Jan-94	54.6	14	0.3865	-0.288	4.000	0.948
12-Jul-95	56.39	15	0.4149	-0.215	4.032	0.944
23-Jul-94	58.28	16	0.4433	-0.143	4.065	0.943
24-Jun-94	70.68	17	0.4716	-0.071	4.258	0.948
23-Mar-94	76.34	18	0.5000	0.000	4.335	0.943
7-Mar-94	78.34	19	0.5284	0.071	4.361	0.937
28-Jun-95	92.51	20	0.5567	0.143	4.527	0.932
8-Mar-95	100.24	21	0.5851	0.215	4.608	0.925
13-Jun-95	106.76	22	0.6135	0.288	4.671	0.919
13-Apr-95	110.71	23	0.6418	0.363	4.707	0.918
25-Apr-95	118.03	24	0.6702	0.441	4.771	0.917
15-Aug-95	120.22	25	0.6986	0.520	4.789	0.925
6-Apr-94	121.33	26	0.7270	0.604	4.799	0.933
11-Jan-95	122.46	27	0.7553	0.691	4.808	0.937
10-Feb-95	124.74	28	0.7837	0.785	4.826	0.935
22-Mar-95	131.9	29	0.8121	0.885	4.882	0.926
8-Jun-94	134.39	30	0.8404	0.996	4.901	0.910
20-May-94	154.9	31	0.8688	1.121	5.043	0.876
3-May-94	164.09	32	0.8972	1.266	5.100	0.821
23-May-95	193.74	33	0.9255	1.443	5.267	0.684
18-Apr-94	297.51	34	0.9539	1.684	5.695	1.000
10-May-95	310.37	35	0.9823	2.103	5.738	#DIV/0!

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.		see comment
Station:	**SF220**	**Date:** 20-Jun-00
Chemical:	**dCd**	**Analyst:** J.MacLachlan
Notes:		
Input Discharge and Concentration Data below (in red)		

	Date	Discharge	Concentration	Load			
Avg:	34,604	82	1	0.2	0.00	0.00	0.00
SD:	424	92	0.2	0.2	1.00	1.00	1.00
CV:	0.01	1.12	0.30	0.99			
Min:	33,373	16	0.2	0.1	-0.71	-2.38	-0.72
Max:	35,925	432	1	1	3.80	2.60	3.52
Median:	34,562	42	1	0.1	-0.43	-0.36	-0.50

dCd SF220			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.176)		update r2	0.18	0.176	r2:	0.049	0.056
r2 Q,[COC]:	0.18	[tCd]	Q		m:	0.0483	0.00053
slope, m:	-0.001	1	16.5		b:	-1589	-14.43
intercept, b:	0.7	1	82.0				
N: 37		0.3	432				
LnConc. = mLn(Q)+b (r2=0.22)		update r2		0.22	0.22		
r2 lnQ,ln[COC]:	0.22	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.19	-0.27	2.80	1	16		
intercept, b:	0.25	-0.56	4.41	1	82		
N: 37		-0.87	6.07	0.4	432		

N= 41

	Sampling Date	Q Discharge cfs	dCd Concentration ug/L	dCd Load lbs/day	Ln Q	Ln dCd Conc.	Ln dCd Load	dCd SF220 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data									for graph 0	
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	276.3	0.2	0.3	5.62	-1.61	-1.21	2.11	-2.33	0.34
MFG	4-Oct-91	21.6	0.6	0.1	3.07	-0.51	-2.66	-0.66	-0.36	-0.69
IDEQ	26-Oct-93	21.26	0.8	0.1	3.06	-0.22	-2.39	-0.66	0.63	-0.59
IDEQ	30-Nov-93	19.68	0.8	0.1	2.98	-0.22	-2.47	-0.68	0.63	-0.63
IDEQ	20-Dec-93	18.94	0.8	0.1	2.94	-0.22	-2.51	-0.68	0.63	-0.64
IDEQ	20-Dec-93	16.45	0.8	0.1	2.80	-0.22	-2.65	-0.71	0.63	-0.69
IDEQ	19-Jan-94	22.52	0.6	0.1	3.11	-0.51	-2.62	-0.65	-0.36	-0.68
IDEQ	19-Jan-94	23.01	0.6	0.1	3.14	-0.51	-2.60	-0.64	-0.36	-0.67
IDEQ	15-Feb-94	18.94	0.7	0.1	2.94	-0.36	-2.64	-0.68	0.14	-0.69
IDEQ	15-Feb-94	17.75	0.7	0.1	2.88	-0.36	-2.71	-0.70	0.14	-0.71
IDEQ	7-Mar-94	47.26	0.6	0.2	3.86	-0.51	-1.88	-0.38	-0.36	-0.32
IDEQ	23-Mar-94	44.55	0.6	0.1	3.80	-0.51	-1.94	-0.41	-0.36	-0.36
IDEQ	*6-Apr-94*	*133.87*			4.90			0.56		
IDEQ	*18-Apr-94*	*331.49*			5.80			2.71		
IDEQ	*3-May-94*	*160.83*			5.08			0.86		
IDEQ	20-May-94	167.55	0.8	0.7	5.12	-0.22	-0.33	0.93	0.63	2.27
IDEQ	8-Jun-94	76.11	0.5	0.2	4.33	-0.69	-1.59	-0.06	-0.85	-0.08
IDEQ	24-Jun-94	41.99	0.5	0.1	3.74	-0.69	-2.18	-0.43	-0.85	-0.50
IDEQ	23-Jul-94	24.81	0.5	0.1	3.21	-0.69	-2.71	-0.62	-0.85	-0.71
IDEQ	16-Aug-94	20.06	0.8	0.1	3.00	-0.22	-2.45	-0.67	0.63	-0.62
IDEQ	16-Aug-94	17.17	0.8	0.1	2.84	-0.22	-2.61	-0.70	0.63	-0.67
IDEQ	9-Sep-94	19.68	0.6	0.1	2.98	-0.51	-2.76	-0.68	-0.36	-0.72
IDEQ	5-Oct-94	17.54	1	0.1	2.86	0.00	-2.36	-0.70	1.61	-0.58
IDEQ	15-Nov-94	20.45	0.8	0.1	3.02	-0.22	-2.43	-0.67	0.63	-0.61
IDEQ	14-Dec-94	20.06	1.1	0.1	3.00	0.10	-2.13	-0.67	2.11	-0.47
IDEQ	11-Jan-95	76.11	0.6	0.2	4.33	-0.51	-1.40	-0.06	-0.36	0.11
IDEQ	10-Feb-95	76.11	0.5	0.2	4.33	-0.69	-1.59	-0.06	-0.85	-0.08
IDEQ	8-Mar-95	71.68	0.6	0.2	4.27	-0.51	-1.46	-0.11	-0.36	0.04
IDEQ	22-Mar-95	91.17	0.9	0.4	4.51	-0.11	-0.82	0.10	1.12	1.00
IDEQ	12-Apr-95	89.35	1.2	0.6	4.49	0.18	-0.55	0.08	2.60	1.61
IDEQ	25-Apr-95	87.57	0.6	0.3	4.47	-0.51	-1.26	0.06	-0.36	0.27
IDEQ	8-May-95	181.86	0.5	0.5	5.20	-0.69	-0.71	1.09	-0.85	1.21
IDEQ	23-May-95	205.73	0.9	1.0	5.33	-0.11	0.00	1.34	1.12	3.52
IDEQ	13-Jun-95	107.11	0.6	0.3	4.67	-0.51	-1.06	0.27	-0.36	0.56
IDEQ	*28-Jun-95*	*57.59*			4.05			-0.26		
IDEQ	12-Jul-95	34.52	0.5	0.1	3.54	-0.69	-2.38	-0.52	-0.85	-0.59
IDEQ	26-Jul-95	24.33	0.6	0.1	3.19	-0.51	-2.54	-0.63	-0.36	-0.65
IDEQ	15-Aug-95	25.29	0.6	0.1	3.23	-0.51	-2.51	-0.62	-0.36	-0.64
IDEQ	14-Sep-95	157.58	0.8	0.7	5.06	-0.22	-0.39	0.82	0.63	2.07
URS	8-Nov-97	42.2	0.59	0.1	3.74	-0.53	-2.01	-0.43	-0.41	-0.40
URS	10-May-98	432	0.19	0.4	6.07	-1.66	-0.82	3.80	-2.38	1.00

dCd

Concentration over time analysis

	dCd SF220			r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.002**	**-0.00004**
	Time	**Ln[COC]**	**[COC]**		
first:	15-May-91	-0.41	1		
mid:	16-Aug-94	-0.45	1		
last:	10-May-98	-0.50	1		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	10-May-98	0.00	1		

Load over time analysis

	dCd SF220				
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.104**	**0.00059**
	Time	**LnLoad**	**Load**		
first:	15-May-91	-2.61	0.1		
mid:	16-Aug-94	-1.90	0.1		
last:	10-May-98	-1.10	0.3		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	10-May-98	0.00	1		

max r2: 0.555 — max r2: 0.194

Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.002	-0.00004	0.85	0.104	0.00059	-22.35
0.156	-0.00031	10.28	0.194	0.00091	-33.27
0.228	-0.00043	14.38	0.177	0.00097	-35.61
0.220	-0.00042	14.31	0.167	0.00096	-35.17
0.211	-0.00042	14.18	0.156	0.00094	-34.32
0.201	-0.00042	14.02	0.143	0.00090	-33.20
0.190	-0.00041	13.82	0.126	0.00085	-31.37
0.205	-0.00043	14.65	0.109	0.00080	-29.41
0.222	-0.00046	15.62	0.092	0.00073	-27.23
0.223	-0.00047	15.99	0.074	0.00066	-24.60
0.225	-0.00048	16.42	0.055	0.00056	-21.23
0.245	-0.00052	17.58	0.052	0.00056	-21.20
0.267	-0.00055	18.86	0.048	0.00055	-20.83
0.267	-0.00055	18.86	0.048	0.00055	-20.83
0.267	-0.00055	18.86	0.048	0.00055	-20.83
0.267	-0.00055	18.86	0.048	0.00055	-20.83
0.256	-0.00055	18.72	0.093	0.00074	-27.58
0.304	-0.00061	20.69	0.101	0.00079	-29.22
0.362	-0.00067	22.88	0.091	0.00076	-28.15
0.428	-0.00073	25.18	0.069	0.00065	-24.32
0.422	-0.00074	25.34	0.052	0.00056	-21.27
0.414	-0.00074	25.53	0.032	0.00044	-16.75
0.449	-0.00079	27.25	0.013	0.00026	-10.71
0.424	-0.00076	26.17	0.003	0.00013	-6.08
0.412	-0.00076	26.06	0.000	-0.00002	-0.70
0.388	-0.00070	24.07	0.004	-0.00014	3.63
0.405	-0.00073	25.10	0.005	-0.00016	4.40
0.461	-0.00079	27.13	0.009	-0.00021	6.25
0.482	-0.00082	28.29	0.012	-0.00025	7.62
0.461	-0.00079	27.18	0.007	-0.00019	5.35
0.465	-0.00070	23.90	0.001	-0.00006	0.89
0.469	-0.00072	24.57	0.000	-0.00005	0.25
0.528	-0.00078	26.87	0.002	0.00010	-5.04
0.494	-0.00071	24.38	0.064	0.00050	-19.19
0.488	-0.00073	25.17	0.142	0.00074	-27.91
0.488	-0.00073	25.17	0.142	0.00074	-27.91
0.555	-0.00083	28.74	0.091	0.00060	-22.82

update for EV, CV:

dCd		**SF220**		
LN Analysis		**dCd**		
Load		**Load Data, EV=0.222 lbs/day CV=0.989**		
Avg:	**0.2**	**Load Data-based LN**		
SD:	**0.2**	u	ln tCd Load	tCd Load
CV:	**0.99**	3	0.6	2
Min:	**0.1**	0	-1.84	0.2
Max:	**1**	-3	-4.32	0.01
Median:	**0.1**			
		0	0.222	
		0.99	0.989	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.913, EV=0.219lbs/day CV=1.11; max r2=0.98**

r2 u,lnLoad:	0.913	u	lnLoad	Load		
slope, m:	1.118	3	0.76	2		
intercept, b:	2.147	0	-1.92	0.1		
N:	37	-3	-4.60	0.01		
E[Load]:	0.2	Parameter Estimates			0.913	0.913
SD[Load]:	0.2	from LN regression			0.2	0.219
CV[Load]:	1.11	update graph label			1.1	1.11
					max r2	

	dCd	N: 41				0.978
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
28-Jun-95		1	0.0152	-2.166		
9-Sep-94	**0.1**	2	0.0394	-1.758	-2.756	0.913
23-Jul-94	**0.1**	3	0.0636	-1.525	-2.707	0.927
15-Feb-94	**0.1**	4	0.0879	-1.354	-2.705	0.939
4-Oct-91	**0.1**	5	0.1121	-1.215	-2.663	0.947
20-Dec-93	**0.1**	6	0.1364	-1.097	-2.648	0.955
15-Feb-94	**0.1**	7	0.1606	-0.992	-2.640	0.961
19-Jan-94	**0.1**	8	0.1848	-0.897	-2.621	0.965
16-Aug-94	**0.1**	9	0.2091	-0.810	-2.605	0.969
19-Jan-94	**0.1**	10	0.2333	-0.728	-2.600	0.972
26-Jul-95	**0.1**	11	0.2576	-0.651	-2.544	0.973
20-Dec-93	**0.1**	12	0.2818	-0.577	-2.507	0.975
15-Aug-95	**0.1**	13	0.3061	-0.507	-2.505	0.977
30-Nov-93	**0.1**	14	0.3303	-0.439	-2.469	0.977
16-Aug-94	**0.1**	15	0.3545	-0.373	-2.449	0.977
15-Nov-94	**0.1**	16	0.3788	-0.309	-2.430	0.976
6-Apr-94		17	0.4030	-0.246		
26-Oct-93	**0.1**	18	0.4273	-0.183	-2.391	0.975
12-Jul-95	**0.1**	19	0.4515	-0.122	-2.377	0.972
5-Oct-94	**0.1**	20	0.4758	-0.061	-2.361	0.969
3-May-94		21	0.5000	0.000		
24-Jun-94	**0.1**	22	0.5242	0.061	-2.181	0.968
14-Dec-94	**0.1**	23	0.5485	0.122	-2.131	0.966
8-Nov-97	**0.1**	24	0.5727	0.183	-2.010	0.966
23-Mar-94	**0.1**	25	0.5970	0.246	-1.939	0.965
7-Mar-94	**0.2**	26	0.6212	0.309	-1.880	0.965
8-Jun-94	**0.2**	27	0.6455	0.373	-1.586	0.970
10-Feb-95	**0.2**	28	0.6697	0.439	-1.586	0.965
18-Apr-94		29	0.6939	0.507		
8-Mar-95	**0.2**	30	0.7182	0.577	-1.464	0.959
11-Jan-95	**0.2**	31	0.7424	0.651	-1.404	0.956
25-Apr-95	**0.3**	32	0.7667	0.728	-1.263	0.957
15-May-91	**0.3**	33	0.7909	0.810	-1.213	0.954
13-Jun-95	**0.3**	34	0.8152	0.897	-1.062	0.966
22-Mar-95	**0.4**	35	0.8394	0.992	-0.818	0.978
10-May-98	**0.4**	36	0.8636	1.097	-0.817	0.975
8-May-95	**0.5**	37	0.8879	1.215	-0.715	0.972
12-Apr-95	**0.6**	38	0.9121	1.354	-0.550	
14-Sep-95	**0.7**	39	0.9364	1.525	-0.388	
20-May-94	**0.7**	40	0.9606	1.758	-0.327	
23-May-95	**1.0**	41	0.9848	2.166	-0.004	

update for EV, CV:

dCd	SF220		1	0.672
LN Analysis	dCd		0.30	0.302

Concentration — Conc. Data, EV=0.672 ug/L CV=0.302

		Data-based LN		
Avg:	1	u	ln[tCd]	[tCd]
SD:	0.2	3	0.4	2
CV:	0.30	0	-0.44	1
Min:	0.2	-3	-1.33	0.3
Max:	1			
Median:	1			

u=m.Ln(Conc.)+b:

update for r2, EV, CV: r2=0.741, EV=0.659 ug/L CV=0.545; max r2=0.96

r2 u,lnConc:	0.741	u	lnConc.	Conc.
slope, m:	1.962	3	0.98	3
intercept, b:	1.072	0	-0.55	1
N:	37	-3	-2.08	0.1
E[Conc]:	0.7	Parameter Estimates		
SD[Conc]:	0.4	from LN regression		
CV[Conc]:	0.54	update graph label		

						0.741	0.741
						0.7	0.659
						0.545	0.545

	dCd	N: 41				max r2 0.962
Date	Concentration ug/L Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
6-Apr-94		1	0.0152	-2.166		
18-Apr-94		2	0.0394	-1.758		
3-May-94		3	0.0636	-1.525		
28-Jun-95		4	0.0879	-1.354		
10-May-98	0.19	5	0.1121	-1.215	-1.661	0.741
15-May-91	0.2	6	0.1364	-1.097	-1.609	0.779
8-Jun-94	0.5	7	0.1606	-0.992	-0.693	0.941
24-Jun-94	0.5	8	0.1848	-0.897	-0.693	0.939
23-Jul-94	0.5	9	0.2091	-0.810	-0.693	0.936
10-Feb-95	0.5	10	0.2333	-0.728	-0.693	0.931
8-May-95	0.5	11	0.2576	-0.651	-0.693	0.926
12-Jul-95	0.5	12	0.2818	-0.577	-0.693	0.920
8-Nov-97	0.59	13	0.3061	-0.507	-0.528	0.915
4-Oct-91	0.6	14	0.3303	-0.439	-0.511	0.917
19-Jan-94	0.6	15	0.3545	-0.373	-0.511	0.920
19-Jan-94	0.6	16	0.3788	-0.309	-0.511	0.922
7-Mar-94	0.6	17	0.4030	-0.246	-0.511	0.922
23-Mar-94	0.6	18	0.4273	-0.183	-0.511	0.921
9-Sep-94	0.6	19	0.4515	-0.122	-0.511	0.917
11-Jan-95	0.6	20	0.4758	-0.061	-0.511	0.912
8-Mar-95	0.6	21	0.5000	0.000	-0.511	0.904
25-Apr-95	0.6	22	0.5242	0.061	-0.511	0.895
13-Jun-95	0.6	23	0.5485	0.122	-0.511	0.885
26-Jul-95	0.6	24	0.5727	0.183	-0.511	0.876
15-Aug-95	0.6	25	0.5970	0.246	-0.511	0.873
15-Feb-94	0.7	26	0.6212	0.309	-0.357	0.892
15-Feb-94	0.7	27	0.6455	0.373	-0.357	0.879
26-Oct-93	0.8	28	0.6697	0.439	-0.223	0.865
30-Nov-93	0.8	29	0.6939	0.507	-0.223	0.886
20-Dec-93	0.8	30	0.7182	0.577	-0.223	0.906
20-Dec-93	0.8	31	0.7424	0.651	-0.223	0.925
20-May-94	0.8	32	0.7667	0.728	-0.223	0.941
16-Aug-94	0.8	33	0.7909	0.810	-0.223	0.954
16-Aug-94	0.8	34	0.8152	0.897	-0.223	0.962
15-Nov-94	0.8	35	0.8394	0.992	-0.223	0.960
14-Sep-95	0.8	36	0.8636	1.097	-0.223	0.948
22-Mar-95	0.9	37	0.8879	1.215	-0.105	0.956
23-May-95	0.9	38	0.9121	1.354	-0.105	
5-Oct-94	1	39	0.9364	1.525	0.000	
14-Dec-94	1.1	40	0.9606	1.758	0.095	
12-Apr-95	1.2	41	0.9848	2.166	0.182	

		update for EV, CV:				
dCd		**SF220**			82	82
LN Analysis		**dCd**			1.12	1.12
Discharge, Q		**Q Data, EV=82 cfs CV=1.12**				
Avg:	**82**	**Q Data-based LN**				
SD:	**92**	u	lnQ	Q		
CV:	**1.12**	3	6.7	819		
Min:	**16**	0	4.00	54		
Max:	**432**	-3	1.29	4		
Median:	**42**					
					0.907	0.907
					85.8	85.8
		u=mLn{Q}+b:			1.39	1.39

update for r2, EV, CV: **r2=0.907, EV=85.8 cfs CV=1.39; max r2=0.98**

r2 u,lnQ:	0.907	u	lnQ	Q
slope, m:	0.966	3	7.02	1121
intercept, b:	-3.784	0	3.92	50
N:	41	-3	0.81	2
E[Q]:	85.8	Parameter Estimates		
SD[Q]:	119	from LN regression		
CV[Q]:	1.39	update graph label		

	Q	N: 41				max r2 0.979
	Discharge	i	i-3/8 / N+1/4	u	Ln	r2
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
20-Dec-93	16.45	1	0.0152	-2.166	2.800	0.907
16-Aug-94	17.17	2	0.0394	-1.758	2.843	0.931
5-Oct-94	17.54	3	0.0636	-1.525	2.864	0.945
15-Feb-94	17.75	4	0.0879	-1.354	2.876	0.955
20-Dec-93	18.94	5	0.1121	-1.215	2.941	0.961
15-Feb-94	18.94	6	0.1364	-1.097	2.941	0.967
30-Nov-93	19.68	7	0.1606	-0.992	2.980	0.971
9-Sep-94	19.68	8	0.1848	-0.897	2.980	0.975
16-Aug-94	20.06	9	0.2091	-0.810	2.999	0.976
14-Dec-94	20.06	10	0.2333	-0.728	2.999	0.977
15-Nov-94	20.45	11	0.2576	-0.651	3.018	0.976
26-Oct-93	21.26	12	0.2818	-0.577	3.057	0.975
4-Oct-91	21.6	13	0.3061	-0.507	3.073	0.973
19-Jan-94	22.52	14	0.3303	-0.439	3.114	0.971
19-Jan-94	23.01	15	0.3545	-0.373	3.136	0.969
26-Jul-95	24.33	16	0.3788	-0.309	3.192	0.967
23-Jul-94	24.81	17	0.4030	-0.246	3.211	0.966
15-Aug-95	25.29	18	0.4273	-0.183	3.230	0.968
12-Jul-95	34.52	19	0.4515	-0.122	3.542	0.977
24-Jun-94	41.99	20	0.4758	-0.061	3.737	0.977
8-Nov-97	42.2	21	0.5000	0.000	3.742	0.975
23-Mar-94	44.55	22	0.5242	0.061	3.797	0.974
7-Mar-94	47.26	23	0.5485	0.122	3.856	0.975
28-Jun-95	*57.59*	24	0.5727	0.183	4.053	0.979
8-Mar-95	71.68	25	0.5970	0.246	4.272	0.978
8-Jun-94	76.11	26	0.6212	0.309	4.332	0.977
11-Jan-95	76.11	27	0.6455	0.373	4.332	0.975
10-Feb-95	76.11	28	0.6697	0.439	4.332	0.972
25-Apr-95	87.57	29	0.6939	0.507	4.472	0.970
12-Apr-95	89.35	30	0.7182	0.577	4.493	0.965
22-Mar-95	91.17	31	0.7424	0.651	4.513	0.962
13-Jun-95	107.11	32	0.7667	0.728	4.674	0.971
6-Apr-94	*133.87*	33	0.7909	0.810	4.897	0.978
14-Sep-95	157.58	34	0.8152	0.897	5.060	0.973
3-May-94	*160.83*	35	0.8394	0.992	5.080	0.977
20-May-94	167.55	36	0.8636	1.097	5.121	0.973
8-May-95	181.86	37	0.8879	1.215	5.203	0.963
23-May-95	205.73	38	0.9121	1.354	5.327	
15-May-91	276.3	39	0.9364	1.525	5.621	
18-Apr-94	*331.49*	40	0.9606	1.758	5.804	
10-May-98	432	41	0.9848	2.166	6.068	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	**SF220**	**Date:**	**13-Jun-00**
Chemical:	**dPb**	**Analyst:**	**J.MacLachlan**
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load				
Avg:	34,604	82	4	1		0.00	0.00	0.00
SD:	424	92	1	1		1.00	1.00	1.00
CV:	0.01	1.12	0.31	1.14				
Min:	33,373	16	1	0.3		-0.71	-2.71	-0.68
Max:	35,925	432	7	6		3.80	2.75	3.61
Median:	34,562	42	4	1		-0.43	0.18	-0.44

dPb	SF220		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.0675)		update r2	0.07	0.0675	r2:	0.049	0.056
r2 Q,[COC]:	0.07	[dPb]	Q		m:	0.0483	0.00053
slope, m:	-0.004	4	16.5		b:	-1589	-14.43
intercept, b:	4.0	4	82.0				
N: 30		3	432				
LnConc. = mLn(Q)+b (r2=0.0764)		update r2	0.08	0.0764			
r2 lnQ,ln[COC]:	0.08	ln[dPb]	ln Q	[dPb]	Q		
slope, m:	-0.12	1.38	2.80	4	16		
intercept, b:	1.73	1.18	4.41	3	82		
N: 30		0.98	6.07	3	432		

N= 41

	Sampling Date	Q Discharge	dPb Concentration	dPb Load	Ln Q	Ln dPb Conc.	Ln dPb Load	dPb SF220 Standardized Values = (x - Avg)/SD		for graph 0
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	*15-May-91*	*276.3*			5.62			2.11		
MFG	4-Oct-91	21.6	4	0.5	3.07	1.39	-0.77	-0.66	0.18	-0.54
IDEQ	26-Oct-93	21.26	3	0.3	3.06	1.10	-1.07	-0.66	-0.68	-0.63
IDEQ	30-Nov-93	19.68	5	0.5	2.98	1.61	-0.64	-0.68	1.04	-0.50
IDEQ	20-Dec-93	18.94	3	0.3	2.94	1.10	-1.19	-0.68	-0.68	-0.66
IDEQ	20-Dec-93	16.45	3	0.3	2.80	1.10	-1.33	-0.71	-0.68	-0.68
IDEQ	19-Jan-94	22.52	3	0.4	3.11	1.10	-1.01	-0.65	-0.68	-0.61
IDEQ	19-Jan-94	23.01	3	0.4	3.14	1.10	-0.99	-0.64	-0.68	-0.61
IDEQ	15-Feb-94	18.94	4	0.4	2.94	1.39	-0.90	-0.68	0.18	-0.58
IDEQ	15-Feb-94	17.75	4	0.4	2.88	1.39	-0.96	-0.70	0.18	-0.60
IDEQ	7-Mar-94	47.26	5	1.3	3.86	1.61	0.24	-0.38	1.04	0.03
IDEQ	23-Mar-94	44.55	4	1.0	3.80	1.39	-0.04	-0.41	0.18	-0.19
IDEQ	*6-Apr-94*	*133.87*			4.90			0.56		
IDEQ	*18-Apr-94*	*331.49*			5.80			2.71		
IDEQ	*3-May-94*	*160.83*			5.08			0.86		
IDEQ	20-May-94	167.55	7	6.3	5.12	1.95	1.84	0.93	2.75	3.61
IDEQ	*8-Jun-94*	*76.11*			4.33			-0.06		
IDEQ	24-Jun-94	41.99	3	0.7	3.74	1.10	-0.39	-0.43	-0.68	-0.39
IDEQ	23-Jul-94	24.81	4	0.5	3.21	1.39	-0.63	-0.62	0.18	-0.49
IDEQ	16-Aug-94	20.06	5	0.5	3.00	1.61	-0.62	-0.67	1.04	-0.49
IDEQ	16-Aug-94	17.17	5	0.5	2.84	1.61	-0.77	-0.70	1.04	-0.54
IDEQ	*9-Sep-94*	*19.68*			2.98			-0.68		
IDEQ	5-Oct-94	17.54	3	0.3	2.86	1.10	-1.26	-0.70	-0.68	-0.67
IDEQ	*15-Nov-94*	*20.45*			3.02			-0.67		
IDEQ	14-Dec-94	20.06	3	0.3	3.00	1.10	-1.13	-0.67	-0.68	-0.64
IDEQ	11-Jan-95	76.11	3	1.2	4.33	1.10	0.21	-0.06	-0.68	0.00
IDEQ	*10-Feb-95*	*76.11*			4.33			-0.06		
IDEQ	*8-Mar-95*	*71.68*			4.27			-0.11		
IDEQ	*22-Mar-95*	*91.17*			4.51			0.10		
IDEQ	12-Apr-95	89.35	6	2.9	4.49	1.79	1.06	0.08	1.89	1.18
IDEQ	*25-Apr-95*	*87.57*			4.47			0.06		
IDEQ	8-May-95	181.86	3	2.9	5.20	1.10	1.08	1.09	-0.68	1.21
IDEQ	23-May-95	205.73	4	4.4	5.33	1.39	1.49	1.34	0.18	2.27
IDEQ	13-Jun-95	107.11	4	2.3	4.67	1.39	0.84	0.27	0.18	0.77
IDEQ	28-Jun-95	57.59	3	0.9	4.05	1.10	-0.07	-0.26	-0.68	-0.21
IDEQ	12-Jul-95	34.52	4	0.7	3.54	1.39	-0.30	-0.52	0.18	-0.35
IDEQ	26-Jul-95	24.33	3	0.4	3.19	1.10	-0.93	-0.63	-0.68	-0.59
IDEQ	15-Aug-95	25.29	5	0.7	3.23	1.61	-0.39	-0.62	1.04	-0.39
IDEQ	14-Sep-95	157.58	4	3.4	5.06	1.39	1.22	0.82	0.18	1.54
URS	8-Nov-97	42.2	3.08	0.7	3.74	1.12	-0.36	-0.43	-0.61	-0.38
URS	10-May-98	432	0.62	1.4	6.07	-0.48	0.37	3.80	-2.71	0.15

dPb

Concentration over time analysis

	dPb	SF220		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.238**	**-0.00045**
	Time	**Ln[COC]**	**[COC]**		
first:	15-May-91	1.85	6		
mid:	16-Aug-94	1.31	4		
last:	10-May-98	0.69	2		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	10-May-98	0.00	1		

Load over time analysis

	dPb	SF220		
				Load over time
	LnLoad=mTime+b All data r2, m:			**0.128** **0.00073**
	Time	**LnLoad**	**Load**	
first:	15-May-91	-1.17	0.3	
mid:	16-Aug-94	-0.30	1	
last:	10-May-98	0.69	2	
	LnLoad=mTime+b >'96 r2, m:			**0.000** **0.00000**
	0-Jan-00	0.00	1	
	10-May-98	0.00	1	

max r2: 0.616 max r2: 0.128

Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.238	-0.00045	17.00	0.128	0.00073	-25.49
0.238	-0.00045	17.00	0.128	0.00073	-25.49
0.279	-0.00056	20.74	0.123	0.00081	-28.34
0.310	-0.00060	22.19	0.106	0.00076	-26.49
0.295	-0.00059	21.82	0.099	0.00074	-25.99
0.326	-0.00063	23.27	0.081	0.00067	-23.33
0.363	-0.00068	24.96	0.059	0.00056	-19.64
0.404	-0.00073	26.74	0.043	0.00048	-16.80
0.454	-0.00079	28.87	0.028	0.00039	-13.50
0.464	-0.00082	29.85	0.016	0.00029	-10.15
0.476	-0.00086	31.04	0.005	0.00017	-5.73
0.462	-0.00086	31.15	0.007	0.00020	-7.04
0.474	-0.00090	32.51	0.007	0.00020	-6.93
0.474	-0.00090	32.51	0.007	0.00020	-6.93
0.474	-0.00090	32.51	0.007	0.00020	-6.93
0.474	-0.00090	32.51	0.007	0.00020	-6.93
0.441	-0.00084	30.49	0.050	0.00050	-17.58
0.441	-0.00084	30.49	0.050	0.00050	-17.58
0.491	-0.00091	32.99	0.042	0.00047	-16.56
0.495	-0.00094	33.99	0.029	0.00040	-13.81
0.473	-0.00093	33.58	0.016	0.00030	-10.51
0.446	-0.00091	33.04	0.004	0.00015	-4.97
0.446	-0.00091	33.04	0.004	0.00015	-4.97
0.494	-0.00100	36.01	0.004	-0.00015	5.44
0.494	-0.00100	36.01	0.004	-0.00015	5.44
0.539	-0.00107	38.77	0.048	-0.00044	15.81
0.593	-0.00116	41.94	0.059	-0.00050	18.03
0.593	-0.00116	41.94	0.059	-0.00050	18.03
0.593	-0.00116	41.94	0.059	-0.00050	18.03
0.593	-0.00116	41.94	0.059	-0.00050	18.03
0.577	-0.00110	39.74	0.038	-0.00040	14.23
0.577	-0.00110	39.74	0.038	-0.00040	14.23
0.608	-0.00116	41.75	0.018	-0.00026	9.40
0.597	-0.00116	41.96	0.000	0.00001	-0.24
0.582	-0.00117	42.04	0.019	0.00021	-7.39
0.616	-0.00125	45.10	0.020	0.00022	-7.98
0.595	-0.00127	45.83	0.009	0.00016	-5.73

update for EV, CV:

dPb **SF220**

LN Analysis **dPb**

Load **Load Data, EV=1.23 lbs/day CV=1.14**

Load Data-based LN

		u	ln dPb Load	dPb Load
Avg:	**1**			
SD:	**1**	3	2.5	13
CV:	**1.14**	0	-0.21	1
Min:	**0.3**	-3	-2.96	0.1
Max:	**6**			
Median:	**1**			

1	1.23
1.14	1.14

u=mLn(Load)+ b:

update for r2, EV, CV: **r2=0.93, EV=1.07lbs/day CV=1.37; max r2=0.99**

r2 u,lnLoad:	0.930	u	lnLoad	Load	
slope, m:	0.975	3	2.62	14	
intercept, b:	0.443	0	-0.45	1	
N:	30	-3	-3.53	0.03	
E[Load]:	1.1	Parameter Estimates			0.930 0.93
SD[Load]:	1	from LN regression			1.1 1.07
CV[Load]:	1.37	update graph label			1.4 1.37

	dPb	N: 41				max r2 0.985
	Load	i	i-3/8 / N+1/4	u	Ln	r2
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
9-Sep-94		1	0.0152	-2.166		
15-Nov-94		2	0.0394	-1.758		
20-Dec-93	0.3	3	0.0636	-1.525	-1.326	0.930
5-Oct-94	0.3	4	0.0879	-1.354	-1.262	0.944
8-Mar-95		5	0.1121	-1.215		
20-Dec-93	0.3	6	0.1364	-1.097	-1.185	0.960
8-Jun-94		7	0.1606	-0.992		
10-Feb-95		8	0.1848	-0.897		
14-Dec-94	0.3	9	0.2091	-0.810	-1.128	0.971
26-Oct-93	0.3	10	0.2333	-0.728	-1.070	0.976
25-Apr-95		11	0.2576	-0.651		
19-Jan-94	0.4	12	0.2818	-0.577	-1.012	0.981
22-Mar-95		13	0.3061	-0.507		
19-Jan-94	0.4	14	0.3303	-0.439	-0.991	0.984
15-Feb-94	0.4	15	0.3545	-0.373	-0.962	0.985
26-Jul-95	0.4	16	0.3788	-0.309	-0.935	0.985
15-Feb-94	0.4	17	0.4030	-0.246	-0.897	0.984
16-Aug-94	0.5	18	0.4273	-0.183	-0.772	0.983
4-Oct-91	0.5	19	0.4515	-0.122	-0.766	0.983
30-Nov-93	0.5	20	0.4758	-0.061	-0.636	0.981
23-Jul-94	0.5	21	0.5000	0.000	-0.628	0.981
16-Aug-94	0.5	22	0.5242	0.061	-0.617	0.980
6-Apr-94		23	0.5485	0.122		
3-May-94		24	0.5727	0.183		
24-Jun-94	0.7	25	0.5970	0.246	-0.389	0.977
15-Aug-95	0.7	26	0.6212	0.309	-0.385	0.975
8-Nov-97	0.7	27	0.6455	0.373	-0.358	0.972
12-Jul-95	0.7	28	0.6697	0.439	-0.297	0.970
28-Jun-95	0.9	29	0.6939	0.507	-0.073	0.971
23-Mar-94	1.0	30	0.7182	0.577	-0.042	0.967
11-Jan-95	1.2	31	0.7424	0.651	0.206	0.967
7-Mar-94	1.3	32	0.7667	0.728	0.240	0.957
18-Apr-94		33	0.7909	0.810		
10-May-98	1.4	34	0.8152	0.897	0.365	0.945
15-May-91		35	0.8394	0.992		
13-Jun-95	2.3	36	0.8636	1.097	0.835	0.984
12-Apr-95	2.9	37	0.8879	1.215	1.059	0.981
8-May-95	2.9	38	0.9121	1.354	1.077	
14-Sep-95	3.4	39	0.9364	1.525	1.221	
23-May-95	4.4	40	0.9606	1.758	1.488	
20-May-94	6.3	41	0.9848	2.166	1.842	

update for EV, CV:

dPb		SF220	4	3.79
LN Analysis		dPb	0.31	0.308

Concentration — Conc. Data, EV=3.79 ug/L CV=0.308

		Data-based LN		
Avg:	4	u	ln[dPb]	[dPb]
SD:	1	3	2.2	9
CV:	0.31	3	1.29	4
Min:	1	0	0.38	1
Max:	7	-3		
Median:	4			

0.859 0.859

u=mLn(Conc.)+b: 3.3 3.34

update for r2, EV, CV: r2=0.859, EV=3.34 ug/L CV=0.569; max r2=0.92 0.569 0.569

r2 u,lnConc:	0.859	u	lnConc.	Conc.
slope, m:	1.888	3	2.65	14
intercept, b:	-2.011	0	1.06	3
N:	30	-3	-0.52	1
E[Conc]:	3.3	Parameter Estimates		
SD[Conc]:	2	from LN regression		
CV[Conc]:	0.57	update graph label		

N: 41 — max r2 = 0.920

Date	dPb Concentration ug/L Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
10-May-98	0.62	1	0.0152	-2.166	-0.478	0.859
6-Apr-94		2	0.0394	-1.758		
18-Apr-94		3	0.0636	-1.525		
3-May-94		4	0.0879	-1.354		
8-Jun-94		5	0.1121	-1.215		
9-Sep-94		6	0.1364	-1.097		
15-Nov-94		7	0.1606	-0.992		
10-Feb-95		8	0.1848	-0.897		
8-Mar-95		9	0.2091	-0.810		
22-Mar-95		10	0.2333	-0.728		
25-Apr-95		11	0.2576	-0.651		
15-May-91		12	0.2818	-0.577		
26-Oct-93	3	13	0.3061	-0.507	1.099	0.912
20-Dec-93	3	14	0.3303	-0.439	1.099	0.916
20-Dec-93	3	15	0.3545	-0.373	1.099	0.919
19-Jan-94	3	16	0.3788	-0.309	1.099	0.920
19-Jan-94	3	17	0.4030	-0.246	1.099	0.920
24-Jun-94	3	18	0.4273	-0.183	1.099	0.917
5-Oct-94	3	19	0.4515	-0.122	1.099	0.913
14-Dec-94	3	20	0.4758	-0.061	1.099	0.907
11-Jan-95	3	21	0.5000	0.000	1.099	0.899
8-May-95	3	22	0.5242	0.061	1.099	0.889
28-Jun-95	3	23	0.5485	0.122	1.099	0.878
26-Jul-95	3	24	0.5727	0.183	1.099	0.870
8-Nov-97	3.08	25	0.5970	0.246	1.125	0.869
4-Oct-91	4	26	0.6212	0.309	1.386	0.882
15-Feb-94	4	27	0.6455	0.373	1.386	0.891
15-Feb-94	4	28	0.6697	0.439	1.386	0.898
23-Mar-94	4	29	0.6939	0.507	1.386	0.902
23-Jul-94	4	30	0.7182	0.577	1.386	0.901
23-May-95	4	31	0.7424	0.651	1.386	0.895
13-Jun-95	4	32	0.7667	0.728	1.386	0.882
12-Jul-95	4	33	0.7909	0.810	1.386	0.860
14-Sep-95	4	34	0.8152	0.897	1.386	0.830
30-Nov-93	5	35	0.8394	0.992	1.609	0.825
7-Mar-94	5	36	0.8636	1.097	1.609	0.868
16-Aug-94	5	37	0.8879	1.215	1.609	0.912
16-Aug-94	5	38	0.9121	1.354	1.609	
15-Aug-95	5	39	0.9364	1.525	1.609	
12-Apr-95	6	40	0.9606	1.758	1.792	
20-May-94	7	41	0.9848	2.166	1.946	

update for EV, CV:

dPb		**SF220**			82	82
LN Analysis		**dPb**			1.12	1.12
Discharge, Q		**Q Data, EV=82 cfs CV=1.12**				
Avg:	**82**	**Q Data-based LN**				
SD:	**92**	u	lnQ	Q		
CV:	**1.12**	3	6.7	819		
Min:	**16**	0	4.00	54		
Max:	**432**	-3	1.29	4		
Median:	**42**					
					0.907	0.907
					85.8	85.8
	u=mLn(Q)+b:				1.39	1.39

update for r2, EV, CV: **r2=0.907, EV=85.8 cfs CV=1.39; max r2=0.98**

r2 u,lnQ:	0.907	u	lnQ	Q
slope, m:	0.966	3	7.02	1121
intercept, b:	-3.784	0	3.92	50
N:	41	-3	0.81	2
E[Q]:	85.8	Parameter Estimates		
SD[Q]:	119	from LN regression		
CV[Q]:	1.39	update graph label		

	Q	N: 41				max r2 0.979
	Discharge	i	i-3/8 / N+1/4	u	Ln	r2
Date	cfs	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
20-Dec-93	16.45	1	0.0152	-2.166	2.800	0.907
16-Aug-94	17.17	2	0.0394	-1.758	2.843	0.931
5-Oct-94	17.54	3	0.0636	-1.525	2.864	0.945
15-Feb-94	17.75	4	0.0879	-1.354	2.876	0.955
20-Dec-93	18.94	5	0.1121	-1.215	2.941	0.961
15-Feb-94	18.94	6	0.1364	-1.097	2.941	0.967
30-Nov-93	19.68	7	0.1606	-0.992	2.980	0.971
9-Sep-94	*19.68*	8	0.1848	-0.897	2.980	0.975
16-Aug-94	20.06	9	0.2091	-0.810	2.999	0.976
14-Dec-94	20.06	10	0.2333	-0.728	2.999	0.977
15-Nov-94	*20.45*	11	0.2576	-0.651	3.018	0.976
26-Oct-93	21.26	12	0.2818	-0.577	3.057	0.975
4-Oct-91	21.6	13	0.3061	-0.507	3.073	0.973
19-Jan-94	22.52	14	0.3303	-0.439	3.114	0.971
19-Jan-94	23.01	15	0.3545	-0.373	3.136	0.969
26-Jul-95	24.33	16	0.3788	-0.309	3.192	0.967
23-Jul-94	24.81	17	0.4030	-0.246	3.211	0.966
15-Aug-95	25.29	18	0.4273	-0.183	3.230	0.968
12-Jul-95	34.52	19	0.4515	-0.122	3.542	0.977
24-Jun-94	41.99	20	0.4758	-0.061	3.737	0.977
8-Nov-97	42.2	21	0.5000	0.000	3.742	0.975
23-Mar-94	44.55	22	0.5242	0.061	3.797	0.974
7-Mar-94	47.26	23	0.5485	0.122	3.856	0.975
28-Jun-95	57.59	24	0.5727	0.183	4.053	0.979
8-Mar-95	*71.68*	25	0.5970	0.246	4.272	0.978
8-Jun-94	*76.11*	26	0.6212	0.309	4.332	0.977
11-Jan-95	76.11	27	0.6455	0.373	4.332	0.975
10-Feb-95	*76.11*	28	0.6697	0.439	4.332	0.972
25-Apr-95	*87.57*	29	0.6939	0.507	4.472	0.970
12-Apr-95	89.35	30	0.7182	0.577	4.493	0.965
22-Mar-95	*91.17*	31	0.7424	0.651	4.513	0.962
13-Jun-95	107.11	32	0.7667	0.728	4.674	0.971
6-Apr-94	*133.87*	33	0.7909	0.810	4.897	0.978
14-Sep-95	157.58	34	0.8152	0.897	5.060	0.973
3-May-94	*160.83*	35	0.8394	0.992	5.080	0.977
20-May-94	167.55	36	0.8636	1.097	5.121	0.973
8-May-95	181.86	37	0.8879	1.215	5.203	0.963
23-May-95	205.73	38	0.9121	1.354	5.327	
15-May-91	*276.3*	39	0.9364	1.525	5.621	
18-Apr-94	*331.49*	40	0.9606	1.758	5.804	
10-May-98	432	41	0.9848	2.166	6.068	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	**SF220**	**Date:**	13-Jun-00
Chemical:	**dZn**	**Analyst:**	J.MacLachlan
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	34,604	82	123	35	0.00	0.00	0.00
SD:	424	92	55	25	1.00	1.00	1.00
CV:	0.01	1.12	0.45	0.72			
Min:	33,373	16	26	12.3	-0.71	-1.77	-0.90
Max:	35,925	432	216	136	3.80	1.69	4.06
Median:	34,562	42	121	23	-0.43	-0.04	-0.46

dZn	SF220		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.511)		update r2	0.51	0.511	r2:	0.049	0.056
r2 Q,[COC]:	0.51	[dZn]	Q		m:	0.0483	0.00053
slope, m:	-0.4	151	16.5		b:	-1589	-14.43
intercept, b:	158.1	123	82.0				
N: 41		-26	432				
LnConc. = mLn(Q)+b (r2=0.719)		update r2	0.72	0.719			
r2 lnQ,ln[COC]:	0.72	ln[dZn]	ln Q	[dZn]	Q		
slope, m:	-0.50	5.24	2.80	189	16		
intercept, b:	6.65	4.43	4.41	84	82		
N: 41		3.60	6.07	36	432		

N= 41

update for new data	Sampling Date	Q Discharge cfs	dZn Concentration ug/L	dZn Load lbs/day	Ln Q	Ln dZn Conc.	Ln dZn Load	for graph 0 dZn SF220 Standardized Values = (x - Avg)/SD Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	276.3	27	40.1	5.62	3.30	3.69	2.11	-1.75	0.21
MFG	4-Oct-91	21.6	106	12.3	3.07	4.66	2.51	-0.66	-0.31	-0.90
IDEQ	26-Oct-93	21.26	177	20.2	3.06	5.18	3.01	-0.66	0.98	-0.58
IDEQ	30-Nov-93	19.68	166	17.6	2.98	5.11	2.87	-0.68	0.78	-0.69
IDEQ	20-Dec-93	18.94	194	19.8	2.94	5.27	2.98	-0.68	1.29	-0.60
IDEQ	20-Dec-93	16.45	194	17.2	2.80	5.27	2.84	-0.71	1.29	-0.71
IDEQ	19-Jan-94	22.52	177	21.4	3.11	5.18	3.07	-0.65	0.98	-0.53
IDEQ	19-Jan-94	23.01	177	21.9	3.14	5.18	3.09	-0.64	0.98	-0.52
IDEQ	15-Feb-94	18.94	183	18.6	2.94	5.21	2.93	-0.68	1.09	-0.65
IDEQ	15-Feb-94	17.75	183	17.5	2.88	5.21	2.86	-0.70	1.09	-0.69
IDEQ	7-Mar-94	47.26	116	29.5	3.86	4.75	3.38	-0.38	-0.13	-0.21
IDEQ	23-Mar-94	44.55	138	33.1	3.80	4.93	3.50	-0.41	0.27	-0.07
IDEQ	6-Apr-94	133.87	73	52.6	4.90	4.29	3.96	0.56	-0.91	0.71
IDEQ	18-Apr-94	331.49	26	46.4	5.80	3.26	3.84	2.71	-1.77	0.46
IDEQ	3-May-94	160.83	58	50.2	5.08	4.06	3.92	0.86	-1.19	0.61
IDEQ	20-May-94	167.55	47	42.4	5.12	3.85	3.75	0.93	-1.39	0.30
IDEQ	8-Jun-94	76.11	65	26.6	4.33	4.17	3.28	-0.06	-1.06	-0.33
IDEQ	24-Jun-94	41.99	89	20.1	3.74	4.49	3.00	-0.43	-0.62	-0.59
IDEQ	23-Jul-94	24.81	135	18.0	3.21	4.91	2.89	-0.62	0.22	-0.67
IDEQ	16-Aug-94	20.06	176	19.0	3.00	5.17	2.94	-0.67	0.96	-0.63
IDEQ	16-Aug-94	17.17	176	16.3	2.84	5.17	2.79	-0.70	0.96	-0.74
IDEQ	9-Sep-94	19.68	150	15.9	2.98	5.01	2.77	-0.68	0.49	-0.76
IDEQ	5-Oct-94	17.54	198	18.7	2.86	5.29	2.93	-0.70	1.36	-0.64
IDEQ	15-Nov-94	20.45	183	20.1	3.02	5.21	3.00	-0.67	1.09	-0.59
IDEQ	14-Dec-94	20.06	216	23.3	3.00	5.38	3.15	-0.67	1.69	-0.46
IDEQ	11-Jan-95	76.11	121	49.5	4.33	4.80	3.90	-0.06	-0.04	0.59
IDEQ	10-Feb-95	76.11	108	44.2	4.33	4.68	3.79	-0.06	-0.28	0.37
IDEQ	8-Mar-95	71.68	115	44.3	4.27	4.74	3.79	-0.11	-0.15	0.38
IDEQ	22-Mar-95	91.17	191	93.7	4.51	5.25	4.54	0.10	1.24	2.35
IDEQ	12-Apr-95	89.35	106	51.0	4.49	4.66	3.93	0.08	-0.31	0.64
IDEQ	25-Apr-95	87.57	77	36.3	4.47	4.34	3.59	0.06	-0.84	0.06
IDEQ	8-May-95	181.86	45	44.0	5.20	3.81	3.78	1.09	-1.42	0.37
IDEQ	23-May-95	205.73	54	59.8	5.33	3.99	4.09	1.34	-1.26	0.99
IDEQ	13-Jun-95	107.11	51	29.4	4.67	3.93	3.38	0.27	-1.31	-0.22
IDEQ	28-Jun-95	57.59	68	21.1	4.05	4.22	3.05	-0.26	-1.00	-0.55
IDEQ	12-Jul-95	34.52	97	18.0	3.54	4.57	2.89	-0.52	-0.48	-0.67
IDEQ	26-Jul-95	24.33	117	15.3	3.19	4.76	2.73	-0.63	-0.11	-0.78
IDEQ	15-Aug-95	25.29	131	17.8	3.23	4.88	2.88	-0.62	0.14	-0.68
IDEQ	14-Sep-95	157.58	161	136.5	5.06	5.08	4.92	0.82	0.69	4.06
URS	8-Nov-97	42.2	135	30.6	3.74	4.91	3.42	-0.43	0.22	-0.17
URS	10-May-98	432	42.2	98.1	6.07	3.74	4.59	3.80	-1.47	2.52

dZn

Concentration over time analysis

	dZn	SF220		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.001	-0.00004
	Time	Ln[COC]	[COC]		
first:	15-May-91	4.72	113		
mid:	16-Aug-94	4.68	108		
last:	10-May-98	4.63	103		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	10-May-98	0.00	1		

Load over time analysis

	dZn	SF220			
				Load over time	
	LnLoad=mTime+b All data r2, m:			0.139	0.00049
	Time	LnLoad	Load		
first:	15-May-91	2.76	16		
mid:	16-Aug-94	3.35	29		
last:	10-May-98	4.02	56		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	10-May-98	0.00	1		

	max r2:	0.470		max r2:	0.220	
	Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.001	-0.00004	5.96	0.139	0.00049	-13.70
	0.063	-0.00035	16.74	0.220	0.00069	-20.70
	0.086	-0.00046	20.62	0.172	0.00068	-20.05
	0.075	-0.00043	19.72	0.163	0.00067	-19.69
	0.066	-0.00041	18.93	0.149	0.00064	-18.80
	0.054	-0.00037	17.57	0.139	0.00062	-18.19
	0.042	-0.00033	16.04	0.124	0.00059	-17.01
	0.033	-0.00029	14.71	0.115	0.00057	-16.47
	0.024	-0.00025	13.19	0.106	0.00056	-15.92
	0.015	-0.00020	11.45	0.093	0.00052	-14.73
	0.008	-0.00014	9.46	0.078	0.00048	-13.12
	0.006	-0.00013	9.02	0.077	0.00048	-13.32
	0.003	-0.00009	7.85	0.080	0.00050	-13.97
	0.006	-0.00013	9.13	0.103	0.00058	-16.54
	0.038	-0.00030	14.92	0.125	0.00064	-18.87
	0.064	-0.00038	17.87	0.156	0.00072	-21.78
	0.119	-0.00050	22.09	0.181	0.00079	-24.21
	0.166	-0.00059	25.24	0.180	0.00081	-24.69
	0.193	-0.00065	27.24	0.165	0.00078	-23.80
	0.188	-0.00065	27.31	0.146	0.00074	-22.20
	0.167	-0.00061	26.01	0.128	0.00069	-20.60
	0.144	-0.00057	24.45	0.103	0.00061	-17.84
	0.128	-0.00054	23.49	0.076	0.00052	-14.52
	0.099	-0.00046	20.78	0.055	0.00044	-11.62
	0.074	-0.00039	18.21	0.038	0.00036	-8.85
	0.046	-0.00028	14.44	0.026	0.00029	-6.54
	0.036	-0.00025	13.36	0.032	0.00033	-8.00
	0.030	-0.00024	12.73	0.036	0.00036	-8.94
	0.023	-0.00021	11.68	0.041	0.00039	-9.94
	0.005	-0.00009	7.56	0.088	0.00054	-15.31
	0.002	-0.00005	6.19	0.112	0.00061	-17.95
	0.002	-0.00006	6.52	0.118	0.00064	-18.99
	0.023	-0.00018	10.74	0.141	0.00072	-21.61
	0.067	-0.00029	14.80	0.214	0.00088	-27.40
	0.199	-0.00046	20.76	0.217	0.00091	-28.66
	0.376	-0.00062	26.36	0.186	0.00086	-26.72
	0.470	-0.00073	30.47	0.125	0.00070	-21.09

update for EV, CV:

dZn
SF220
• LN Analysis
dZn

Load

Load Data, EV=34.8 lbs/day CV=0.719

Avg:	35
SD:	25
CV:	0.72
Min:	12.3
Max:	136
Median:	23

Load Data-based LN

u	ln dZn Load	dZn Load
3	5.3	196
0	3.34	28
-3	1.40	4.1

35	34.8
0.72	0.719

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.914, EV=35lbs/day CV=0.666; max r2=0.97**

		u	lnLoad	Load		
r2 u,lnLoad:	0.914	3	5.19	179		
slope, m:	1.650	0	3.37	29		
intercept, b:	-5.561	-3	1.55	4.7		
N:	41				0.914	0.914
E[Load]:	35.0	Parameter Estimates			35.0	35
SD[Load]:	23	from LN regression			0.7	0.666
CV[Load]:	0.67	update graph label			max r2	
		N: 41			0.972	

Date	dZn Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
4-Oct-91	12.3	1	0.0152	-2.166	2.511	0.914
26-Jul-95	15.3	2	0.0394	-1.758	2.729	0.920
9-Sep-94	15.9	3	0.0636	-1.525	2.765	0.931
16-Aug-94	16.3	4	0.0879	-1.354	2.789	0.939
20-Dec-93	17.2	5	0.1121	-1.215	2.843	0.946
15-Feb-94	17.5	6	0.1364	-1.097	2.861	0.953
30-Nov-93	17.6	7	0.1606	-0.992	2.867	0.959
15-Aug-95	17.8	8	0.1848	-0.897	2.881	0.964
12-Jul-95	18.0	9	0.2091	-0.810	2.891	0.967
23-Jul-94	18.0	10	0.2333	-0.728	2.891	0.970
15-Feb-94	18.6	11	0.2576	-0.651	2.926	0.971
5-Oct-94	18.7	12	0.2818	-0.577	2.928	0.972
16-Aug-94	19.0	13	0.3061	-0.507	2.944	0.972
20-Dec-93	19.8	14	0.3303	-0.439	2.984	0.971
24-Jun-94	20.1	15	0.3545	-0.373	3.001	0.970
15-Nov-94	20.1	16	0.3788	-0.309	3.002	0.969
26-Oct-93	20.2	17	0.4030	-0.246	3.008	0.966
28-Jun-95	21.1	18	0.4273	-0.183	3.048	0.963
19-Jan-94	21.4	19	0.4515	-0.122	3.065	0.960
19-Jan-94	21.9	20	0.4758	-0.061	3.087	0.957
14-Dec-94	23.3	21	0.5000	0.000	3.149	0.955
8-Jun-94	26.6	22	0.5242	0.061	3.282	0.953
13-Jun-95	29.4	23	0.5485	0.122	3.381	0.949
7-Mar-94	29.5	24	0.5727	0.183	3.384	0.944
8-Nov-97	30.6	25	0.5970	0.246	3.423	0.938
23-Mar-94	33.1	26	0.6212	0.309	3.499	0.931
25-Apr-95	36.3	27	0.6455	0.373	3.591	0.923
15-May-91	40.1	28	0.6697	0.439	3.692	0.915
20-May-94	42.4	29	0.6939	0.507	3.746	0.915
8-May-95	44.0	30	0.7182	0.577	3.785	0.919
10-Feb-95	44.2	31	0.7424	0.651	3.789	0.928
8-Mar-95	44.3	32	0.7667	0.728	3.792	0.932
18-Apr-94	46.4	33	0.7909	0.810	3.837	0.931
11-Jan-95	49.5	34	0.8152	0.897	3.903	0.930
3-May-94	50.2	35	0.8394	0.992	3.916	0.936
12-Apr-95	51.0	36	0.8636	1.097	3.931	0.931
6-Apr-94	52.6	37	0.8879	1.215	3.962	0.909
23-May-95	59.8	38	0.9121	1.354	4.090	
22-Mar-95	93.7	39	0.9364	1.525	4.540	
10-May-98	98.1	40	0.9606	1.758	4.586	
14-Sep-95	136.5	41	0.9848	2.166	4.916	

update for EV, CV:

dZn		SF220		123	123
LN Analysis		dZn		0.45	0.446

Concentration

Conc. Data, EV=123 ug/L CV=0.446

		Data-based LN		
Avg:	123	u	ln[dZn]	[dZn]
SD:	55	3	6.0	404
CV:	0.45	0	4.72	112
Min:	26	-3	3.44	31
Max:	216			
Median:	121			

				0.902	0.902
u=mLn(Conc.)+b:				130.2	130
update for r2, EV, CV.	r2=0.902, EV=130 ug/L CV=0.679; max r2=0.96			0.679	0.679
r2 u,lnConc:	0.902	u	lnConc.	Conc.	
slope, m:	1.624	3	6.53	683	
intercept, b:	-7.600	0	4.68	108	
N: 41		-3	2.83	17	
E[Conc]:	130.2	Parameter Estimates			
SD[Conc]:	88	from LN regression			
CV[Conc]:	0.68	update graph label			

	dZn	N: 41				max r2 0.959
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
18-Apr-94	26	1	0.0152	-2.166	3.258	0.902
15-May-91	27	2	0.0394	-1.758	3.296	0.888
10-May-98	42.2	3	0.0636	-1.525	3.742	0.887
8-May-95	45	4	0.0879	-1.354	3.807	0.877
20-May-94	47	5	0.1121	-1.215	3.850	0.867
13-Jun-95	51	6	0.1364	-1.097	3.932	0.860
23-May-95	54	7	0.1606	-0.992	3.989	0.853
3-May-94	58	8	0.1848	-0.897	4.060	0.850
8-Jun-94	65	9	0.2091	-0.810	4.174	0.849
28-Jun-95	68	10	0.2333	-0.728	4.220	0.846
6-Apr-94	73	11	0.2576	-0.651	4.290	0.847
25-Apr-95	77	12	0.2818	-0.577	4.344	0.851
24-Jun-94	89	13	0.3061	-0.507	4.489	0.862
12-Jul-95	97	14	0.3303	-0.439	4.575	0.860
4-Oct-91	106	15	0.3545	-0.373	4.663	0.854
12-Apr-95	106	16	0.3788	-0.309	4.663	0.843
10-Feb-95	108	17	0.4030	-0.246	4.682	0.833
8-Mar-95	115	18	0.4273	-0.183	4.745	0.825
7-Mar-94	116	19	0.4515	-0.122	4.754	0.813
26-Jul-95	117	20	0.4758	-0.061	4.762	0.803
11-Jan-95	121	21	0.5000	0.000	4.796	0.800
15-Aug-95	131	22	0.5242	0.061	4.875	0.803
8-Nov-97	135	23	0.5485	0.122	4.905	0.793
23-Jul-94	135	24	0.5727	0.183	4.905	0.784
23-Mar-94	138	25	0.5970	0.246	4.927	0.800
9-Sep-94	150	26	0.6212	0.309	5.011	0.873
14-Sep-95	161	27	0.6455	0.373	5.081	0.931
30-Nov-93	166	28	0.6697	0.439	5.112	0.947
16-Aug-94	176	29	0.6939	0.507	5.170	0.956
16-Aug-94	176	30	0.7182	0.577	5.170	0.959
19-Jan-94	177	31	0.7424	0.651	5.176	0.958
19-Jan-94	177	32	0.7667	0.728	5.176	0.956
26-Oct-93	177	33	0.7909	0.810	5.176	0.948
15-Feb-94	183	34	0.8152	0.897	5.209	0.938
15-Feb-94	183	35	0.8394	0.992	5.209	0.936
15-Nov-94	183	36	0.8636	1.097	5.209	0.920
22-Mar-95	191	37	0.8879	1.215	5.252	0.895
20-Dec-93	194	38	0.9121	1.354	5.268	
20-Dec-93	194	39	0.9364	1.525	5.268	
5-Oct-94	198	40	0.9606	1.758	5.288	
14-Dec-94	216	41	0.9848	2.166	5.375	

		update for EV, CV:				
dZn		**SF220**			82	82
LN Analysis		**dZn**			1.12	1.12
Discharge, Q		**Q Data, EV=82 cfs CV=1.12**				
Avg:	**82**	**Q Data-based LN**				
SD:	**92**	u	lnQ	Q		
CV:	**1.12**	3	6.7	819		
Min:	**16**	0	4.00	54		
Max:	**432**	-3	1.29	4		
Median:	**42**					
					0.907	0.907
					85.8	85.8
	u=mLn(Q)+b:				1.39	1.39
update for r2, EV, CV:	**r2=0.907, EV=85.8 cfs CV=1.39; max r2=0.98**					
	r2 u,lnQ:	0.907	u	lnQ	Q	
	slope, m:	0.966	3	7.02	1121	
	intercept, b:	-3.784	0	3.92	50	
	N:	41	-3	0.81	2	
	E[Q]:	85.8	Parameter Estimates			
	SD[Q]:	119	from LN regression			
	CV[Q]:	1.39	update graph label			

	Q	N: 41				max r2 0.979
	Discharge	i	i-3/8 / N+1/4	u	Ln	r2
Date	cfs	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
20-Dec-93	16.45	1	0.0152	-2.166	2.800	0.907
16-Aug-94	17.17	2	0.0394	-1.758	2.843	0.931
5-Oct-94	17.54	3	0.0636	-1.525	2.864	0.945
15-Feb-94	17.75	4	0.0879	-1.354	2.876	0.955
15-Feb-94	18.94	5	0.1121	-1.215	2.941	0.961
20-Dec-93	18.94	6	0.1364	-1.097	2.941	0.967
9-Sep-94	19.68	7	0.1606	-0.992	2.980	0.971
30-Nov-93	19.68	8	0.1848	-0.897	2.980	0.975
14-Dec-94	20.06	9	0.2091	-0.810	2.999	0.976
16-Aug-94	20.06	10	0.2333	-0.728	2.999	0.977
15-Nov-94	20.45	11	0.2576	-0.651	3.018	0.976
26-Oct-93	21.26	12	0.2818	-0.577	3.057	0.975
4-Oct-91	21.6	13	0.3061	-0.507	3.073	0.973
19-Jan-94	22.52	14	0.3303	-0.439	3.114	0.971
19-Jan-94	23.01	15	0.3545	-0.373	3.136	0.969
26-Jul-95	24.33	16	0.3788	-0.309	3.192	0.967
23-Jul-94	24.81	17	0.4030	-0.246	3.211	0.966
15-Aug-95	25.29	18	0.4273	-0.183	3.230	0.968
12-Jul-95	34.52	19	0.4515	-0.122	3.542	0.977
24-Jun-94	41.99	20	0.4758	-0.061	3.737	0.977
8-Nov-97	42.2	21	0.5000	0.000	3.742	0.975
23-Mar-94	44.55	22	0.5242	0.061	3.797	0.974
7-Mar-94	47.26	23	0.5485	0.122	3.856	0.975
28-Jun-95	57.59	24	0.5727	0.183	4.053	0.979
8-Mar-95	71.68	25	0.5970	0.246	4.272	0.978
8-Jun-94	76.11	26	0.6212	0.309	4.332	0.977
10-Feb-95	76.11	27	0.6455	0.373	4.332	0.975
11-Jan-95	76.11	28	0.6697	0.439	4.332	0.972
25-Apr-95	87.57	29	0.6939	0.507	4.472	0.970
12-Apr-95	89.35	30	0.7182	0.577	4.493	0.965
22-Mar-95	91.17	31	0.7424	0.651	4.513	0.962
13-Jun-95	107.11	32	0.7667	0.728	4.674	0.971
6-Apr-94	133.87	33	0.7909	0.810	4.897	0.978
14-Sep-95	157.58	34	0.8152	0.897	5.060	0.973
3-May-94	160.83	35	0.8394	0.992	5.080	0.977
20-May-94	167.55	36	0.8636	1.097	5.121	0.973
8-May-95	181.86	37	0.8879	1.215	5.203	0.963
23-May-95	205.73	38	0.9121	1.354	5.327	
15-May-91	276.3	39	0.9364	1.525	5.621	
18-Apr-94	331.49	40	0.9606	1.758	5.804	
10-May-98	432	41	0.9848	2.166	6.068	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SF220 **Date:** 20-Jun-00
Chemical: tCd **Analyst:** J.MacLachlan
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,604	82	1	0.3		0.00	0.00	0.00
SD:	424	92	0.4	0.2		1.00	1.00	1.00
CV:	0.01	1.12	0.52	0.96				
Min:	33,373	16	0.2	0.1		-0.71	-1.50	-0.78
Max:	35,925	432	2	1		3.80	3.55	3.37
Median:	34,562	42	1	0.1		-0.43	-0.19	-0.49

tCd SF220 : Concentration v. Discharge, Q Q = mTime +b LnQ = mTime +b

Conc. = mQ+b (r2=0.118)	update r2	0.12	0.118	r2:	0.049	0.056	
r2 Q,[COC]:	0.12	[tCd]	Q	m:	0.0483	0.00053	
slope, m:	-0.002	1	16.5	b:	-1589	-14.43	
intercept, b:	0.9	1	82.0				
N: 38		0.2	432				
LnConc. = mLn(Q)+b (r2=0.234)	update r2	0.23	0.234				
r2 lnQ,ln[COC]:	0.23	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.24	-0.11	2.80	1	16		
intercept, b:	0.57	-0.50	4.41	1	82		
N: 38		-0.90	6.07	0.4	432		

N= 41

	Sampling Date	Q Discharge cfs	tCd Concentration ug/L	tCd Load lbs/day	Ln Q	Ln tCd Conc.	Ln tCd Load	tCd SF220 Standardized Values = (x - Avg)/SD Q	Conc	Load	for graph 0
update for new data											
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis				
MFG	15-May-91	276.3	0.2	0.3	5.62	-1.61	-1.21	2.11	-1.43	0.18	
MFG	4-Oct-91	21.6	0.6	0.1	3.07	-0.51	-2.66	-0.66	-0.43	-0.75	
IDEQ	26-Oct-93	21.26	0.8	0.1	3.06	-0.22	-2.39	-0.66	0.06	-0.66	
IDEQ	30-Nov-93	19.68	0.7	0.1	2.98	-0.36	-2.60	-0.68	-0.19	-0.73	
IDEQ	20-Dec-93	18.94	0.8	0.1	2.94	-0.22	-2.51	-0.68	0.06	-0.70	
IDEQ	20-Dec-93	16.45	0.8	0.1	2.80	-0.22	-2.65	-0.71	0.06	-0.75	
IDEQ	19-Jan-94	22.52	0.6	0.1	3.11	-0.51	-2.62	-0.65	-0.43	-0.74	
IDEQ	19-Jan-94	23.01	0.6	0.1	3.14	-0.51	-2.60	-0.64	-0.43	-0.73	
IDEQ	15-Feb-94	18.94	0.7	0.1	2.94	-0.36	-2.64	-0.68	-0.19	-0.75	
IDEQ	15-Feb-94	17.75	0.7	0.1	2.88	-0.36	-2.71	-0.70	-0.19	-0.76	
IDEQ	7-Mar-94	47.26	0.5	0.1	3.86	-0.69	-2.06	-0.38	-0.68	-0.52	
IDEQ	23-Mar-94	44.55	0.6	0.1	3.80	-0.51	-1.94	-0.41	-0.43	-0.45	
IDEQ	6-Apr-94	133.87	0.5	0.4	4.90	-0.69	-1.02	0.56	-0.68	0.44	
IDEQ	*18-Apr-94*	*331.49*			5.80			2.71			
IDEQ	3-May-94	160.83	0.5	0.4	5.08	-0.69	-0.84	0.86	-0.68	0.73	
IDEQ	20-May-94	167.55	0.7	0.6	5.12	-0.36	-0.46	0.93	-0.19	1.55	
IDEQ	*8-Jun-94*	*76.11*			4.33			-0.06			
IDEQ	24-Jun-94	41.99	0.6	0.1	3.74	-0.51	-2.00	-0.43	-0.43	-0.48	
IDEQ	23-Jul-94	24.81	0.7	0.1	3.21	-0.36	-2.37	-0.62	-0.19	-0.65	
IDEQ	16-Aug-94	20.06	2.2	0.2	3.00	0.79	-1.44	-0.67	3.55	-0.07	
IDEQ	16-Aug-94	17.17	2.2	0.2	2.84	0.79	-1.59	-0.70	3.55	-0.21	
IDEQ	9-Sep-94	19.68	0.6	0.1	2.98	-0.51	-2.76	-0.68	-0.43	-0.78	
IDEQ	5-Oct-94	17.54	1	0.1	2.86	0.00	-2.36	-0.70	0.56	-0.65	
IDEQ	15-Nov-94	20.45	1	0.1	3.02	0.00	-2.21	-0.67	0.56	-0.59	
IDEQ	14-Dec-94	20.06	1.1	0.1	3.00	0.10	-2.13	-0.67	0.81	-0.55	
IDEQ	11-Jan-95	76.11	0.7	0.3	4.33	-0.36	-1.25	-0.06	-0.19	0.14	
IDEQ	10-Feb-95	76.11	0.6	0.2	4.33	-0.51	-1.40	-0.06	-0.43	-0.03	
IDEQ	8-Mar-95	71.68	0.6	0.2	4.27	-0.51	-1.46	-0.11	-0.43	-0.09	
IDEQ	22-Mar-95	91.17	1	0.5	4.51	0.00	-0.71	0.10	0.56	0.97	
IDEQ	12-Apr-95	89.35	1.2	0.6	4.49	0.18	-0.55	0.08	1.06	1.32	
IDEQ	25-Apr-95	87.57	0.5	0.2	4.47	-0.69	-1.45	0.06	-0.68	-0.07	
IDEQ	8-May-95	181.86	1.1	1.1	5.20	0.10	0.07	1.09	0.81	3.37	
IDEQ	23-May-95	205.73	0.9	1.0	5.33	-0.11	0.00	1.34	0.31	3.04	
IDEQ	13-Jun-95	107.11	0.6	0.3	4.67	-0.51	-1.06	0.27	-0.43	0.38	
IDEQ	*28-Jun-95*	*57.59*			4.05			-0.26			
IDEQ	12-Jul-95	34.52	0.5	0.1	3.54	-0.69	-2.38	-0.52	-0.68	-0.66	
IDEQ	26-Jul-95	24.33	1	0.1	3.19	0.00	-2.03	-0.63	0.56	-0.50	
IDEQ	15-Aug-95	25.29	0.6	0.1	3.23	-0.51	-2.51	-0.62	-0.43	-0.70	
IDEQ	14-Sep-95	157.58	0.7	0.6	5.06	-0.36	-0.52	0.82	-0.19	1.39	
URS	8-Nov-97	42.2	0.56	0.1	3.74	-0.58	-2.06	-0.43	-0.53	-0.52	
URS	10-May-98	432	0.17	0.4	6.07	-1.77	-0.93	3.80	-1.50	0.58	

tCd

Concentration over time analysis

	tCd	SF220		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.000**	**-0.00002**
	Time	**Ln[COC]**	**[COC]**		
first:	15-May-91	-0.34	1		
mid:	16-Aug-94	-0.36	1		
last:	10-May-98	-0.39	1		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	10-May-98	0.00	1		

Load over time analysis

	tCd	SF220			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.090**	**0.00056**
	Time	**LnLoad**	**Load**		
first:	15-May-91	-2.43	0.1		
mid:	16-Aug-94	-1.76	0.2		
last:	10-May-98	-0.99	0.4		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	10-May-98	0.00	1		

max r2: 0.651

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.000	-0.00002	0.30
0.076	-0.00030	10.10
0.124	-0.00044	14.82
0.124	-0.00044	15.06
0.130	-0.00046	15.71
0.129	-0.00047	15.93
0.128	-0.00048	16.18
0.143	-0.00051	17.41
0.161	-0.00055	18.84
0.170	-0.00058	19.72
0.180	-0.00061	20.75
0.220	-0.00068	23.27
0.249	-0.00073	25.25
0.304	-0.00082	28.31
0.304	-0.00082	28.31
0.371	-0.00091	31.58
0.400	-0.00097	33.57
0.400	-0.00097	33.57
0.451	-0.00105	36.29
0.484	-0.00111	38.38
0.474	-0.00101	34.96
0.473	-0.00089	30.81
0.526	-0.00096	33.22
0.510	-0.00095	32.90
0.493	-0.00094	32.34
0.472	-0.00090	31.04
0.481	-0.00093	31.96
0.514	-0.00097	33.69
0.550	-0.00103	35.50
0.532	-0.00100	34.51
0.519	-0.00093	32.03
0.595	-0.00101	35.00
0.576	-0.00094	32.45
0.544	-0.00089	30.66
0.556	-0.00094	32.42
0.556	-0.00094	32.42
0.651	-0.00108	37.47

max r2: 0.156

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.090	0.00056	-21.20
0.156	0.00083	-30.59
0.127	0.00084	-30.80
0.115	0.00081	-29.67
0.100	0.00075	-27.71
0.086	0.00070	-25.86
0.069	0.00062	-23.24
0.053	0.00054	-20.49
0.038	0.00046	-17.41
0.024	0.00036	-13.89
0.010	0.00023	-9.54
0.006	0.00017	-7.42
0.003	0.00012	-5.56
0.006	0.00018	-7.70
0.006	0.00018	-7.70
0.013	0.00027	-10.89
0.033	0.00043	-16.35
0.033	0.00043	-16.35
0.025	0.00038	-14.73
0.014	0.00028	-11.12
0.015	0.00029	-11.66
0.013	0.00029	-11.46
0.002	0.00010	-4.73
0.001	-0.00006	0.65
0.007	-0.00020	5.58
0.023	-0.00034	10.61
0.025	-0.00036	11.27
0.030	-0.00040	12.80
0.038	-0.00046	14.82
0.029	-0.00040	12.68
0.016	-0.00029	9.02
0.020	-0.00034	10.68
0.001	-0.00006	0.54
0.034	0.00032	-12.91
0.098	0.00054	-20.66
0.098	0.00054	-20.66
0.044	0.00035	-14.09

update for EV, CV:

tCd **SF220**
LN Analysis **tCd**

Load **Load Data, EV=0.253 lbs/day CV=0.964**

Avg:	**0.3**	**Load Data-based LN**		
SD:	**0.2**	u	ln tCd Load	tCd Load
CV:	**0.96**	3	0.7	2
Min:	**0.1**	0	-1.70	0.18
Max:	**1**	-3	-4.13	0.02
Median:	**0.1**			

0	0.253
0.96	0.964

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.96, EV=0.25lbs/day CV=1.19; max r2=0.99**

r2 u,lnLoad:	0.960	u	lnLoad	Load		
slope, m:	1.064	3	0.99	3		
intercept, b:	1.945	0	-1.83	0.16		
N:	38	-3	-4.65	0.01		
E[Load]:	0.2	Parameter Estimates			0.960	0.96
SD[Load]:	0.3	from LN regression			0.2	0.25
CV[Load]:	1.19	update graph label			1.2	1.19
					max r2	

tCd N: 41 0.985

Date	**Load lbs/day Ranked**	**i rank**	**i-3/8 / N+1/4 plotting points**	**u y-axis**	**Ln x-axis**	**r2 forward**
update and rank for new data						
28-Jun-95		1	0.0152	-2.166		
8-Jun-94		2	0.0394	-1.758		
9-Sep-94	**0.1**	3	0.0636	-1.525	-2.756	0.960
15-Feb-94	**0.1**	4	0.0879	-1.354	-2.705	0.968
4-Oct-91	**0.1**	5	0.1121	-1.215	-2.663	0.974
20-Dec-93	**0.1**	6	0.1364	-1.097	-2.648	0.979
15-Feb-94	**0.1**	7	0.1606	-0.992	-2.640	0.982
19-Jan-94	**0.1**	8	0.1848	-0.897	-2.621	0.984
30-Nov-93	**0.1**	9	0.2091	-0.810	-2.602	0.985
19-Jan-94	**0.1**	10	0.2333	-0.728	-2.600	0.985
20-Dec-93	**0.1**	11	0.2576	-0.651	-2.507	0.984
15-Aug-95	**0.1**	12	0.2818	-0.577	-2.505	0.984
26-Oct-93	**0.1**	13	0.3061	-0.507	-2.391	0.982
12-Jul-95	**0.1**	14	0.3303	-0.439	-2.377	0.981
23-Jul-94	**0.1**	15	0.3545	-0.373	-2.370	0.980
5-Oct-94	**0.1**	16	0.3788	-0.309	-2.361	0.978
15-Nov-94	**0.1**	17	0.4030	-0.246	-2.207	0.977
14-Dec-94	**0.1**	18	0.4273	-0.183	-2.131	0.975
7-Mar-94	**0.1**	19	0.4515	-0.122	-2.063	0.973
8-Nov-97	**0.1**	20	0.4758	-0.061	-2.062	0.970
26-Jul-95	**0.1**	21	0.5000	0.000	-2.033	0.968
24-Jun-94	**0.1**	22	0.5242	0.061	-1.998	0.968
23-Mar-94	**0.1**	23	0.5485	0.122	-1.939	0.970
16-Aug-94	**0.2**	24	0.5727	0.183	-1.593	0.979
18-Apr-94		25	0.5970	0.246		
8-Mar-95	**0.2**	26	0.6212	0.309	-1.464	0.977
25-Apr-95	**0.2**	27	0.6455	0.373	-1.446	0.975
16-Aug-94	**0.2**	28	0.6697	0.439	-1.438	0.971
10-Feb-95	**0.2**	29	0.6939	0.507	-1.404	0.968
11-Jan-95	**0.3**	30	0.7182	0.577	-1.250	0.968
15-May-91	**0.3**	31	0.7424	0.651	-1.213	0.963
13-Jun-95	**0.3**	32	0.7667	0.728	-1.062	0.959
6-Apr-94	**0.4**	33	0.7909	0.810	-1.021	0.951
10-May-98	**0.4**	34	0.8152	0.897	-0.929	0.941
3-May-94	**0.4**	35	0.8394	0.992	-0.838	0.927
22-Mar-95	**0.5**	36	0.8636	1.097	-0.712	0.905
12-Apr-95	**0.6**	37	0.8879	1.215	-0.550	0.869
14-Sep-95	**0.6**	38	0.9121	1.354	-0.522	
20-May-94	**0.6**	39	0.9364	1.525	-0.460	
23-May-95	**1.0**	40	0.9606	1.758	-0.004	
8-May-95	**1.1**	41	0.9848	2.166	0.073	

update for EV, CV:

tCd		SF220		1	0.774
LN Analysis		tCd		0.52	0.519

Concentration — **Conc. Data, EV=0.774 ug/L CV=0.519**

		Data-based LN		
Avg:	1	u	ln[tCd]	[tCd]
SD:	0.4	3	1.1	3
CV:	0.52	0	-0.37	1
Min:	0.2	-3	-1.84	0.2
Max:	2			
Median:	1			

u=mLn{Conc.}+b:

update for r2, EV, CV: **r2=0.834, EV=0.765 ug/L CV=0.665; max r2=0.92**

r2 u,lnConc:	0.834	u	lnConc.	Conc.
slope, m:	1.652	3	1.36	4
intercept, b:	0.746	0	-0.45	1
N:	38	-3	-2.27	0.1
E[Conc]:	0.8	Parameter Estimates		
SD[Conc]:	1	from LN regression		
CV[Conc]:	0.67	update graph label		

						0.834	0.834
						0.8	0.765
						0.665	0.665

	tCd	N: 41				max r2 0.920
Date	Concentration ug/L Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
18-Apr-94		1	0.0152	-2.166		
8-Jun-94		2	0.0394	-1.758		
28-Jun-95		3	0.0636	-1.525		
10-May-98	0.17	4	0.0879	-1.354	-1.772	0.834
15-May-91	0.2	5	0.1121	-1.215	-1.609	0.855
7-Mar-94	0.5	6	0.1364	-1.097	-0.693	0.899
6-Apr-94	0.5	7	0.1606	-0.992	-0.693	0.901
3-May-94	0.5	8	0.1848	-0.897	-0.693	0.902
25-Apr-95	0.5	9	0.2091	-0.810	-0.693	0.900
12-Jul-95	0.5	10	0.2333	-0.728	-0.693	0.897
8-Nov-97	0.56	11	0.2576	-0.651	-0.580	0.892
4-Oct-91	0.6	12	0.2818	-0.577	-0.511	0.893
19-Jan-94	0.6	13	0.3061	-0.507	-0.511	0.901
19-Jan-94	0.6	14	0.3303	-0.439	-0.511	0.908
23-Mar-94	0.6	15	0.3545	-0.373	-0.511	0.913
24-Jun-94	0.6	16	0.3788	-0.309	-0.511	0.917
9-Sep-94	0.6	17	0.4030	-0.246	-0.511	0.919
10-Feb-95	0.6	18	0.4273	-0.183	-0.511	0.920
8-Mar-95	0.6	19	0.4515	-0.122	-0.511	0.918
13-Jun-95	0.6	20	0.4758	-0.061	-0.511	0.915
15-Aug-95	0.6	21	0.5000	0.000	-0.511	0.910
30-Nov-93	0.7	22	0.5242	0.061	-0.357	0.902
15-Feb-94	0.7	23	0.5485	0.122	-0.357	0.907
15-Feb-94	0.7	24	0.5727	0.183	-0.357	0.910
20-May-94	0.7	25	0.5970	0.246	-0.357	0.911
23-Jul-94	0.7	26	0.6212	0.309	-0.357	0.908
11-Jan-95	0.7	27	0.6455	0.373	-0.357	0.902
14-Sep-95	0.7	28	0.6697	0.439	-0.357	0.892
26-Oct-93	0.8	29	0.6939	0.507	-0.223	0.878
20-Dec-93	0.8	30	0.7182	0.577	-0.223	0.871
20-Dec-93	0.8	31	0.7424	0.651	-0.223	0.858
23-May-95	0.9	32	0.7667	0.728	-0.105	0.835
5-Oct-94	1	33	0.7909	0.810	0.000	0.823
15-Nov-94	1	34	0.8152	0.897	0.000	0.837
22-Mar-95	1	35	0.8394	0.992	0.000	0.845
26-Jul-95	1	36	0.8636	1.097	0.000	0.838
14-Dec-94	1.1	37	0.8879	1.215	0.095	0.803
8-May-95	1.1	38	0.9121	1.354	0.095	
12-Apr-95	1.2	39	0.9364	1.525	0.182	
16-Aug-94	2.2	40	0.9606	1.758	0.788	
16-Aug-94	2.2	41	0.9848	2.166	0.788	

update for EV, CV:

tCd		**SF220**			82	82
LN Analysis		**tCd**			1.12	1.12
Discharge, Q		**Q Data, EV=82 cfs CV=1.12**				
Avg:	**82**	**Q Data-based LN**				
SD:	**92**	u	lnQ	Q		
CV:	**1.12**	3	6.7	819		
Min:	**16**	0	4.00	54		
Max:	**432**	-3	1.29	4		
Median:	**42**					
					0.907	0.907
					85.8	85.8
	u=mLn(Q)+b:				1.39	1.39

update for r2, EV, CV: **r2=0.907, EV=85.8 cfs CV=1.39; max r2=0.98**

r2 u,lnQ:	0.907	u	lnQ	Q
slope, m:	0.966	3	7.02	1121
intercept, b:	-3.784	0	3.92	50
N: 41		-3	0.81	2
E[Q]:	85.8	Parameter Estimates		
SD[Q]:	119	from LN regression		
CV[Q]:	1.39	update graph label		

	Q	N: 41				max r2 0.979
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
20-Dec-93	16.45	1	0.0152	-2.166	2.800	0.907
16-Aug-94	17.17	2	0.0394	-1.758	2.843	0.931
5-Oct-94	17.54	3	0.0636	-1.525	2.864	0.945
15-Feb-94	17.75	4	0.0879	-1.354	2.876	0.955
20-Dec-93	18.94	5	0.1121	-1.215	2.941	0.961
15-Feb-94	18.94	6	0.1364	-1.097	2.941	0.967
30-Nov-93	19.68	7	0.1606	-0.992	2.980	0.971
9-Sep-94	19.68	8	0.1848	-0.897	2.980	0.975
16-Aug-94	20.06	9	0.2091	-0.810	2.999	0.976
14-Dec-94	20.06	10	0.2333	-0.728	2.999	0.977
15-Nov-94	20.45	11	0.2576	-0.651	3.018	0.976
26-Oct-93	21.26	12	0.2818	-0.577	3.057	0.975
4-Oct-91	21.6	13	0.3061	-0.507	3.073	0.973
19-Jan-94	22.52	14	0.3303	-0.439	3.114	0.971
19-Jan-94	23.01	15	0.3545	-0.373	3.136	0.969
26-Jul-95	24.33	16	0.3788	-0.309	3.192	0.967
23-Jul-94	24.81	17	0.4030	-0.246	3.211	0.966
15-Aug-95	25.29	18	0.4273	-0.183	3.230	0.968
12-Jul-95	34.52	19	0.4515	-0.122	3.542	0.977
24-Jun-94	41.99	20	0.4758	-0.061	3.737	0.977
8-Nov-97	42.2	21	0.5000	0.000	3.742	0.975
23-Mar-94	44.55	22	0.5242	0.061	3.797	0.974
7-Mar-94	47.26	23	0.5485	0.122	3.856	0.975
28-Jun-95	*57.59*	24	0.5727	0.183	4.053	0.979
8-Mar-95	71.68	25	0.5970	0.246	4.272	0.978
8-Jun-94	*76.11*	26	0.6212	0.309	4.332	0.977
11-Jan-95	76.11	27	0.6455	0.373	4.332	0.975
10-Feb-95	76.11	28	0.6697	0.439	4.332	0.972
25-Apr-95	87.57	29	0.6939	0.507	4.472	0.970
12-Apr-95	89.35	30	0.7182	0.577	4.493	0.965
22-Mar-95	91.17	31	0.7424	0.651	4.513	0.962
13-Jun-95	107.11	32	0.7667	0.728	4.674	0.971
6-Apr-94	133.87	33	0.7909	0.810	4.897	0.978
14-Sep-95	157.58	34	0.8152	0.897	5.060	0.973
3-May-94	160.83	35	0.8394	0.992	5.080	0.977
20-May-94	167.55	36	0.8636	1.097	5.121	0.973
8-May-95	181.86	37	0.8879	1.215	5.203	0.963
23-May-95	205.73	38	0.9121	1.354	5.327	
15-May-91	276.3	39	0.9364	1.525	5.621	
18-Apr-94	*331.49*	40	0.9606	1.758	5.804	
10-May-98	432	41	0.9848	2.166	6.068	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.	see comment
Station: SF220	**Date:** 13-Jun-00
Chemical: tPb	**Analyst:** J.MacLachlan
Notes:	
Input Discharge and Concentration Data below (in red)	

	Date	Discharge	Concentration	Load			
Avg:	34,604	82	11	6	0.00	0.00	0.00
SD:	424	92	9	10	1.00	1.00	1.00
CV:	0.01	1.12	0.84	1.88			
Min:	33,373	16	5	0.6	-0.71	-0.66	-0.48
Max:	35,925	432	63	57	3.80	5.53	4.97
Median:	34,562	42	9	2	-0.43	-0.23	-0.32

tPb SF220		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.0147)	update r2	0.01	0.0147		r2:	0.049	0.056
r2 Q,[COC]:	0.01	[tPb]	Q		m:	0.0483	0.00053
slope, m:	0.01	10	16.5		b:	-1589	-14.43
intercept, b:	10.2	11	82.0				
N: 41		16	432				
LnConc. = mLn(Q)+b (r2=0.00065)		update r2	0.00	0.00065			
r2 lnQ,ln[COC]:	0.001	ln[tPb]	ln Q	[tPb]	Q		
slope, m:	-0.01	2.27	2.80	10	16		
intercept, b:	2.31	2.25	4.41	9	82		
N: 41		2.22	6.07	9	432		

N= 41

	Sampling Date	Q Discharge	tPb Concentration	tPb Load	Ln Q	Ln tPb Conc.	Ln tPb Load	tPb SF220 for graph 0 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	276.3	7	10.4	5.62	1.95	2.34	2.11	-0.45	0.47
MFG	4-Oct-91	21.6	26	3.0	3.07	3.26	1.11	-0.66	1.58	-0.24
IDEQ	26-Oct-93	21.26	8	0.9	3.06	2.08	-0.09	-0.66	-0.34	-0.44
IDEQ	30-Nov-93	19.68	18	1.9	2.98	2.89	0.64	-0.68	0.73	-0.35
IDEQ	20-Dec-93	18.94	9	0.9	2.94	2.20	-0.09	-0.68	-0.23	-0.44
IDEQ	20-Dec-93	16.45	9	0.8	2.80	2.20	-0.23	-0.71	-0.23	-0.46
IDEQ	19-Jan-94	22.52	11	1.3	3.11	2.40	0.29	-0.65	-0.02	-0.40
IDEQ	19-Jan-94	23.01	11	1.4	3.14	2.40	0.31	-0.64	-0.02	-0.40
IDEQ	15-Feb-94	18.94	13	1.3	2.94	2.56	0.28	-0.68	0.19	-0.40
IDEQ	15-Feb-94	17.75	13	1.2	2.88	2.56	0.22	-0.70	0.19	-0.41
IDEQ	7-Mar-94	47.26	9	2.3	3.86	2.20	0.83	-0.38	-0.23	-0.31
IDEQ	23-Mar-94	44.55	9	2.2	3.80	2.20	0.77	-0.41	-0.23	-0.32
IDEQ	6-Apr-94	133.87	10	7.2	4.90	2.30	1.97	0.56	-0.13	0.16
IDEQ	18-Apr-94	331.49	21	37.5	5.80	3.04	3.62	2.71	1.05	3.09
IDEQ	3-May-94	160.83	5	4.3	5.08	1.61	1.46	0.86	-0.66	-0.11
IDEQ	20-May-94	167.55	63	56.8	5.12	4.14	4.04	0.93	5.53	4.97
IDEQ	8-Jun-94	76.11	9	3.7	4.33	2.20	1.30	-0.06	-0.23	-0.18
IDEQ	24-Jun-94	41.99	7	1.6	3.74	1.95	0.46	-0.43	-0.45	-0.38
IDEQ	23-Jul-94	24.81	11	1.5	3.21	2.40	0.38	-0.62	-0.02	-0.39
IDEQ	16-Aug-94	20.06	14	1.5	3.00	2.64	0.41	-0.67	0.30	-0.39
IDEQ	16-Aug-94	17.17	14	1.3	2.84	2.64	0.26	-0.70	0.30	-0.41
IDEQ	9-Sep-94	19.68	6	0.6	2.98	1.79	-0.45	-0.68	-0.56	-0.47
IDEQ	5-Oct-94	17.54	6	0.6	2.86	1.79	-0.57	-0.70	-0.56	-0.48
IDEQ	15-Nov-94	20.45	7	0.8	3.02	1.95	-0.26	-0.67	-0.45	-0.46
IDEQ	14-Dec-94	20.06	7	0.8	3.00	1.95	-0.28	-0.67	-0.45	-0.46
IDEQ	11-Jan-95	76.11	12	4.9	4.33	2.48	1.59	-0.06	0.09	-0.06
IDEQ	10-Feb-95	76.11	7	2.9	4.33	1.95	1.05	-0.06	-0.45	-0.26
IDEQ	8-Mar-95	71.68	6	2.3	4.27	1.79	0.84	-0.11	-0.56	-0.31
IDEQ	22-Mar-95	91.17	5	2.5	4.51	1.61	0.90	0.10	-0.66	-0.30
IDEQ	12-Apr-95	89.35	7	3.4	4.49	1.95	1.21	0.08	-0.45	-0.21
IDEQ	25-Apr-95	87.57	7	3.3	4.47	1.95	1.19	0.06	-0.45	-0.21
IDEQ	8-May-95	181.86	18	17.6	5.20	2.89	2.87	1.09	0.73	1.17
IDEQ	23-May-95	205.73	10	11.1	5.33	2.30	2.40	1.34	-0.13	0.54
IDEQ	13-Jun-95	107.11	6	3.5	4.67	1.79	1.24	0.27	-0.56	-0.20
IDEQ	28-Jun-95	57.59	6	1.9	4.05	1.79	0.62	-0.26	-0.56	-0.35
IDEQ	12-Jul-95	34.52	8	1.5	3.54	2.08	0.40	-0.52	-0.34	-0.39
IDEQ	26-Jul-95	24.33	6	0.8	3.19	1.79	-0.24	-0.63	-0.56	-0.46
IDEQ	15-Aug-95	25.29	16	2.2	3.23	2.77	0.78	-0.62	0.51	-0.32
IDEQ	14-Sep-95	157.58	8	6.8	5.06	2.08	1.91	0.82	-0.34	0.12
URS	8-Nov-97	42.2	8.4	1.9	3.74	2.13	0.65	-0.43	-0.30	-0.35
URS	10-May-98	432	5.8	13.5	6.07	1.76	2.60	3.80	-0.58	0.77

tPb

Concentration over time analysis

	tPb	SF220		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.094**	**-0.00036**
	Time	**Ln[COC]**	**[COC]**		
first:	15-May-91	2.69	15		
mid:	16-Aug-94	2.27	10		
last:	10-May-98	1.78	6		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	10-May-98	0.00	1		

Load over time analysis

	tPb	SF220			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.005**	**0.00017**
	Time	**LnLoad**	**Load**		
first:	15-May-91	0.73	2		
mid:	16-Aug-94	0.94	3		
last:	10-May-98	1.17	3		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	10-May-98	0.00	1		

	max r2: 0.159			max r2: 0.313		
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.094	-0.00036	14.66	0.005	0.00017	-4.99
	0.159	-0.00052	20.32	0.036	0.00052	-17.13
	0.088	-0.00042	16.67	0.053	0.00072	-24.00
	0.098	-0.00045	17.71	0.043	0.00065	-21.69
	0.081	-0.00040	16.18	0.041	0.00065	-21.55
	0.084	-0.00042	16.72	0.032	0.00058	-19.04
	0.088	-0.00044	17.33	0.023	0.00048	-15.72
	0.085	-0.00043	17.26	0.018	0.00043	-13.91
	0.082	-0.00043	17.18	0.013	0.00037	-11.93
	0.073	-0.00041	16.47	0.009	0.00031	-9.71
	0.063	-0.00039	15.65	0.005	0.00023	-6.92
	0.065	-0.00040	16.14	0.004	0.00021	-6.21
	0.068	-0.00042	16.65	0.003	0.00018	-5.17
	0.066	-0.00042	16.77	0.007	0.00029	-8.90
	0.044	-0.00033	13.75	0.035	0.00060	-20.05
	0.069	-0.00042	16.63	0.044	0.00069	-23.02
	0.029	-0.00018	8.34	0.164	0.00111	-37.96
	0.026	-0.00017	8.15	0.191	0.00122	-41.78
	0.034	-0.00020	9.13	0.185	0.00123	-41.91
	0.024	-0.00017	7.99	0.176	0.00122	-41.52
	0.009	-0.00010	5.52	0.167	0.00120	-41.09
	0.000	-0.00002	2.56	0.153	0.00116	-39.73
	0.003	-0.00005	3.90	0.121	0.00101	-34.11
	0.009	-0.00010	5.40	0.087	0.00080	-27.00
	0.012	-0.00012	6.13	0.059	0.00063	-20.93
	0.017	-0.00014	6.92	0.033	0.00044	-14.05
	0.006	-0.00008	4.88	0.043	0.00051	-16.48
	0.009	-0.00010	5.49	0.040	0.00050	-16.18
	0.018	-0.00014	6.97	0.033	0.00045	-14.65
	0.048	-0.00022	9.73	0.027	0.00041	-13.14
	0.063	-0.00025	10.97	0.026	0.00041	-13.17
	0.084	-0.00029	12.46	0.024	0.00041	-13.05
	0.041	-0.00016	7.67	0.101	0.00074	-24.68
	0.021	-0.00011	6.04	0.260	0.00106	-36.17
	0.054	-0.00018	8.42	0.313	0.00119	-41.00
	0.132	-0.00028	11.92	0.296	0.00120	-41.17
	0.158	-0.00032	13.56	0.245	0.00111	-38.00

update for EV, CV:

tPb		**SF220**		
LN Analysis		**tPb**		
Load		**Load Data, EV=5.5 lbs/day CV=1.88**		
Avg:	**6**	**Load Data-based LN**		
SD:	**10**	u	ln tPb Load	tPb Load
CV:	**1.88**	3	4.6	103
Min:	**0.6**	0	0.95	3
Max:	**57**	-3	-2.74	0.1
Median:	**2**			
		6	5.5	
		1.88	1.88	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.92, EV=4.96lbs/day CV=1.65; max r2=0.99**

r2 u,lnLoad:	0.920	u	lnLoad	Load		
slope, m:	0.873	3	4.38	80		
intercept, b:	-0.825	0	0.95	3		
N: 41		-3	-2.49	0.1		
E[Load]:	5.0	Parameter Estimates			0.920	0.92
SD[Load]:	8	from LN regression			5.0	4.96
CV[Load]:	1.65	update graph label			1.6	1.65

	tPb	N: 41				max r2 0.987
	Load	i	i-3/8 / N+1/4	u	Ln	r2
Date	**lbs/day Ranked**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
update and rank for new data						
5-Oct-94	**0.6**	1	0.0152	-2.166	-0.569	0.920
9-Sep-94	**0.6**	2	0.0394	-1.758	-0.454	0.931
14-Dec-94	**0.8**	3	0.0636	-1.525	-0.280	0.936
15-Nov-94	**0.8**	4	0.0879	-1.354	-0.261	0.942
26-Jul-95	**0.8**	5	0.1121	-1.215	-0.242	0.945
20-Dec-93	**0.8**	6	0.1364	-1.097	-0.228	0.946
26-Oct-93	**0.9**	7	0.1606	-0.992	-0.089	0.946
20-Dec-93	**0.9**	8	0.1848	-0.897	-0.087	0.946
15-Feb-94	**1.2**	9	0.2091	-0.810	0.216	0.945
16-Aug-94	**1.3**	10	0.2333	-0.728	0.257	0.949
15-Feb-94	**1.3**	11	0.2576	-0.651	0.281	0.954
19-Jan-94	**1.3**	12	0.2818	-0.577	0.287	0.958
19-Jan-94	**1.4**	13	0.3061	-0.507	0.309	0.961
23-Jul-94	**1.5**	14	0.3303	-0.439	0.384	0.963
12-Jul-95	**1.5**	15	0.3545	-0.373	0.396	0.966
16-Aug-94	**1.5**	16	0.3788	-0.309	0.413	0.967
24-Jun-94	**1.6**	17	0.4030	-0.246	0.458	0.968
28-Jun-95	**1.9**	18	0.4273	-0.183	0.620	0.968
30-Nov-93	**1.9**	19	0.4515	-0.122	0.645	0.972
8-Nov-97	**1.9**	20	0.4758	-0.061	0.646	0.974
23-Mar-94	**2.2**	21	0.5000	0.000	0.769	0.975
15-Aug-95	**2.2**	22	0.5242	0.061	0.778	0.979
7-Mar-94	**2.3**	23	0.5485	0.122	0.828	0.981
8-Mar-95	**2.3**	24	0.5727	0.183	0.839	0.982
22-Mar-95	**2.5**	25	0.5970	0.246	0.897	0.982
10-Feb-95	**2.9**	26	0.6212	0.309	1.053	0.982
4-Oct-91	**3.0**	27	0.6455	0.373	1.106	0.984
25-Apr-95	**3.3**	28	0.6697	0.439	1.193	0.985
12-Apr-95	**3.4**	29	0.6939	0.507	1.213	0.987
13-Jun-95	**3.5**	30	0.7182	0.577	1.241	0.986
8-Jun-94	**3.7**	31	0.7424	0.651	1.304	0.984
3-May-94	**4.3**	32	0.7667	0.728	1.465	0.982
11-Jan-95	**4.9**	33	0.7909	0.810	1.592	0.979
14-Sep-95	**6.8**	34	0.8152	0.897	1.914	0.976
6-Apr-94	**7.2**	35	0.8394	0.992	1.974	0.971
15-May-91	**10.4**	36	0.8636	1.097	2.342	0.963
23-May-95	**11.1**	37	0.8879	1.215	2.404	0.961
10-May-98	**13.5**	38	0.9121	1.354	2.601	
8-May-95	**17.6**	39	0.9364	1.525	2.869	
18-Apr-94	**37.5**	40	0.9606	1.758	3.623	
20-May-94	**56.8**	41	0.9848	2.166	4.039	

		update for EV, CV:			
tPb		SF220		11	11.2
LN Analysis		tPb		0.84	0.836
Concentration		Conc. Data, EV=11.2 ug/L CV=0.836			
Avg:	11	Data-based LN			
SD:	9	u	ln[tPb]	[tPb]	
CV:	0.84	3	4.3	76	
Min:	5	0	2.15	9	
Max:	63	-3	-0.03	1	
Median:	9				

					0.869	0.869
u=mLn(Conc.)+b:					11.1	11.1
update for r2, EV, CV:	r2=0.869, EV=11.1 ug/L CV=0.593; max r2=0.92				0.593	0.593
	r2 u,lnConc:	0.869	u	lnConc.	Conc.	
	slope, m:	1.821	3	3.90	49	
	intercept, b:	-4.103	0	2.25	10	
	N: 41		-3	0.61	2	
	E[Conc]:	11.1	Parameter Estimates			
	SD[Conc]:	7	from LN regression			
	CV[Conc]:	0.59	update graph label			

	tPb	N: 41				max r2 0.919
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
3-May-94	5	1	0.0152	-2.166	1.609	0.869
22-Mar-95	5	2	0.0394	-1.758	1.609	0.882
10-May-98	5.8	3	0.0636	-1.525	1.758	0.884
9-Sep-94	6	4	0.0879	-1.354	1.792	0.892
5-Oct-94	6	5	0.1121	-1.215	1.792	0.901
8-Mar-95	6	6	0.1364	-1.097	1.792	0.906
13-Jun-95	6	7	0.1606	-0.992	1.792	0.909
28-Jun-95	6	8	0.1848	-0.897	1.792	0.910
26-Jul-95	6	9	0.2091	-0.810	1.792	0.909
15-May-91	7	10	0.2333	-0.728	1.946	0.907
24-Jun-94	7	11	0.2576	-0.651	1.946	0.912
15-Nov-94	7	12	0.2818	-0.577	1.946	0.916
14-Dec-94	7	13	0.3061	-0.507	1.946	0.918
10-Feb-95	7	14	0.3303	-0.439	1.946	0.919
12-Apr-95	7	15	0.3545	-0.373	1.946	0.918
25-Apr-95	7	16	0.3788	-0.309	1.946	0.916
26-Oct-93	8	17	0.4030	-0.246	2.079	0.911
12-Jul-95	8	18	0.4273	-0.183	2.079	0.913
14-Sep-95	8	19	0.4515	-0.122	2.079	0.914
8-Nov-97	8.4	20	0.4758	-0.061	2.128	0.912
20-Dec-93	9	21	0.5000	0.000	2.197	0.912
20-Dec-93	9	22	0.5242	0.061	2.197	0.916
7-Mar-94	9	23	0.5485	0.122	2.197	0.918
23-Mar-94	9	24	0.5727	0.183	2.197	0.918
8-Jun-94	9	25	0.5970	0.246	2.197	0.916
6-Apr-94	10	26	0.6212	0.309	2.303	0.910
23-May-95	10	27	0.6455	0.373	2.303	0.910
19-Jan-94	11	28	0.6697	0.439	2.398	0.906
19-Jan-94	11	29	0.6939	0.507	2.398	0.910
23-Jul-94	11	30	0.7182	0.577	2.398	0.909
11-Jan-95	12	31	0.7424	0.651	2.485	0.903
15-Feb-94	13	32	0.7667	0.728	2.565	0.902
15-Feb-94	13	33	0.7909	0.810	2.565	0.909
16-Aug-94	14	34	0.8152	0.897	2.639	0.909
16-Aug-94	14	35	0.8394	0.992	2.639	0.915
15-Aug-95	16	36	0.8636	1.097	2.773	0.906
30-Nov-93	18	37	0.8879	1.215	2.890	0.913
8-May-95	18	38	0.9121	1.354	2.890	
18-Apr-94	21	39	0.9364	1.525	3.045	
4-Oct-91	26	40	0.9606	1.758	3.258	
20-May-94	63	41	0.9848	2.166	4.143	

update for EV, CV:

tPb		**SF220**			82	82
LN Analysis		**tPb**			1.12	1.12
Discharge, Q		**Q Data, EV=82 cfs CV=1.12**				
Avg:	**82**	**Q Data-based LN**				
SD:	**92**	u	lnQ	Q		
CV:	**1.12**	3	6.7	819		
Min:	**16**	0	4.00	54		
Max:	**432**	-3	1.29	4		
Median:	**42**					
					0.907	0.907
					85.8	85.8
	u=mLn(Q)+b:				1.39	1.39

update for r2, EV, CV: **r2=0.907, EV=85.8 cfs CV=1.39; max r2=0.98**

r2 u,lnQ:	0.907	u	lnQ	Q
slope, m:	0.966	3	7.02	1121
intercept, b:	-3.784	0	3.92	50
N:	41	-3	0.81	2
E[Q]:	85.8	Parameter Estimates		
SD[Q]:	119	from LN regression		
CV[Q]:	1.39	update graph label		

N: 41 — max r2 = 0.979

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
20-Dec-93	16.45	1	0.0152	-2.166	2.800	0.907
16-Aug-94	17.17	2	0.0394	-1.758	2.843	0.931
5-Oct-94	17.54	3	0.0636	-1.525	2.864	0.945
15-Feb-94	17.75	4	0.0879	-1.354	2.876	0.955
20-Dec-93	18.94	5	0.1121	-1.215	2.941	0.961
15-Feb-94	18.94	6	0.1364	-1.097	2.941	0.967
30-Nov-93	19.68	7	0.1606	-0.992	2.980	0.971
9-Sep-94	19.68	8	0.1848	-0.897	2.980	0.975
16-Aug-94	20.06	9	0.2091	-0.810	2.999	0.976
14-Dec-94	20.06	10	0.2333	-0.728	2.999	0.977
15-Nov-94	20.45	11	0.2576	-0.651	3.018	0.976
26-Oct-93	21.26	12	0.2818	-0.577	3.057	0.975
4-Oct-91	21.6	13	0.3061	-0.507	3.073	0.973
19-Jan-94	22.52	14	0.3303	-0.439	3.114	0.971
19-Jan-94	23.01	15	0.3545	-0.373	3.136	0.969
26-Jul-95	24.33	16	0.3788	-0.309	3.192	0.967
23-Jul-94	24.81	17	0.4030	-0.246	3.211	0.966
15-Aug-95	25.29	18	0.4273	-0.183	3.230	0.968
12-Jul-95	34.52	19	0.4515	-0.122	3.542	0.977
24-Jun-94	41.99	20	0.4758	-0.061	3.737	0.977
8-Nov-97	42.2	21	0.5000	0.000	3.742	0.975
23-Mar-94	44.55	22	0.5242	0.061	3.797	0.974
7-Mar-94	47.26	23	0.5485	0.122	3.856	0.975
28-Jun-95	57.59	24	0.5727	0.183	4.053	0.979
8-Mar-95	71.68	25	0.5970	0.246	4.272	0.978
8-Jun-94	76.11	26	0.6212	0.309	4.332	0.977
11-Jan-95	76.11	27	0.6455	0.373	4.332	0.975
10-Feb-95	76.11	28	0.6697	0.439	4.332	0.972
25-Apr-95	87.57	29	0.6939	0.507	4.472	0.970
12-Apr-95	89.35	30	0.7182	0.577	4.493	0.965
22-Mar-95	91.17	31	0.7424	0.651	4.513	0.962
13-Jun-95	107.11	32	0.7667	0.728	4.674	0.971
6-Apr-94	133.87	33	0.7909	0.810	4.897	0.978
14-Sep-95	157.58	34	0.8152	0.897	5.060	0.973
3-May-94	160.83	35	0.8394	0.992	5.080	0.977
20-May-94	167.55	36	0.8636	1.097	5.121	0.973
8-May-95	181.86	37	0.8879	1.215	5.203	0.963
23-May-95	205.73	38	0.9121	1.354	5.327	
15-May-91	276.3	39	0.9364	1.525	5.621	
18-Apr-94	331.49	40	0.9606	1.758	5.804	
10-May-98	432	41	0.9848	2.166	6.068	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	**SF220**	**Date:**	**13-Jun-00**
Chemical:	**tZn**	**Analyst:**	**J.MacLachlan**
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	34,604	82	132	39	0.00	0.00	0.00
SD:	424	92	54	28	1.00	1.00	1.00
CV:	0.01	1.12	0.41	0.72			
Min:	33,373	16	39	15.1	-0.71	-1.72	-0.86
Max:	35,925	432	218	139	3.80	1.59	3.52
Median:	34,562	42	135	24	-0.43	0.06	-0.54

tZn	SF220		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.49)		update r2	**0.49**	0.49	r2:	0.049	0.056
r2 Q,[COC]:	0.49	[tZn]	Q		m:	0.0483	0.00053
slope, m:	-0.4	159	16.5		b:	-1589	-14.43
intercept, b:	165.6	132	82.0				
N: 41		-12	432				
LnConc. = mLn(Q)+b (r2=0.711)		update r2		0.71	0.711		
r2 lnQ,ln[COC]:	0.71	ln[tZn]	ln Q	[tZn]	Q		
slope, m:	-0.42	5.25	2.80	191	16		
intercept, b:	6.44	4.57	4.41	97	82		
N: 41		3.87	6.07	48	432		

N= 41

								tZn	for graph 0	
	Sampling Date	Q Discharge	tZn Concentration	tZn Load	Ln Q	Ln tZn Conc.	Ln tZn Load	SF220 Standardized Values = (x - Avg)/SD		
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	276.3	51	75.8	5.62	3.93	4.33	2.11	-1.50	1.29
MFG	4-Oct-91	21.6	207	24.1	3.07	5.33	3.18	-0.66	1.39	-0.54
IDEQ	26-Oct-93	21.26	176	20.1	3.06	5.17	3.00	-0.66	0.81	-0.68
IDEQ	30-Nov-93	19.68	174	18.4	2.98	5.16	2.91	-0.68	0.78	-0.74
IDEQ	20-Dec-93	18.94	207	21.1	2.94	5.33	3.05	-0.68	1.39	-0.65
IDEQ	20-Dec-93	16.45	207	18.3	2.80	5.33	2.91	-0.71	1.39	-0.75
IDEQ	19-Jan-94	22.52	172	20.8	3.11	5.15	3.04	-0.65	0.74	-0.66
IDEQ	19-Jan-94	23.01	172	21.3	3.14	5.15	3.06	-0.64	0.74	-0.64
IDEQ	15-Feb-94	18.94	187	19.1	2.94	5.23	2.95	-0.68	1.02	-0.72
IDEQ	15-Feb-94	17.75	187	17.9	2.88	5.23	2.88	-0.70	1.02	-0.76
IDEQ	7-Mar-94	47.26	118	30.0	3.86	4.77	3.40	-0.38	-0.26	-0.33
IDEQ	23-Mar-94	44.55	135	32.4	3.80	4.91	3.48	-0.41	0.06	-0.25
IDEQ	6-Apr-94	133.87	81	58.3	4.90	4.39	4.07	0.56	-0.94	0.67
IDEQ	18-Apr-94	331.49	46	82.0	5.80	3.83	4.41	2.71	-1.59	1.51
IDEQ	3-May-94	160.83	58	50.2	5.08	4.06	3.92	0.86	-1.37	0.38
IDEQ	20-May-94	167.55	57	51.4	5.12	4.04	3.94	0.93	-1.39	0.42
IDEQ	8-Jun-94	76.11	66	27.0	4.33	4.19	3.30	-0.06	-1.22	-0.44
IDEQ	24-Jun-94	41.99	94	21.2	3.74	4.54	3.06	-0.43	-0.70	-0.64
IDEQ	23-Jul-94	24.81	146	19.5	3.21	4.98	2.97	-0.62	0.26	-0.70
IDEQ	16-Aug-94	20.06	175	18.9	3.00	5.16	2.94	-0.67	0.80	-0.73
IDEQ	16-Aug-94	17.17	175	16.2	2.84	5.16	2.78	-0.70	0.80	-0.82
IDEQ	9-Sep-94	19.68	158	16.7	2.98	5.06	2.82	-0.68	0.48	-0.80
IDEQ	5-Oct-94	17.54	201	19.0	2.86	5.30	2.94	-0.70	1.28	-0.72
IDEQ	15-Nov-94	20.45	192	21.1	3.02	5.26	3.05	-0.67	1.11	-0.65
IDEQ	14-Dec-94	20.06	218	23.5	3.00	5.38	3.16	-0.67	1.59	-0.56
IDEQ	11-Jan-95	76.11	122	50.0	4.33	4.80	3.91	-0.06	-0.18	0.37
IDEQ	10-Feb-95	76.11	114	46.7	4.33	4.74	3.84	-0.06	-0.33	0.26
IDEQ	8-Mar-95	71.68	118	45.5	4.27	4.77	3.82	-0.11	-0.26	0.21
IDEQ	22-Mar-95	91.17	214	105.0	4.51	5.37	4.65	0.10	1.52	2.32
IDEQ	12-Apr-95	89.35	113	54.3	4.49	4.73	3.99	0.08	-0.35	0.53
IDEQ	25-Apr-95	87.57	80	37.7	4.47	4.38	3.63	0.06	-0.96	-0.06
IDEQ	8-May-95	181.86	85	83.2	5.20	4.44	4.42	1.09	-0.87	1.55
IDEQ	23-May-95	205.73	67	74.2	5.33	4.20	4.31	1.34	-1.20	1.23
IDEQ	13-Jun-95	107.11	70	40.3	4.67	4.25	3.70	0.27	-1.15	0.03
IDEQ	28-Jun-95	57.59	72	22.3	4.05	4.28	3.10	-0.26	-1.11	-0.61
IDEQ	12-Jul-95	34.52	93	17.3	3.54	4.53	2.85	-0.52	-0.72	-0.78
IDEQ	26-Jul-95	24.33	115	15.1	3.19	4.74	2.71	-0.63	-0.31	-0.86
IDEQ	15-Aug-95	25.29	138	18.8	3.23	4.93	2.93	-0.62	0.11	-0.73
IDEQ	14-Sep-95	157.58	164	139.0	5.06	5.10	4.93	0.82	0.59	3.52
URS	8-Nov-97	42.2	146	33.1	3.74	4.98	3.50	-0.43	0.26	-0.22
URS	10-May-98	432	38.8	90.2	6.07	3.66	4.50	3.80	-1.72	1.79

tZn

Concentration over time analysis

				r2	Slope, m
	tZn	SF220		Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.039	-0.00022
	Time	Ln[COC]	[COC]		
first:	15-May-91	5.05	157		
mid:	16-Aug-94	4.79	120		
last:	10-May-98	4.49	89		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	10-May-98	0.00	1		

Load over time analysis

	tZn	SF220		Load over time	
	LnLoad=mTime+b All data r2, m:			0.046	0.00031
	Time	LnLoad	Load		
first:	15-May-91	3.09	22		
mid:	16-Aug-94	3.46	32		
last:	10-May-98	3.88	48		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	10-May-98	0.00	1		

max r2: 0.427

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.039	-0.00022	12.50
0.146	-0.00047	20.98
0.117	-0.00046	20.90
0.106	-0.00045	20.26
0.095	-0.00043	19.57
0.080	-0.00039	18.27
0.064	-0.00035	16.79
0.054	-0.00032	15.83
0.044	-0.00029	14.73
0.032	-0.00025	13.25
0.021	-0.00020	11.56
0.020	-0.00020	11.46
0.016	-0.00018	10.81
0.022	-0.00022	12.16
0.056	-0.00033	16.04
0.097	-0.00042	19.36
0.162	-0.00053	23.11
0.235	-0.00063	26.57
0.275	-0.00069	28.72
0.268	-0.00069	28.84
0.249	-0.00067	27.99
0.227	-0.00064	26.98
0.209	-0.00062	26.32
0.178	-0.00056	24.12
0.149	-0.00049	21.92
0.116	-0.00040	18.73
0.107	-0.00039	18.28
0.101	-0.00039	18.09
0.092	-0.00037	17.63
0.060	-0.00026	13.72
0.049	-0.00024	12.85
0.061	-0.00027	13.97
0.070	-0.00030	14.93
0.119	-0.00038	18.05
0.194	-0.00049	21.80
0.325	-0.00063	26.97
0.427	-0.00077	31.77

max r2: 0.211

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.046	0.00031	-7.15
0.134	0.00058	-16.47
0.143	0.00067	-19.77
0.132	0.00065	-19.15
0.120	0.00062	-18.16
0.111	0.00061	-17.49
0.097	0.00057	-16.26
0.087	0.00054	-15.35
0.077	0.00052	-14.38
0.065	0.00047	-12.93
0.051	0.00042	-11.02
0.048	0.00042	-10.89
0.047	0.00042	-11.01
0.064	0.00049	-13.52
0.101	0.00061	-17.75
0.123	0.00068	-20.29
0.151	0.00077	-23.19
0.147	0.00077	-23.36
0.133	0.00074	-22.32
0.116	0.00070	-20.67
0.097	0.00064	-18.62
0.073	0.00054	-15.31
0.050	0.00044	-11.70
0.031	0.00034	-8.28
0.018	0.00025	-5.15
0.008	0.00017	-2.25
0.010	0.00020	-3.07
0.011	0.00021	-3.58
0.012	0.00022	-3.99
0.037	0.00037	-9.16
0.049	0.00043	-11.28
0.048	0.00043	-11.55
0.097	0.00060	-17.42
0.178	0.00079	-24.16
0.211	0.00088	-27.62
0.183	0.00084	-26.12
0.118	0.00067	-19.80

update for EV, CV:

tZn		**SF220**		
LN Analysis		**tZn**		
Load		**Load Data, EV=39.4 lbs/day CV=0.718**		
Avg:	**39**	**Load Data-based LN**		
SD:	**28**	u	ln tZn Load	tZn Load
CV:	**0.72**	3	5.4	221
Min:	**15.1**	0	3.47	32
Max:	**139**	-3	1.53	4.6
Median:	**24**			
		39	39.4	
		0.72	0.718	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.9, EV=40.1lbs/day CV=0.74; max r2=0.98**

r2 u,lnLoad:	0.900	u	lnLoad	Load	
slope, m:	1.512	3	5.46	234	
intercept, b:	-5.251	0	3.47	32	
N:	41	-3	1.49	4.4	
E[Load]:	40.1	Parameter Estimates			0.900 0.9
SD[Load]:	30	from LN regression			40.1 40.1
CV[Load]:	0.74	update graph label			0.7 0.74

						max r2
	tZn	N: 41				0.976
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
26-Jul-95	**15.1**	1	0.0152	-2.166	2.712	0.900
16-Aug-94	**16.2**	2	0.0394	-1.758	2.783	0.918
9-Sep-94	**16.7**	3	0.0636	-1.525	2.817	0.931
12-Jul-95	**17.3**	4	0.0879	-1.354	2.849	0.940
15-Feb-94	**17.9**	5	0.1121	-1.215	2.882	0.948
20-Dec-93	**18.3**	6	0.1364	-1.097	2.908	0.955
30-Nov-93	**18.4**	7	0.1606	-0.992	2.914	0.961
15-Aug-95	**18.8**	8	0.1848	-0.897	2.933	0.966
16-Aug-94	**18.9**	9	0.2091	-0.810	2.938	0.970
5-Oct-94	**19.0**	10	0.2333	-0.728	2.943	0.973
15-Feb-94	**19.1**	11	0.2576	-0.651	2.947	0.974
23-Jul-94	**19.5**	12	0.2818	-0.577	2.970	0.975
26-Oct-93	**20.1**	13	0.3061	-0.507	3.002	0.974
19-Jan-94	**20.8**	14	0.3303	-0.439	3.037	0.974
20-Dec-93	**21.1**	15	0.3545	-0.373	3.049	0.973
15-Nov-94	**21.1**	16	0.3788	-0.309	3.050	0.971
24-Jun-94	**21.2**	17	0.4030	-0.246	3.056	0.969
19-Jan-94	**21.3**	18	0.4273	-0.183	3.058	0.966
28-Jun-95	**22.3**	19	0.4515	-0.122	3.105	0.965
14-Dec-94	**23.5**	20	0.4758	-0.061	3.158	0.964
4-Oct-91	**24.1**	21	0.5000	0.000	3.180	0.964
8-Jun-94	**27.0**	22	0.5242	0.061	3.297	0.968
7-Mar-94	**30.0**	23	0.5485	0.122	3.401	0.970
23-Mar-94	**32.4**	24	0.5727	0.183	3.477	0.971
8-Nov-97	**33.1**	25	0.5970	0.246	3.501	0.970
25-Apr-95	**37.7**	26	0.6212	0.309	3.629	0.974
13-Jun-95	**40.3**	27	0.6455	0.373	3.697	0.973
8-Mar-95	**45.5**	28	0.6697	0.439	3.818	0.971
10-Feb-95	**46.7**	29	0.6939	0.507	3.843	0.968
11-Jan-95	**50.0**	30	0.7182	0.577	3.911	0.963
3-May-94	**50.2**	31	0.7424	0.651	3.916	0.957
20-May-94	**51.4**	32	0.7667	0.728	3.939	0.950
12-Apr-95	**54.3**	33	0.7909	0.810	3.995	0.946
6-Apr-94	**58.3**	34	0.8152	0.897	4.066	0.948
23-May-95	**74.2**	35	0.8394	0.992	4.306	0.972
15-May-91	**75.8**	36	0.8636	1.097	4.328	0.976
18-Apr-94	**82.0**	37	0.8879	1.215	4.407	0.974
8-May-95	**83.2**	38	0.9121	1.354	4.421	
10-May-98	**90.2**	39	0.9364	1.525	4.502	
22-Mar-95	**105.0**	40	0.9606	1.758	4.654	
14-Sep-95	**139.0**	41	0.9848	2.166	4.935	

update for EV, CV:

tZn		**SF220**	132	132
LN Analysis		**tZn**	0.41	0.41

Concentration

Conc. Data, EV=132 ug/L CV=0.41

Avg:	132
SD:	54
CV:	0.41
Min:	39
Max:	218
Median:	135

Data-based LN

u	ln[tZn]	[tZn]
3	6.0	398
0	4.80	122
-3	3.62	37

			0.928	0.928
u=mLn{Conc.}+b:			135.9	136
update for r2, EV, CV:	**r2=0.928, EV=136 ug/L CV=0.55; max r2=0.93**		0.550	0.55
r2 u,lnConc:	0.928	u	lnConc.	Conc.
slope, m:	1.945	3	6.32	557
intercept, b:	-9.295	0	4.78	119
N:	41	-3	3.24	25
E[Conc]:	135.9	Parameter Estimates		
SD[Conc]:	75	from LN regression		
CV[Conc]:	0.55	update graph label		

	tZn	N: 41				max r2 0.928
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L Ranked**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
update and rank for new data						
10-May-98	38.8	1	0.0152	-2.166	3.658	0.928
18-Apr-94	46	2	0.0394	-1.758	3.829	0.918
15-May-91	51	3	0.0636	-1.525	3.932	0.909
20-May-94	57	4	0.0879	-1.354	4.043	0.901
3-May-94	58	5	0.1121	-1.215	4.060	0.893
8-Jun-94	66	6	0.1364	-1.097	4.190	0.886
23-May-95	67	7	0.1606	-0.992	4.205	0.878
13-Jun-95	70	8	0.1848	-0.897	4.248	0.871
28-Jun-95	72	9	0.2091	-0.810	4.277	0.865
25-Apr-95	80	10	0.2333	-0.728	4.382	0.862
6-Apr-94	81	11	0.2576	-0.651	4.394	0.856
8-May-95	85	12	0.2818	-0.577	4.443	0.856
12-Jul-95	93	13	0.3061	-0.507	4.533	0.858
24-Jun-94	94	14	0.3303	-0.439	4.543	0.857
12-Apr-95	113	15	0.3545	-0.373	4.727	0.866
10-Feb-95	114	16	0.3788	-0.309	4.736	0.856
26-Jul-95	115	17	0.4030	-0.246	4.745	0.846
7-Mar-94	118	18	0.4273	-0.183	4.771	0.839
8-Mar-95	118	19	0.4515	-0.122	4.771	0.834
11-Jan-95	122	20	0.4758	-0.061	4.804	0.842
23-Mar-94	135	21	0.5000	0.000	4.905	0.865
15-Aug-95	138	22	0.5242	0.061	4.927	0.866
23-Jul-94	146	23	0.5485	0.122	4.984	0.877
8-Nov-97	146	24	0.5727	0.183	4.984	0.879
9-Sep-94	158	25	0.5970	0.246	5.063	0.910
14-Sep-95	164	26	0.6212	0.309	5.100	0.911
19-Jan-94	172	27	0.6455	0.373	5.147	0.905
19-Jan-94	172	28	0.6697	0.439	5.147	0.894
30-Nov-93	174	29	0.6939	0.507	5.159	0.879
16-Aug-94	175	30	0.7182	0.577	5.165	0.861
16-Aug-94	175	31	0.7424	0.651	5.165	0.839
26-Oct-93	176	32	0.7667	0.728	5.170	0.822
15-Feb-94	187	33	0.7909	0.810	5.231	0.843
15-Feb-94	187	34	0.8152	0.897	5.231	0.811
15-Nov-94	192	35	0.8394	0.992	5.257	0.816
5-Oct-94	201	36	0.8636	1.097	5.303	0.907
4-Oct-91	207	37	0.8879	1.215	5.333	0.896
20-Dec-93	207	38	0.9121	1.354	5.333	
20-Dec-93	207	39	0.9364	1.525	5.333	
22-Mar-95	214	40	0.9606	1.758	5.366	
14-Dec-94	218	41	0.9848	2.166	5.384	

update for EV, CV:

tZn		**SF220**			82	82
LN Analysis		**tZn**			1.12	1.12
Discharge, Q		**Q Data, EV=82 cfs CV=1.12**				
Avg:	**82**	**Q Data-based LN**				
SD:	**92**	**u**	**lnQ**	**Q**		
CV:	**1.12**	3	6.7	819		
Min:	**16**	0	4.00	54		
Max:	**432**	-3	1.29	4		
Median:	**42**					
					0.907	0.907
					85.8	85.8
	u=mLn(Q)+b:				1.39	1.39

update for r2, EV, CV: **r2=0.907, EV=85.8 cfs CV=1.39; max r2=0.98**

r2 u,lnQ:	0.907	u	lnQ	Q
slope, m:	0.966	3	7.02	1121
intercept, b:	-3.784	0	3.92	50
N:	41	-3	0.81	2
E[Q]:	85.8	Parameter Estimates		
SD[Q]:	119	from LN regression		
CV[Q]:	1.39	update graph label		

N: 41

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 = 0.979 r2 forward
update and rank for new data						
20-Dec-93	16.45	1	0.0152	-2.166	2.800	0.907
16-Aug-94	17.17	2	0.0394	-1.758	2.843	0.931
5-Oct-94	17.54	3	0.0636	-1.525	2.864	0.945
15-Feb-94	17.75	4	0.0879	-1.354	2.876	0.955
20-Dec-93	18.94	5	0.1121	-1.215	2.941	0.961
15-Feb-94	18.94	6	0.1364	-1.097	2.941	0.967
30-Nov-93	19.68	7	0.1606	-0.992	2.980	0.971
9-Sep-94	19.68	8	0.1848	-0.897	2.980	0.975
16-Aug-94	20.06	9	0.2091	-0.810	2.999	0.976
14-Dec-94	20.06	10	0.2333	-0.728	2.999	0.977
15-Nov-94	20.45	11	0.2576	-0.651	3.018	0.976
26-Oct-93	21.26	12	0.2818	-0.577	3.057	0.975
4-Oct-91	21.6	13	0.3061	-0.507	3.073	0.973
19-Jan-94	22.52	14	0.3303	-0.439	3.114	0.971
19-Jan-94	23.01	15	0.3545	-0.373	3.136	0.969
26-Jul-95	24.33	16	0.3788	-0.309	3.192	0.967
23-Jul-94	24.81	17	0.4030	-0.246	3.211	0.966
15-Aug-95	25.29	18	0.4273	-0.183	3.230	0.968
12-Jul-95	34.52	19	0.4515	-0.122	3.542	0.977
24-Jun-94	41.99	20	0.4758	-0.061	3.737	0.977
8-Nov-97	42.2	21	0.5000	0.000	3.742	0.975
23-Mar-94	44.55	22	0.5242	0.061	3.797	0.974
7-Mar-94	47.26	23	0.5485	0.122	3.856	0.975
28-Jun-95	57.59	24	0.5727	0.183	4.053	0.979
8-Mar-95	71.68	25	0.5970	0.246	4.272	0.978
8-Jun-94	76.11	26	0.6212	0.309	4.332	0.977
11-Jan-95	76.11	27	0.6455	0.373	4.332	0.975
10-Feb-95	76.11	28	0.6697	0.439	4.332	0.972
25-Apr-95	87.57	29	0.6939	0.507	4.472	0.970
12-Apr-95	89.35	30	0.7182	0.577	4.493	0.965
22-Mar-95	91.17	31	0.7424	0.651	4.513	0.962
13-Jun-95	107.11	32	0.7667	0.728	4.674	0.971
6-Apr-94	133.87	33	0.7909	0.810	4.897	0.978
14-Sep-95	157.58	34	0.8152	0.897	5.060	0.973
3-May-94	160.83	35	0.8394	0.992	5.080	0.977
20-May-94	167.55	36	0.8636	1.097	5.121	0.973
8-May-95	181.86	37	0.8879	1.215	5.203	0.963
23-May-95	205.73	38	0.9121	1.354	5.327	
15-May-91	276.3	39	0.9364	1.525	5.621	
18-Apr-94	331.49	40	0.9606	1.758	5.804	
10-May-98	432	41	0.9848	2.166	6.068	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF228	Date:	13-Jun-00
Chemical:	dCd	Analyst:	JMacLachlan
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load					
Avg:	34,853	109	1	1		0.00	0.00	0.00	
SD:	681	152	0	1		1.00	1.00	1.00	
CV:	0.02	1.39	0.44	1.18					first:
Min:	33,374	22	0.3	0.1		-0.57	-1.62	-0.71	mid:
Max:	36,228	859	3	4		4.95	4.35	5.11	last:
Median:	34,696	50	1	0.3		-0.39	-0.23	-0.42	

dCd SF228			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b	
Conc. = mQ+b (r2=0.0742)		update r2	0.07	0.0742	r2:	0.032	0.024	
r2 Q,[COC]:	0.07	[dCd]	Q		m:	0.0396	0.00020	
slope, m:	-0.001	1	22.3		b:	-1271	-2.83	
intercept, b:	1.2	1	108.6					
N: 46		0.4	859					first:
LnConc. = mLn(Q)+b (r2=0.158)		update r2	0.16	0.158				mid:
r2 lnQ,ln[COC]:	0.16	ln[dCd]	ln Q	[dCd]	Q			last:
slope, m:	-0.18	0.17	3.10	1	22			
intercept, b:	0.72	-0.11	4.69	1	109			
N: 46		-0.48	6.76	1	859			

N= 46

	Sampling Date	Q Discharge	dCd Concentration	dCd Load	Ln Q	Ln dCd Conc.	Ln dCd Load	dCd SF228 for graph 0 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	16-May-91	391.6	0.3	0.6	5.97	-1.20	-0.46	1.87	-1.62	0.19
MFG	4-Oct-91	25.2	0.6	0.1	3.23	-0.51	-2.51	-0.55	-0.98	-0.71
IDEQ	26-Oct-93	23.66	1.1	0.1	3.16	0.10	-1.97	-0.56	0.09	-0.62
IDEQ	30-Nov-93	23.09	1	0.1	3.14	0.00	-2.09	-0.56	-0.13	-0.64
IDEQ	20-Dec-93	23.66	1.5	0.2	3.16	0.41	-1.66	-0.56	0.94	-0.53
IDEQ	20-Dec-93	23.3	1.5	0.2	3.15	0.41	-1.67	-0.56	0.94	-0.54
IDEQ	19-Jan-94	29.48	0.9	0.1	3.38	-0.11	-1.95	-0.52	-0.34	-0.61
IDEQ	19-Jan-94	31.84	0.9	0.2	3.46	-0.11	-1.87	-0.51	-0.34	-0.59
IDEQ	15-Feb-94	23.38	0.9	0.1	3.15	-0.11	-2.18	-0.56	-0.34	-0.66
IDEQ	15-Feb-94	22.25	0.9	0.1	3.10	-0.11	-2.23	-0.57	-0.34	-0.67
IDEQ	7-Mar-94	50.34	0.8	0.2	3.92	-0.22	-1.53	-0.38	-0.55	-0.49
IDEQ	23-Mar-94	47.87	1	0.3	3.87	0.00	-1.36	-0.40	-0.13	-0.42
IDEQ	6-Apr-94	103.37	0.8	0.4	4.64	-0.22	-0.81	-0.03	-0.55	-0.11
IDEQ	18-Apr-94	271.47	0.5	0.7	5.60	-0.69	-0.31	1.07	-1.19	0.35
IDEQ	3-May-94	153.69	0.6	0.5	5.03	-0.51	-0.70	0.30	-0.98	-0.03
IDEQ	20-May-94	143.78	0.8	0.6	4.97	-0.22	-0.48	0.23	-0.55	0.17
IDEQ	8-Jun-94	100.71	0.8	0.4	4.61	-0.22	-0.84	-0.05	-0.55	-0.13
IDEQ	24-Jun-94	60.11	0.8	0.3	4.10	-0.22	-1.35	-0.32	-0.55	-0.42
IDEQ	23-Jul-94	41.18	0.9	0.2	3.72	-0.11	-1.61	-0.45	-0.34	-0.52
IDEQ	16-Aug-94	35.03	1.3	0.2	3.56	0.26	-1.41	-0.49	0.51	-0.44
IDEQ	9-Sep-94	34.18	0.9	0.2	3.53	-0.11	-1.80	-0.49	-0.34	-0.57
IDEQ	15-Nov-94	36.36	1.1	0.2	3.59	0.10	-1.54	-0.48	0.09	-0.49
IDEQ	14-Dec-94	39.18	1.7	0.4	3.67	0.53	-1.03	-0.46	1.37	-0.26
IDEQ	11-Jan-95	103.37	1	0.6	4.64	0.00	-0.59	-0.03	-0.13	0.07
IDEQ	10-Feb-95	98.11	0.9	0.5	4.59	-0.11	-0.74	-0.07	-0.34	-0.07
IDEQ	22-Mar-95	168.78	1	0.9	5.13	0.00	-0.10	0.40	-0.13	0.65
IDEQ	12-Apr-95	95.58	1.7	0.9	4.56	0.53	-0.13	-0.09	1.37	0.59
IDEQ	25-Apr-95	108.94	0.8	0.5	4.69	-0.22	-0.76	0.00	-0.55	-0.08
IDEQ	8-May-95	212.3	1.4	1.6	5.36	0.34	0.47	0.68	0.73	1.78
IDEQ	23-May-95	243.28	1.4	1.8	5.49	0.34	0.61	0.89	0.73	2.16
IDEQ	13-Jun-95	134.54	0.9	0.7	4.90	-0.11	-0.43	0.17	-0.34	0.22
IDEQ	28-Jun-95	73.77	0.8	0.3	4.30	-0.22	-1.15	-0.23	-0.55	-0.32
IDEQ	12-Jul-95	54.31	0.9	0.3	3.99	-0.11	-1.34	-0.36	-0.34	-0.41
IDEQ	26-Jul-95	42.22	1	0.2	3.74	0.00	-1.48	-0.44	-0.13	-0.47
IDEQ	15-Aug-95	42.22	1.1	0.2	3.74	0.10	-1.39	-0.44	0.09	-0.44
IDEQ	14-Sep-95	26.73	1.1	0.2	3.29	0.10	-1.84	-0.54	0.09	-0.59
URS	7-Nov-97	73.7	0.87	0.3	4.30	-0.14	-1.06	-0.23	-0.40	-0.28
IDEQ	24-Apr-98	562.1878832	1.2	3.6	6.33	0.18	1.29	2.99	0.30	5.11
URS	10-May-98	859	0.35	1.6	6.76	-1.05	0.48	4.95	-1.51	1.81
IDEQ	25-Jun-98	96.83695513	1	0.5	4.57	0.00	-0.65	-0.08	-0.13	0.01
IDEQ	27-Jul-98	48.47276685	0.9	0.2	3.88	-0.11	-1.45	-0.40	-0.34	-0.46
IDEQ	25-Aug-98	39.66786319	1	0.2	3.68	0.00	-1.54	-0.46	-0.13	-0.49
IDEQ	23-Sep-98	37.27465155	1.1	0.2	3.62	0.10	-1.51	-0.47	0.09	-0.48
IDEQ	27-Oct-98	35.4694727	1.2	0.2	3.57	0.18	-1.47	-0.48	0.30	-0.47
IDEQ	24-Nov-98	49.70988462	2.4	0.6	3.91	0.88	-0.44	-0.39	2.86	0.21
IDEQ	9-Mar-99	56.4129156	3.1	0.9	4.03	1.13	-0.06	-0.34	4.35	0.70

dCd

Concentration over time analysis

		r2	Slope, m
dCd	**SF228**	**Concentration over time**	
LnConc.=mTime+b All data r2, m:		**0.147**	**0.00023**
Time	**Ln[COC]**	**[COC]**	
16-May-91	-0.36	1	
28-Dec-94	-0.06	1	
9-Mar-99	0.29	1	
LnConc.=mTime+b >'96 r2, m:		**0.000**	**0.00000**
0-Jan-00	0.00	1	
9-Mar-99	0.00	1	

Lead over time analysis

dCd	**SF228**	**Lead over time**
LnLead=mTime+b All data r2, m:		**0.126**	**0.00043**
Time	**LnLead**	**Lead**
16-May-91	-1.69	0.2
28-Dec-94	-1.12	0.3
9-Mar-99	-0.47	1
LnLead=mTime+b >'96 r2, m:		**0.000**	**0.00000**
0-Jan-00	0.00	1
9-Mar-99	0.00	1

max r2: 0.879 max r2: 0.825

Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Lead(t)**		
r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
only on >4 data points. delete last 4 rows			only on >4 data points: delete last 4 rows		
0.147	0.00023	-7.87	0.126	0.00043	-15.92
0.080	0.00016	-5.51	0.173	0.00052	-19.35
0.054	0.00013	-4.65	0.131	0.00047	-17.28
0.058	0.00014	-4.89	0.119	0.00044	-16.39
0.059	0.00014	-4.99	0.104	0.00041	-15.28
0.077	0.00016	-5.68	0.095	0.00039	-14.70
0.099	0.00018	-6.44	0.086	0.00037	-14.03
0.097	0.00018	-6.46	0.073	0.00034	-12.89
0.095	0.00019	-6.49	0.060	0.00031	-11.74
0.093	0.00019	-6.51	0.045	0.00026	-10.00
0.091	0.00019	-6.54	0.029	0.00020	-7.97
0.084	0.00018	-6.35	0.021	0.00018	-6.98
0.087	0.00019	-6.54	0.016	0.00015	-6.19
0.079	0.00018	-6.33	0.017	0.00016	-6.37
0.057	0.00015	-5.14	0.024	0.00019	-7.55
0.039	0.00012	-4.18	0.026	0.00021	-8.06
0.031	0.00011	-3.74	0.033	0.00024	-9.12
0.023	0.00009	-3.23	0.035	0.00025	-9.47
0.015	0.00008	-2.64	0.027	0.00022	-8.59
0.011	0.00007	-2.28	0.017	0.00017	-6.91
0.016	0.00008	-2.85	0.010	0.00014	-5.53
0.012	0.00007	-2.46	0.002	0.00006	-2.78
0.012	0.00008	-2.58	0.000	0.00000	-0.54
0.029	0.00012	-4.04	0.001	-0.00003	0.52
0.027	0.00012	-4.02	0.000	-0.00003	0.33
0.021	0.00011	-3.64	0.001	-0.00004	0.65
0.019	0.00010	-3.55	0.000	0.00002	-1.29
0.044	0.00016	-5.49	0.003	0.00008	-3.50
0.030	0.00013	-4.66	0.003	0.00008	-3.57
0.051	0.00018	-6.33	0.025	0.00025	-9.71
0.084	0.00024	-8.55	0.107	0.00050	-18.68
0.076	0.00024	-8.64	0.164	0.00065	-24.16
0.054	0.00022	-7.77	0.167	0.00071	-26.33
0.042	0.00021	-7.57	0.153	0.00075	-27.75
0.041	0.00025	-8.84	0.117	0.00076	-28.03
0.068	0.00043	-15.16	0.086	0.00085	-31.24
0.449	0.00294	-105.80	0.018	-0.00097	34.19
0.639	0.00486	-175.11	0.117	-0.00343	122.96
0.852	0.00640	-230.47	0.000	-0.00011	3.29
0.834	0.00518	-186.65	0.347	0.00425	-154.20
0.879	0.00600	-216.21	0.784	0.00724	-262.46
0.853	0.00626	-225.44	0.825	0.00846	-306.32

update for EV, CV:

dCd **SF228**
LN Analysis **dCd**

Load **Load Data, EV=0.515 lbs/day CV=1.18**

			Load Data-based LN	
Avg:	**1**	**u**	**ln dCd Load**	**dCd Load**
SD:	**1**	3	1.7	6
CV:	**1.18**	0	-1.10	0.33
Min:	**0.1**	-3	-3.91	0.02
Max:	**4**			
Median:	**0.3**			

1	0.515
1.18	1.18

u=mLn(Load)+ b:

update for r2, EV, CV: **r2=0.958, EV=0.504lbs/day CV=1.05; max r2=0.98**

r2 u,lnLoad:	0.958	u	lnLoad	Load	
slope, m:	1.161	3	1.53	5	
intercept, b:	1.227	0	-1.06	0.35	
N:	46	-3	-3.64	0.03	
E[Load]:	0.5	Parameter Estimates			0.958 0.958
SD[Load]:	1	from LN regression			0.5 0.504
CV[Load]:	1.05	update graph label			1.0 1.05

max r2 0.982

Date	dCd Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
4-Oct-91	0.1	1	0.0135	-2.211	-2.509	0.958
15-Feb-94	0.1	2	0.0351	-1.810	-2.228	0.960
15-Feb-94	0.1	3	0.0568	-1.583	-2.179	0.964
30-Nov-93	0.1	4	0.0784	-1.416	-2.086	0.965
26-Oct-93	0.1	5	0.1000	-1.282	-1.966	0.966
19-Jan-94	0.1	6	0.1216	-1.167	-1.947	0.968
19-Jan-94	0.2	7	0.1432	-1.066	-1.870	0.969
14-Sep-95	0.2	8	0.1649	-0.975	-1.844	0.970
9-Sep-94	0.2	9	0.1865	-0.891	-1.799	0.970
20-Dec-93	0.2	10	0.2081	-0.813	-1.671	0.970
20-Dec-93	0.2	11	0.2297	-0.740	-1.656	0.973
23-Jul-94	0.2	12	0.2514	-0.670	-1.612	0.974
25-Aug-98	0.2	13	0.2730	-0.604	-1.545	0.976
15-Nov-94	0.2	14	0.2946	-0.540	-1.536	0.979
7-Mar-94	0.2	15	0.3162	-0.478	-1.529	0.980
23-Sep-98	0.2	16	0.3378	-0.418	-1.511	0.981
26-Jul-95	0.2	17	0.3595	-0.360	-1.482	0.982
27-Oct-98	0.2	18	0.3811	-0.303	-1.474	0.982
27-Jul-98	0.2	19	0.4027	-0.246	-1.449	0.982
16-Aug-94	0.2	20	0.4243	-0.191	-1.406	0.981
15-Aug-95	0.2	21	0.4459	-0.136	-1.387	0.979
23-Mar-94	0.3	22	0.4676	-0.081	-1.357	0.978
24-Jun-94	0.3	23	0.4892	-0.027	-1.352	0.976
12-Jul-95	0.3	24	0.5108	0.027	-1.336	0.974
28-Jun-95	0.3	25	0.5324	0.081	-1.147	0.974
7-Nov-97	0.3	26	0.5541	0.136	-1.064	0.972
14-Dec-94	0.4	27	0.5757	0.191	-1.026	0.969
8-Jun-94	0.4	28	0.5973	0.246	-0.836	0.966
6-Apr-94	0.4	29	0.6189	0.303	-0.810	0.967
25-Apr-95	0.5	30	0.6405	0.360	-0.757	0.967
10-Feb-95	0.5	31	0.6622	0.418	-0.744	0.968
3-May-94	0.5	32	0.6838	0.478	-0.701	0.967
25-Jun-98	0.5	33	0.7054	0.540	-0.652	0.965
11-Jan-95	0.6	34	0.7270	0.604	-0.587	0.964
20-May-94	0.6	35	0.7486	0.670	-0.480	0.962
16-May-91	0.6	36	0.7703	0.740	-0.459	0.965
24-Nov-98	0.6	37	0.7919	0.813	-0.443	0.965
13-Jun-95	0.7	38	0.8135	0.891	-0.429	0.961
18-Apr-94	0.7	39	0.8351	0.975	-0.314	0.953
12-Apr-95	0.9	40	0.8568	1.066	-0.134	0.941
22-Mar-95	0.9	41	0.8784	1.167	-0.096	0.930
9-Mar-99	0.9	42	0.9000	1.282	-0.061	0.904
8-May-95	1.6	43	0.9216	1.416	0.469	
10-May-98	1.6	44	0.9432	1.583	0.481	
23-May-95	1.8	45	0.9649	1.810	0.606	
24-Apr-98	3.6	46	0.9865	2.211	1.289	

update for EV, CV:

dCd		SF228		1	1.06
LN Analysis		dCd		0.44	0.443

Concentration — **Conc. Data, EV=1.06 ug/L CV=0.443**

		Data-based LN		
Avg:	1	u	ln[dCd]	[dCd]
SD:	0.5	3	1.2	3
CV:	0.44	3	-0.03	1
Min:	0.3	0	-1.30	0.3
Max:	3	-3		
Median:	1			

u=m Ln(Conc.)+b: — update for r2, EV, CV: **r2=0.904, EV=1.07 ug/L CV=0.455; max r2=0.96**

				0.904	0.904
				1.1	1.07
				0.455	0.455
r2 u,lnConc:	0.904	u	lnConc.	Conc.	
slope, m:	2.306	3	1.28	4	
intercept, b:	0.054	0	-0.02	1	
N:	46	-3	-1.32	0.3	
E[Conc]:	1.1	Parameter Estimates			
SD[Conc]:	0.5	from LN regression			
CV[Conc]:	0.45	update graph label			

	dCd	N: 46				max r2 0.963
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
16-May-91	0.3	1	0.0135	-2.211	-1.204	0.904
10-May-98	0.35	2	0.0351	-1.810	-1.050	0.900
18-Apr-94	0.5	3	0.0568	-1.583	-0.693	0.907
4-Oct-91	0.6	4	0.0784	-1.416	-0.511	0.900
3-May-94	0.6	5	0.1000	-1.282	-0.511	0.892
6-Apr-94	0.8	6	0.1216	-1.167	-0.223	0.883
7-Mar-94	0.8	7	0.1432	-1.066	-0.223	0.890
8-Jun-94	0.8	8	0.1649	-0.975	-0.223	0.895
20-May-94	0.8	9	0.1865	-0.891	-0.223	0.898
24-Jun-94	0.8	10	0.2081	-0.813	-0.223	0.900
25-Apr-95	0.8	11	0.2297	-0.740	-0.223	0.901
28-Jun-95	0.8	12	0.2514	-0.670	-0.223	0.900
7-Nov-97	0.87	13	0.2730	-0.604	-0.139	0.898
9-Sep-94	0.9	14	0.2946	-0.540	-0.105	0.902
10-Feb-95	0.9	15	0.3162	-0.478	-0.105	0.910
12-Jul-95	0.9	16	0.3378	-0.418	-0.105	0.917
13-Jun-95	0.9	17	0.3595	-0.360	-0.105	0.923
15-Feb-94	0.9	18	0.3811	-0.303	-0.105	0.929
15-Feb-94	0.9	19	0.4027	-0.246	-0.105	0.933
19-Jan-94	0.9	20	0.4243	-0.191	-0.105	0.935
19-Jan-94	0.9	21	0.4459	-0.136	-0.105	0.937
23-Jul-94	0.9	22	0.4676	-0.081	-0.105	0.937
27-Jul-98	0.9	23	0.4892	-0.027	-0.105	0.936
11-Jan-95	1	24	0.5108	0.027	0.000	0.933
22-Mar-95	1	25	0.5324	0.081	0.000	0.940
23-Mar-94	1	26	0.5541	0.136	0.000	0.947
25-Aug-98	1	27	0.5757	0.191	0.000	0.951
25-Jun-98	1	28	0.5973	0.246	0.000	0.954
26-Jul-95	1	29	0.6189	0.303	0.000	0.956
30-Nov-93	1	30	0.6405	0.360	0.000	0.955
14-Sep-95	1.1	31	0.6622	0.418	0.095	0.952
15-Aug-95	1.1	32	0.6838	0.478	0.095	0.958
15-Nov-94	1.1	33	0.7054	0.540	0.095	0.962
23-Sep-98	1.1	34	0.7270	0.604	0.095	0.963
26-Oct-93	1.1	35	0.7486	0.670	0.095	0.960
24-Apr-98	1.2	36	0.7703	0.740	0.182	0.954
27-Oct-98	1.2	37	0.7919	0.813	0.182	0.952
16-Aug-94	1.3	38	0.8135	0.891	0.262	0.944
8-May-95	1.4	39	0.8351	0.975	0.336	0.940
23-May-95	1.4	40	0.8568	1.066	0.336	0.950
20-Dec-93	1.5	41	0.8784	1.167	0.405	0.948
20-Dec-93	1.5	42	0.9000	1.282	0.405	0.958
12-Apr-95	1.7	43	0.9216	1.416	0.531	
14-Dec-94	1.7	44	0.9432	1.583	0.531	
24-Nov-98	2.4	45	0.9649	1.810	0.875	
9-Mar-99	3.1	46	0.9865	2.211	1.131	

update for EV, CV:

dCd		**SF228**			109	109
LN Analysis		**dCd**			1.39	1.39
Discharge, Q		**Q Data, EV=109 cfs CV=1.39**				
Avg:	**109**	**Q Data-based LN**				
SD:	**152**	u	lnQ	Q		
CV:	**1.39**	3	7.3	1431		
Min:	**22**	0	4.15	63		
Max:	**859**	-3	1.03	3		
Median:	**50**					
					0.918	0.918
					104.5	104
	u=mLn(Q)+b:				1.22	1.22

update for r2, EV, CV: **r2=0.918, EV=104 cfs CV=1.22; max r2=0.99**

r2 u,lnQ:	0.918	u	lnQ	Q
slope, m:	1.045	3	7.06	1167
intercept, b:	-4.379	0	4.19	66
N:	46	-3	1.32	4
E[Q]:	104.5	Parameter Estimates		
SD[Q]:	128	from LN regression		
CV[Q]:	1.22	update graph label		

N: 46

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.993 r2 forward
update and rank for new data						
15-Feb-94	22.25	1	0.0135	-2.211	3.102	0.918
30-Nov-93	23.09	2	0.0351	-1.810	3.139	0.940
20-Dec-93	23.3	3	0.0568	-1.583	3.148	0.952
15-Feb-94	23.38	4	0.0784	-1.416	3.152	0.959
20-Dec-93	23.66	5	0.1000	-1.282	3.164	0.964
26-Oct-93	23.66	6	0.1216	-1.167	3.164	0.967
4-Oct-91	25.2	7	0.1432	-1.066	3.227	0.968
14-Sep-95	26.73	8	0.1649	-0.975	3.286	0.969
19-Jan-94	29.48	9	0.1865	-0.891	3.384	0.969
19-Jan-94	31.84	10	0.2081	-0.813	3.461	0.971
9-Sep-94	34.18	11	0.2297	-0.740	3.532	0.974
16-Aug-94	35.03	12	0.2514	-0.670	3.556	0.977
27-Oct-98	35.4694727	13	0.2730	-0.604	3.569	0.980
15-Nov-94	36.36	14	0.2946	-0.540	3.593	0.982
23-Sep-98	37.27465155	15	0.3162	-0.478	3.618	0.983
14-Dec-94	39.18	16	0.3378	-0.418	3.668	0.985
25-Aug-98	39.66786319	17	0.3595	-0.360	3.681	0.986
23-Jul-94	41.18	18	0.3811	-0.303	3.718	0.987
15-Aug-95	42.22	19	0.4027	-0.246	3.743	0.987
26-Jul-95	42.22	20	0.4243	-0.191	3.743	0.987
23-Mar-94	47.87	21	0.4459	-0.136	3.868	0.986
27-Jul-98	48.47276685	22	0.4676	-0.081	3.881	0.987
24-Nov-98	49.70988462	23	0.4892	-0.027	3.906	0.986
7-Mar-94	50.34	24	0.5108	0.027	3.919	0.985
12-Jul-95	54.31	25	0.5324	0.081	3.995	0.984
9-Mar-99	56.4129156	26	0.5541	0.136	4.033	0.983
24-Jun-94	60.11	27	0.5757	0.191	4.096	0.981
7-Nov-97	73.7	28	0.5973	0.246	4.300	0.979
28-Jun-95	73.77	29	0.6189	0.303	4.301	0.978
12-Apr-95	95.58	30	0.6405	0.360	4.560	0.976
25-Jun-98	96.83695513	31	0.6622	0.418	4.573	0.982
10-Feb-95	98.11	32	0.6838	0.478	4.586	0.987
8-Jun-94	100.71	33	0.7054	0.540	4.612	0.990
6-Apr-94	103.37	34	0.7270	0.604	4.638	0.993
11-Jan-95	103.37	35	0.7486	0.670	4.638	0.993
25-Apr-95	108.94	36	0.7703	0.740	4.691	0.992
13-Jun-95	134.54	37	0.7919	0.813	4.902	0.991
20-May-94	143.78	38	0.8135	0.891	4.968	0.992
3-May-94	153.69	39	0.8351	0.975	5.035	0.991
22-Mar-95	168.78	40	0.8568	1.066	5.129	0.988
8-May-95	212.3	41	0.8784	1.167	5.358	0.986
23-May-95	243.28	42	0.9000	1.282	5.494	0.982
18-Apr-94	271.47	43	0.9216	1.416	5.604	
16-May-91	391.6	44	0.9432	1.583	5.970	
24-Apr-98	562.1878832	45	0.9649	1.810	6.332	
10-May-98	859	46	0.9865	2.211	6.756	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.		see comment
Station:	SF228	Date: 13-Jun-00
Chemical:	dPb	Analyst: JMacLachlan
Notes:		

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load				
Avg:	34,853	109	3	3		0.00	0.00	0.00	
SD:	681	152	1	7		1.00	1.00	1.00	
CV:	0.02	1.39	0.36	2.18					first:
Min:	33,374	22	1	0.1		-0.57	-1.97	-0.44	mid:
Max:	36,228	859	7	34		4.95	3.16	4.30	last:
Median:	34,696	50	3	1		-0.39	-0.34	-0.34	

dPb SF228			: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b	
Conc. = mQ+b (r2=0.325)		update r2	0.33	0.325		r2:	0.032	0.024	
r2 Q,[COC]:	0.33	[dPb]	Q			m:	0.0396	0.00020	
slope, m:	0.003	3	22.3			b:	-1271	-2.83	
intercept, b:	2.9	3	108.6						
N: 21		6	859						first:
LnConc. = mLn(Q)+b (r2=0.176)		update r2		0.18	0.176				mid:
r2 lnQ,ln[COC]:	0.18	ln[dPb]	ln Q	[dPb]	Q				last:
slope, m:	0.16	0.97	3.10	3	22				
intercept, b:	0.47	1.23	4.69	3	109				
N: 21		1.56	6.76	5	859				

N= 46

	Sampling Date	Q Discharge cfs	dPb Concentration ug/L	dPb Load lbs/day	Ln Q	Ln dPb Conc.	Ln dPb Load	dPb SF228 Standardized Values = (x - Avg)/SD Q	for graph 0 Conc	Load
update for new data										
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	*16-May-91*	*391.6*			5.97			1.87		
MFG	4-Oct-91	25.2	1	0.1	3.23	0.00	-2.00	-0.55	-1.97	-0.44
IDEQ	26-Oct-93	23.66	3	0.4	3.16	1.10	-0.96	-0.56	-0.34	-0.40
IDEQ	*30-Nov-93*	*23.09*			3.14			-0.56		
IDEQ	*20-Dec-93*	*23.66*			3.16			-0.56		
IDEQ	*20-Dec-93*	*23.3*			3.15			-0.56		
IDEQ	*19-Jan-94*	*29.48*			3.38			-0.52		
IDEQ	*19-Jan-94*	*31.84*			3.46			-0.51		
IDEQ	*15-Feb-94*	*23.38*			3.15			-0.56		
IDEQ	*15-Feb-94*	*22.25*			3.10			-0.57		
IDEQ	*7-Mar-94*	*50.34*			3.92			-0.38		
IDEQ	23-Mar-94	47.87	3	0.8	3.87	1.10	-0.26	-0.40	-0.34	-0.35
IDEQ	*6-Apr-94*	*103.37*			4.64			-0.03		
IDEQ	*18-Apr-94*	*271.47*			5.60			1.07		
IDEQ	*3-May-94*	*153.69*			5.03			0.30		
IDEQ	20-May-94	143.78	2.5	1.9	4.97	0.92	0.66	0.23	-0.74	-0.19
IDEQ	*8-Jun-94*	*100.71*			4.61			-0.05		
IDEQ	*24-Jun-94*	*60.11*			4.10			-0.32		
IDEQ	*23-Jul-94*	*41.18*			3.72			-0.45		
IDEQ	16-Aug-94	35.03	2.5	0.5	3.56	0.92	-0.75	-0.49	-0.74	-0.39
IDEQ	*9-Sep-94*	*34.18*			3.53			-0.49		
IDEQ	15-Nov-94	36.36	3	0.6	3.59	1.10	-0.53	-0.48	-0.34	-0.38
IDEQ	14-Dec-94	39.18	4	0.8	3.67	1.39	-0.17	-0.46	0.48	-0.34
IDEQ	*11-Jan-95*	*103.37*			4.64			-0.03		
IDEQ	*10-Feb-95*	*98.11*			4.59			-0.07		
IDEQ	*22-Mar-95*	*168.78*			5.13			0.40		
IDEQ	12-Apr-95	95.58	5	2.6	4.56	1.61	0.94	-0.09	1.29	-0.10
IDEQ	*25-Apr-95*	*108.94*			4.69			0.00		
IDEQ	8-May-95	212.3	3	3.4	5.36	1.10	1.23	0.68	-0.34	0.02
IDEQ	23-May-95	243.28	3	3.9	5.49	1.10	1.37	0.89	-0.34	0.09
IDEQ	13-Jun-95	134.54	5	3.6	4.90	1.61	1.29	0.17	1.29	0.05
IDEQ	*28-Jun-95*	*73.77*			4.30			-0.23		
IDEQ	12-Jul-95	54.31	3	0.9	3.99	1.10	-0.13	-0.36	-0.34	-0.34
IDEQ	*26-Jul-95*	*42.22*			3.74			-0.44		
IDEQ	*15-Aug-95*	*42.22*			3.74			-0.44		
IDEQ	*14-Sep-95*	*26.73*			3.29			-0.54		
URS	7-Nov-97	73.7	2.42	1.0	4.30	0.88	-0.04	-0.23	-0.81	-0.32
IDEQ	24-Apr-98	562.1878832	3	9.1	6.33	1.10	2.21	2.99	-0.34	0.82
URS	10-May-98	859	7.3	33.7	6.76	1.99	3.52	4.95	3.16	4.30
IDEQ	*25-Jun-98*	*96.83695513*			4.57			-0.08		
IDEQ	27-Jul-98	48.47276685	3	0.8	3.88	1.10	-0.25	-0.40	-0.34	-0.35
IDEQ	25-Aug-98	39.66786319	3	0.6	3.68	1.10	-0.45	-0.46	-0.34	-0.37
IDEQ	23-Sep-98	37.27465155	4	0.8	3.62	1.39	-0.22	-0.47	0.48	-0.35
IDEQ	27-Oct-98	35.4694727	4	0.8	3.57	1.39	-0.27	-0.48	0.48	-0.35
IDEQ	24-Nov-98	49.70988462	3	0.8	3.91	1.10	-0.22	-0.39	-0.34	-0.35
IDEQ	9-Mar-99	56.4129156	4	1.2	4.03	1.39	0.19	-0.34	0.48	-0.29

dPb

Concentration over time analysis

		r2	Slope, m
dPb	**SF228**	**Concentration over time**	
LnConc.=mTime+b All data r2, m:		**0.237**	**0.00023**
Time	Ln[COC]	[COC]	
16-May-91	0.74	2	
28-Dec-94	1.05	3	
9-Mar-99	1.41	4	
LnConc.=mTime+b >'96 r2, m:		**0.000**	**0.00000**
0-Jan-00	0.00	1	
9-Mar-99	0.00	1	

Lead over time analysis

dPb	**SF228**	**Lead over time**
LnLead=mTime+b All data r2, m:		**0.110**	**0.00050**
Time	**LnLead**	**Lead**
16-May-91	-0.66	1
28-Dec-94	0.00	1
9-Mar-99	0.77	2
LnLead=mTime+b >'96 r2, m:		**0.000**	**0.00000**
0-Jan-00	0.00	1
9-Mar-99	0.00	1

max r2: 0.267

Forward time Regression on Ln Concentration(t)

max r2: 0.906

Forward time Regression on Ln Lead(t)

r2	slope	intercept	r2	slope	intercept
only on >4 data points; delete last 4 rows			only on >4 data points; delete last 4 rows		
0.237	0.00023	-7.02	0.110	0.00050	-17.37
0.237	0.00023	-7.02	0.110	0.00050	-17.37
0.055	0.00009	-2.00	0.025	0.00024	-8.25
0.046	0.00009	-1.86	0.005	0.00011	-3.52
0.046	0.00009	-1.86	0.005	0.00011	-3.52
0.046	0.00009	-1.86	0.005	0.00011	-3.52
0.046	0.00009	-1.86	0.005	0.00011	-3.52
0.046	0.00009	-1.86	0.005	0.00011	-3.52
0.046	0.00009	-1.86	0.005	0.00011	-3.52
0.046	0.00009	-1.86	0.005	0.00011	-3.52
0.046	0.00009	-1.86	0.005	0.00011	-3.52
0.046	0.00009	-1.86	0.005	0.00011	-3.52
0.036	0.00008	-1.63	0.001	0.00004	-0.92
0.036	0.00008	-1.63	0.001	0.00004	-0.92
0.036	0.00008	-1.63	0.001	0.00004	-0.92
0.036	0.00008	-1.63	0.001	0.00004	-0.92
0.011	0.00005	-0.39	0.002	0.00007	-2.07
0.011	0.00005	-0.39	0.002	0.00007	-2.07
0.011	0.00005	-0.39	0.002	0.00007	-2.07
0.011	0.00005	-0.39	0.002	0.00007	-2.07
0.000	0.00000	1.23	0.003	-0.00010	4.16
0.000	0.00000	1.23	0.003	-0.00010	4.16
0.004	-0.00003	2.28	0.025	-0.00029	10.98
0.001	-0.00001	1.75	0.064	-0.00050	18.34
0.001	-0.00001	1.75	0.064	-0.00050	18.34
0.001	-0.00001	1.75	0.064	-0.00050	18.34
0.001	-0.00001	1.75	0.064	-0.00050	18.34
0.012	0.00006	-0.78	0.060	-0.00052	19.19
0.012	0.00006	-0.78	0.060	-0.00052	19.19
0.002	0.00003	0.36	0.041	-0.00047	17.46
0.003	-0.00004	2.63	0.014	-0.00032	11.84
0.058	0.00019	-5.75	0.000	0.00007	-1.94
0.058	0.00019	-5.75	0.000	0.00007	-1.94
0.048	0.00050	-16.57	0.121	-0.00342	123.80
0.048	0.00050	-16.57	0.121	-0.00342	123.80
0.048	0.00050	-16.57	0.121	-0.00342	123.80
0.048	0.00050	-16.57	0.121	-0.00342	123.80
0.029	-0.00050	19.35	0.436	-0.00926	334.18
0.161	-0.00132	48.99	0.309	-0.00822	296.76
0.267	0.00102	-35.50	0.730	0.00226	-81.76
0.267	0.00102	-35.50	0.730	0.00226	-81.76
0.134	0.00077	-26.36	0.906	0.00296	-107.25

update for EV, CV:

dPb **SF228**

LN Analysis **dPb**

Load **Load Data, EV=3.25 lbs/day CV=2.18**

Avg:	**3**	**Load Data-based LN**		
SD:	**7**	u	ln dPb Load	dPb Load
CV:	**2.18**	3	4.3	72
Min:	**0.1**	0	0.30	1
Max:	**34**	-3	-3.66	0.03
Median:	**1**			

3	3.25
2.18	2.18

ū=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.935, EV=1.7lbs/day CV=3.99; max r2=0.96**

r2 u,lnLoad:	0.935	u	lnLoad	Load	
slope, m:	0.595	3	4.16	64	
intercept, b:	0.526	0	-0.88	0.4	
N:	21	-3	-5.93	0.003	
E[Load]:	1.7	Parameter Estimates			0.935 0.935
SD[Load]:	7	from LN regression			1.7 1.7
CV[Load]:	3.99	update graph label			4.0 3.99
					max r2
dPb	N: 46				0.963

Date	**Load lbs/day Ranked**	**i rank**	**i-3/8 / N+1/4 plotting points**	**u y-axis**	**Ln x-axis**	**r2 forward**
update and rank for new data						
20-Dec-93		1	0.0135	-2.211		
20-Dec-93		2	0.0351	-1.810		
15-Feb-94		3	0.0568	-1.583		
30-Nov-93		4	0.0784	-1.416		
15-Feb-94		5	0.1000	-1.282		
14-Sep-95		6	0.1216	-1.167		
19-Jan-94		7	0.1432	-1.066		
19-Jan-94		8	0.1649	-0.975		
4-Oct-91	**0.1**	9	0.1865	-0.891	-1.998	0.935
9-Sep-94		10	0.2081	-0.813		
23-Jul-94		11	0.2297	-0.740		
26-Jul-95		12	0.2514	-0.670		
15-Aug-95		13	0.2730	-0.604		
7-Mar-94		14	0.2946	-0.540		
24-Jun-94		15	0.3162	-0.478		
28-Jun-95		16	0.3378	-0.418		
26-Oct-93	**0.4**	17	0.3595	-0.360	-0.963	0.923
10-Feb-95		18	0.3811	-0.303		
8-Jun-94		19	0.4027	-0.246		
6-Apr-94		20	0.4243	-0.191		
11-Jan-95		21	0.4459	-0.136		
25-Apr-95		22	0.4676	-0.081		
16-Aug-94	**0.5**	23	0.4892	-0.027	-0.753	0.929
15-Nov-94	**0.6**	24	0.5108	0.027	-0.533	0.927
3-May-94		25	0.5324	0.081		
25-Aug-98	**0.6**	26	0.5541	0.136	-0.446	0.934
22-Mar-95		27	0.5757	0.191		
27-Oct-98	**0.8**	28	0.5973	0.246	-0.270	0.939
23-Mar-94	**0.8**	29	0.6189	0.303	-0.258	0.949
25-Jun-98		30	0.6405	0.360		
27-Jul-98	**0.8**	31	0.6622	0.418	-0.245	0.958
23-Sep-98	**0.8**	32	0.6838	0.478	-0.220	0.961
24-Nov-98	**0.8**	33	0.7054	0.540	-0.220	0.963
14-Dec-94	**0.8**	34	0.7270	0.604	-0.171	0.962
12-Jul-95	**0.9**	35	0.7486	0.670	-0.132	0.958
7-Nov-97	**1.0**	36	0.7703	0.740	-0.041	0.950
18-Apr-94		37	0.7919	0.813		
9-Mar-99	**1.2**	38	0.8135	0.891	0.194	0.938
20-May-94	**1.9**	39	0.8351	0.975	0.660	0.921
12-Apr-95	**2.6**	40	0.8568	1.066	0.944	0.910
16-May-91		41	0.8784	1.167		
8-May-95	**3.4**	42	0.9000	1.282	1.232	0.935
13-Jun-95	**3.6**	43	0.9216	1.416	1.286	
23-May-95	**3.9**	44	0.9432	1.583	1.368	
24-Apr-98	**9.1**	45	0.9649	1.810	2.205	
10-May-98	**33.7**	46	0.9865	2.211	3.519	

update for EV, CV:

dPb		SF228	3	3.42
LN Analysis		dPb	0.36	0.36

Concentration

Conc. Data, EV=3.42 ug/L CV=0.36

		Data-based LN		
Avg:	3	u	ln[dPb]	[dPb]
SD:	1	3	2.2	9
CV:	0.36	0	1.17	3
Min:	1	-3	0.12	1
Max:	7			
Median:	3			

				0.760	0.76
u=mLn(Conc.)+b:				2.2	2.25
update for r2, EV, CV:	r2=0.76, EV=2.25 ug/L CV=0.886; max r2=0.99			0.886	0.886
r2 u,lnConc:	0.760	u	lnConc.	Conc.	
slope, m:	1.314	3	2.80	16	
intercept, b:	-0.683	0	0.52	2	
N:	21	-3	-1.76	0.2	
E[Conc]:	2.2	Parameter Estimates			
SD[Conc]:	2	from LN regression			
CV[Conc]:	0.89	update graph label			

	dPb	N: 46				max r2 0.933
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
20-Dec-93		1	0.0135	-2.211		
20-Dec-93		2	0.0351	-1.810		
30-Nov-93		3	0.0568	-1.583		
19-Jan-94		4	0.0784	-1.416		
19-Jan-94		5	0.1000	-1.282		
15-Feb-94		6	0.1216	-1.167		
15-Feb-94		7	0.1432	-1.066		
7-Mar-94		8	0.1649	-0.975		
6-Apr-94		9	0.1865	-0.891		
18-Apr-94		10	0.2081	-0.813		
3-May-94		11	0.2297	-0.740		
8-Jun-94		12	0.2514	-0.670		
24-Jun-94		13	0.2730	-0.604		
23-Jul-94		14	0.2946	-0.540		
9-Sep-94		15	0.3162	-0.478		
11-Jan-95		16	0.3378	-0.418		
10-Feb-95		17	0.3595	-0.360		
22-Mar-95		18	0.3811	-0.303		
25-Apr-95		19	0.4027	-0.246		
28-Jun-95		20	0.4243	-0.191		
26-Jul-95		21	0.4459	-0.136		
15-Aug-95		22	0.4676	-0.081		
14-Sep-95		23	0.4892	-0.027		
4-Oct-91	1	24	0.5108	0.027	0.000	0.760
16-May-91		25	0.5324	0.081		
25-Jun-98		26	0.5541	0.136		
7-Nov-97	2.42	27	0.5757	0.191	0.884	0.912
20-May-94	2.5	28	0.5973	0.246	0.916	0.904
16-Aug-94	2.5	29	0.6189	0.303	0.916	0.895
26-Oct-93	3	30	0.6405	0.360	1.099	0.884
23-Mar-94	3	31	0.6622	0.418	1.099	0.897
15-Nov-94	3	32	0.6838	0.478	1.099	0.908
8-May-95	3	33	0.7054	0.540	1.099	0.918
23-May-95	3	34	0.7270	0.604	1.099	0.926
12-Jul-95	3	35	0.7486	0.670	1.099	0.930
24-Apr-98	3	36	0.7703	0.740	1.099	0.930
27-Jul-98	3	37	0.7919	0.813	1.099	0.924
25-Aug-98	3	38	0.8135	0.891	1.099	0.911
24-Nov-98	3	39	0.8351	0.975	1.099	0.892
14-Dec-94	4	40	0.8568	1.066	1.386	0.888
23-Sep-98	4	41	0.8784	1.167	1.386	0.915
27-Oct-98	4	42	0.9000	1.282	1.386	0.933
9-Mar-99	4	43	0.9216	1.416	1.386	
12-Apr-95	5	44	0.9432	1.583	1.609	
13-Jun-95	5	45	0.9649	1.810	1.609	
10-May-98	7.3	46	0.9865	2.211	1.988	

update for EV, CV:

dPb		**SF228**			109	109
LN Analysis		**dPb**			1.39	1.39
Discharge, Q		**Q Data, EV=109 cfs CV=1.39**				
Avg:	**109**	**Q Data-based LN**				
SD:	**152**	u	lnQ	Q		
CV:	**1.39**	3	7.3	1431		
Min:	**22**	0	4.15	63		
Max:	**859**	-3	1.03	3		
Median:	**50**					
					0.918	0.918
					104.5	104
	u=mLn(Q)+b:				1.22	1.22

update for r2, EV, CV: **r2=0.918, EV=104 cfs CV=1.22; max r2=0.99**

r2 u,lnQ:	0.918	u	lnQ	Q
slope, m:	1.045	3	7.06	1167
intercept, b:	-4.379	0	4.19	66
N: 46		-3	1.32	4
E[Q]:	104.5	Parameter Estimates		
SD[Q]:	128	from LN regression		
CV[Q]:	1.22	update graph label		

max r2 0.993

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
15-Feb-94	*22.25*	1	0.0135	-2.211	3.102	0.918
30-Nov-93	*23.09*	2	0.0351	-1.810	3.139	0.940
20-Dec-93	*23.3*	3	0.0568	-1.583	3.148	0.952
15-Feb-94	*23.38*	4	0.0784	-1.416	3.152	0.959
26-Oct-93	23.66	5	0.1000	-1.282	3.164	0.964
20-Dec-93	*23.66*	6	0.1216	-1.167	3.164	0.967
4-Oct-91	25.2	7	0.1432	-1.066	3.227	0.968
14-Sep-95	*26.73*	8	0.1649	-0.975	3.286	0.969
19-Jan-94	*29.48*	9	0.1865	-0.891	3.384	0.969
19-Jan-94	*31.84*	10	0.2081	-0.813	3.461	0.971
9-Sep-94	*34.18*	11	0.2297	-0.740	3.532	0.974
16-Aug-94	35.03	12	0.2514	-0.670	3.556	0.977
27-Oct-98	35.4694727	13	0.2730	-0.604	3.569	0.980
15-Nov-94	36.36	14	0.2946	-0.540	3.593	0.982
23-Sep-98	37.27465155	15	0.3162	-0.478	3.618	0.983
14-Dec-94	39.18	16	0.3378	-0.418	3.668	0.985
25-Aug-98	39.66786319	17	0.3595	-0.360	3.681	0.986
23-Jul-94	*41.18*	18	0.3811	-0.303	3.718	0.987
26-Jul-95	*42.22*	19	0.4027	-0.246	3.743	0.987
15-Aug-95	*42.22*	20	0.4243	-0.191	3.743	0.987
23-Mar-94	47.87	21	0.4459	-0.136	3.868	0.986
27-Jul-98	48.47276685	22	0.4676	-0.081	3.881	0.987
24-Nov-98	49.70988462	23	0.4892	-0.027	3.906	0.986
7-Mar-94	*50.34*	24	0.5108	0.027	3.919	0.985
12-Jul-95	54.31	25	0.5324	0.081	3.995	0.984
9-Mar-99	56.4129156	26	0.5541	0.136	4.033	0.983
24-Jun-94	*60.11*	27	0.5757	0.191	4.096	0.981
7-Nov-97	73.7	28	0.5973	0.246	4.300	0.979
28-Jun-95	*73.77*	29	0.6189	0.303	4.301	0.978
12-Apr-95	95.58	30	0.6405	0.360	4.560	0.976
25-Jun-98	*96.83695513*	31	0.6622	0.418	4.573	0.982
10-Feb-95	*98.11*	32	0.6838	0.478	4.586	0.987
8-Jun-94	*100.71*	33	0.7054	0.540	4.612	0.990
6-Apr-94	*103.37*	34	0.7270	0.604	4.638	0.993
11-Jan-95	*103.37*	35	0.7486	0.670	4.638	0.993
25-Apr-95	*108.94*	36	0.7703	0.740	4.691	0.992
13-Jun-95	134.54	37	0.7919	0.813	4.902	0.991
20-May-94	143.78	38	0.8135	0.891	4.968	0.992
3-May-94	*153.69*	39	0.8351	0.975	5.035	0.991
22-Mar-95	*168.78*	40	0.8568	1.066	5.129	0.988
8-May-95	212.3	41	0.8784	1.167	5.358	0.986
23-May-95	243.28	42	0.9000	1.282	5.494	0.982
18-Apr-94	*271.47*	43	0.9216	1.416	5.604	
16-May-91	*391.6*	44	0.9432	1.583	5.970	
24-Apr-98	562.1878832	45	0.9649	1.810	6.332	
10-May-98	859	46	0.9865	2.211	6.756	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF228	Date:	13-Jun-00
Chemical:	dZn	Analyst:	JMacLachlan
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load				
Avg:	34,875	118	170	77		0.00	0.00	0.00	
SD:	691	164	68	72		1.00	1.00	1.00	
CV:	0.02	1.38	0.40	0.94					first:
Min:	33,374	22	10	1.4		-0.59	-2.36	-1.05	mid:
Max:	36,228	859	339	345		4.53	2.50	3.69	last:
Median:	34,710	50	182	56		-0.42	0.18	-0.30	

dZn	SF228		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b	
Conc. = mQ+b (r2=0.268)		update r2	0.27	0.268	r2:	0.061	0.046	
r2 Q,[COC]:	0.27	[dZn]	Q		m:	0.0586	0.00029	
slope, m:	-0.2	191	22.3		b:	-1924	-5.89	
intercept, b:	195.3	170	118.3					
N: 47		11	859					first:
LnConc. = mLn(Q)+b (r2=0.196)		update r2	0.20	0.196				mid:
r2 lnQ,ln[COC]:	0.20	ln[dZn]	ln Q	[dZn] Q				last:
slope, m:	-0.27	5.33	3.10	206 22				
intercept, b:	6.17	4.87	4.77	131 118				
N: 47		4.34	6.76	77 859				

N= 47

	Sampling Date	Q Discharge	dZn Concentration	dZn Load	Ln Q	Ln dZn Conc.	Ln dZn Load	dZn SF228 for graph 0	Standardized Values = (x - Avg)/SD		
update for new data		cfs	ug/L	lbs/day					Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis				
MFG	16-May-91	391.6	54	113.8	5.97	3.99	4.73		1.67	-1.71	0.50
MFG	4-Oct-91	25.2	10	1.4	3.23	2.30	0.30		-0.57	-2.36	-1.05
IDEQ	26-Oct-93	23.66	225	28.6	3.16	5.42	3.35		-0.58	0.81	-0.67
IDEQ	30-Nov-93	23.09	239	29.7	3.14	5.48	3.39		-0.58	1.02	-0.66
IDEQ	20-Dec-93	23.3	241	30.2	3.15	5.48	3.41		-0.58	1.05	-0.65
IDEQ	20-Dec-93	23.66	241	30.7	3.16	5.48	3.42		-0.58	1.05	-0.64
IDEQ	19-Jan-94	29.48	190	30.1	3.38	5.25	3.41		-0.54	0.30	-0.65
IDEQ	19-Jan-94	31.84	190	32.5	3.46	5.25	3.48		-0.53	0.30	-0.62
IDEQ	15-Feb-94	22.25	212	25.4	3.10	5.36	3.23		-0.59	0.62	-0.72
IDEQ	15-Feb-94	23.38	212	26.7	3.15	5.36	3.28		-0.58	0.62	-0.70
IDEQ	7-Mar-94	50.34	182	49.3	3.92	5.20	3.90		-0.42	0.18	-0.39
IDEQ	23-Mar-94	47.87	216	55.6	3.87	5.38	4.02		-0.43	0.68	-0.30
IDEQ	6-Apr-94	103.37	145	80.6	4.64	4.98	4.39		-0.09	-0.37	0.05
IDEQ	18-Apr-94	271.47	86	125.6	5.60	4.45	4.83		0.94	-1.24	0.67
IDEQ	3-May-94	153.69	89	73.6	5.03	4.49	4.30		0.22	-1.20	-0.05
IDEQ	20-May-94	143.78	95	73.5	4.97	4.55	4.30		0.16	-1.11	-0.05
IDEQ	8-Jun-94	100.71	132	71.5	4.61	4.88	4.27		-0.11	-0.56	-0.08
IDEQ	24-Jun-94	60.11	122	39.5	4.10	4.80	3.68		-0.36	-0.71	-0.52
IDEQ	23-Jul-94	41.18	148	32.8	3.72	5.00	3.49		-0.47	-0.32	-0.61
IDEQ	16-Aug-94	35.03	221	41.6	3.56	5.40	3.73		-0.51	0.75	-0.49
IDEQ	9-Sep-94	34.18	183	33.7	3.53	5.21	3.52		-0.51	0.19	-0.60
IDEQ	15-Nov-94	36.36	277	54.2	3.59	5.62	3.99		-0.50	1.58	-0.32
IDEQ	14-Dec-94	39.18	339	71.5	3.67	5.83	4.27		-0.48	2.50	-0.08
IDEQ	11-Jan-95	103.37	209	116.2	4.64	5.34	4.76		-0.09	0.58	0.54
IDEQ	10-Feb-95	98.11	213	112.4	4.59	5.36	4.72		-0.12	0.64	0.48
IDEQ	22-Mar-95	168.78	182	165.3	5.13	5.20	5.11		0.31	0.18	1.21
IDEQ	12-Apr-95	95.58	170	87.4	4.56	5.14	4.47		-0.14	0.00	0.14
IDEQ	25-Apr-95	108.94	140	82.1	4.69	4.94	4.41		-0.06	-0.44	0.07
IDEQ	8-May-95	212.3	76	86.8	5.36	4.33	4.46		0.57	-1.39	0.13
IDEQ	23-May-95	243.28	89	116.5	5.49	4.49	4.76		0.76	-1.20	0.54
IDEQ	13-Jun-95	134.54	102	73.8	4.90	4.62	4.30		0.10	-1.00	-0.05
IDEQ	28-Jun-95	73.77	116	46.0	4.30	4.75	3.83		-0.27	-0.80	-0.43
IDEQ	12-Jul-95	54.31	126	36.8	3.99	4.84	3.61		-0.39	-0.65	-0.56
IDEQ	26-Jul-95	42.22	181	41.1	3.74	5.20	3.72		-0.47	0.16	-0.50
IDEQ	15-Aug-95	42.22	203	46.1	3.74	5.31	3.83		-0.47	0.49	-0.43
IDEQ	14-Sep-95	26.73	208	29.9	3.29	5.34	3.40		-0.56	0.56	-0.65
URS	7-Nov-97	73.7	193	76.5	4.30	5.26	4.34		-0.27	0.34	-0.01
IDEQ	24-Apr-98	562.1878832	114	344.8	6.33	4.74	5.84		2.71	-0.83	3.69
IDEQ	24-Apr-98	562.1878832	94	284.3	6.33	4.54	5.65		2.71	-1.12	2.86
URS	10-May-98	859	74.3	343.4	6.76	4.31	5.84		4.53	-1.41	3.67
IDEQ	25-Jun-98	96.83695513	163	84.9	4.57	5.09	4.44		-0.13	-0.10	0.10
IDEQ	27-Jul-98	48.47276685	130	33.9	3.88	4.87	3.52		-0.43	-0.59	-0.60
IDEQ	25-Aug-98	39.66786319	161	34.4	3.68	5.08	3.54		-0.48	-0.13	-0.59
IDEQ	23-Sep-98	37.27465155	183	36.7	3.62	5.21	3.60		-0.50	0.19	-0.56
IDEQ	27-Oct-98	35.4694727	294	56.1	3.57	5.68	4.03		-0.51	1.83	-0.29
IDEQ	24-Nov-98	49.70988462	282	75.4	3.91	5.64	4.32		-0.42	1.66	-0.03
IDEQ	9-Mar-99	56.4129156	235	71.3	4.03	5.46	4.27		-0.38	0.96	-0.08

dZn

Concentration over time analysis

dZn	SF228		r2	Slope, m
			Concentration over time	
LnConc.=mTime+b All data r2, m:			**0.067**	**0.00021**
Time	**Ln[COC]**	**[COC]**		
16-May-91	4.70	110		
11-Jan-95	4.98	146		
9-Mar-99	5.31	202		
LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
0-Jan-00	0.00	1		
9-Mar-99	0.00	1		

Load over time analysis

dZn	SF228			
			Load over time	
LnLoad=mTime+b All data r2, m:			**0.168**	**0.00050**
Time	**LnLoad**	**Load**		
16-May-91	3.27	26		
11-Jan-95	3.95	52		
9-Mar-99	4.71	111		
LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
0-Jan-00	0.00	1		
9-Mar-99	0.00	1		

max r2: 0.716 — **Forward time Regression on Ln Concentration(t)**

max r2: 0.741 — **Forward time Regression on Ln Load(t)**

r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.067	0.00021	-2.44	0.168	0.00050	-13.55
0.036	0.00016	-0.54	0.227	0.00062	-17.47
0.004	-0.00004	6.42	0.143	0.00039	-9.58
0.002	-0.00003	6.03	0.130	0.00037	-8.92
0.000	-0.00001	5.53	0.118	0.00035	-8.26
0.000	0.00000	4.98	0.106	0.00033	-7.56
0.001	0.00002	4.38	0.093	0.00031	-6.82
0.002	0.00003	4.09	0.081	0.00029	-5.99
0.004	0.00004	3.77	0.069	0.00027	-5.19
0.007	0.00005	3.26	0.054	0.00023	-3.93
0.012	0.00007	2.69	0.039	0.00020	-2.60
0.015	0.00008	2.33	0.034	0.00018	-2.20
0.023	0.00010	1.62	0.031	0.00018	-1.98
0.023	0.00010	1.59	0.034	0.00019	-2.43
0.012	0.00007	2.60	0.049	0.00023	-3.81
0.004	0.00004	3.66	0.052	0.00024	-4.24
0.000	0.00001	4.72	0.055	0.00025	-4.71
0.000	0.00000	5.16	0.058	0.00027	-5.17
0.001	-0.00002	5.86	0.046	0.00024	-4.23
0.002	-0.00003	6.15	0.031	0.00020	-2.68
0.000	-0.00001	5.40	0.021	0.00017	-1.53
0.000	0.00000	5.08	0.010	0.00011	0.43
0.004	0.00004	3.54	0.006	0.00009	1.23
0.028	0.00011	1.16	0.005	0.00009	1.33
0.048	0.00014	-0.06	0.011	0.00013	-0.10
0.077	0.00018	-1.55	0.018	0.00017	-1.65
0.101	0.00022	-2.70	0.042	0.00026	-4.81
0.124	0.00025	-3.81	0.052	0.00029	-6.16
0.129	0.00026	-4.36	0.062	0.00033	-7.56
0.078	0.00020	-2.02	0.078	0.00039	-9.63
0.037	0.00014	0.22	0.124	0.00051	-14.07
0.010	0.00007	2.45	0.147	0.00060	-17.09
0.000	0.00001	4.72	0.132	0.00061	-17.60
0.007	-0.00007	7.57	0.094	0.00056	-15.90
0.004	-0.00006	7.33	0.059	0.00052	-14.19
0.002	0.00006	3.11	0.029	0.00047	-12.58
0.294	0.00182	-60.31	0.178	-0.00288	108.03
0.716	0.00372	-129.03	0.372	-0.00550	202.53
0.705	0.00389	-135.15	0.269	-0.00440	162.92
0.636	0.00377	-130.90	0.117	-0.00274	102.86
0.492	0.00253	-85.96	0.117	0.00159	-53.50
0.459	0.00276	-94.26	0.741	0.00400	-140.51
0.255	0.00177	-58.43	0.668	0.00397	-139.31

update for EV, CV:

dZn
LN Analysis
SF228
dZn

Load

Load Data, EV=77.3 lbs/day CV=0.937

Avg:	77	**Load Data-based LN**		
SD:	72	u	ln dZn Load	dZn Load
CV:	0.94	3	6.4	611
Min:	1.4	0	4.03	56
Max:	345	-3	1.65	5.2
Median:	56			
		77	77.3	
		0.94	0.937	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.833, EV=89.4lbs/day CV=1.23; max r2=0.96**

r2 u,lnLoad:	0.833	u	lnLoad	Load
slope, m:	1.040	3	6.91	1007
intercept, b:	-4.194	0	4.03	56
N:	47	-3	1.15	3.2
E[Load]:	89.4	Parameter Estimates		
SD[Load]:	110	from LN regression		
CV[Load]:	1.23	update graph label		

						0.833	0.833
						89.4	89.4
						1.2	1.23
						max r2	
	dZn	N: 47				0.960	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**	
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward	
	Ranked						

update and rank for new data.

4-Oct-91	**1.4**	1	0.0132	-2.219	0.304	0.833
15-Feb-94	**25.4**	2	0.0344	-1.820	3.234	0.934
15-Feb-94	**26.7**	3	0.0556	-1.593	3.283	0.941
26-Oct-93	**28.6**	4	0.0767	-1.427	3.355	0.946
30-Nov-93	**29.7**	5	0.0979	-1.294	3.391	0.951
14-Sep-95	**29.9**	6	0.1190	-1.180	3.398	0.955
19-Jan-94	**30.1**	7	0.1402	-1.079	3.406	0.958
20-Dec-93	**30.2**	8	0.1614	-0.989	3.408	0.960
20-Dec-93	**30.7**	9	0.1825	-0.906	3.424	0.960
19-Jan-94	**32.5**	10	0.2037	-0.828	3.483	0.959
23-Jul-94	**32.8**	11	0.2249	-0.756	3.490	0.959
9-Sep-94	**33.7**	12	0.2460	-0.687	3.516	0.958
27-Jul-98	**33.9**	13	0.2672	-0.621	3.523	0.957
25-Aug-98	**34.4**	14	0.2884	-0.558	3.537	0.954
23-Sep-98	**36.7**	15	0.3095	-0.497	3.603	0.951
12-Jul-95	**36.8**	16	0.3307	-0.438	3.606	0.949
24-Jun-94	**39.5**	17	0.3519	-0.380	3.675	0.945
26-Jul-95	**41.1**	18	0.3730	-0.324	3.716	0.942
16-Aug-94	**41.6**	19	0.3942	-0.268	3.729	0.938
28-Jun-95	**46.0**	20	0.4153	-0.214	3.829	0.933
15-Aug-95	**46.1**	21	0.4365	-0.160	3.831	0.929
7-Mar-94	**49.3**	22	0.4577	-0.106	3.898	0.924
15-Nov-94	**54.2**	23	0.4788	-0.053	3.992	0.918
23-Mar-94	**55.6**	24	0.5000	0.000	4.019	0.914
27-Oct-98	**56.1**	25	0.5212	0.053	4.027	0.908
9-Mar-99	**71.3**	26	0.5423	0.106	4.267	0.902
14-Dec-94	**71.5**	27	0.5635	0.160	4.269	0.908
8-Jun-94	**71.5**	28	0.5847	0.214	4.270	0.913
20-May-94	**73.5**	29	0.6058	0.268	4.297	0.916
3-May-94	**73.6**	30	0.6270	0.324	4.299	0.921
13-Jun-95	**73.8**	31	0.6481	0.380	4.302	0.923
24-Nov-98	**75.4**	32	0.6693	0.438	4.323	0.923
7-Nov-97	**76.5**	33	0.6905	0.497	4.338	0.922
6-Apr-94	**80.6**	34	0.7116	0.558	4.390	0.919
25-Apr-95	**82.1**	35	0.7328	0.621	4.407	0.916
25-Jun-98	**84.9**	36	0.7540	0.687	4.442	0.911
8-May-95	**86.8**	37	0.7751	0.756	4.464	0.902
12-Apr-95	**87.4**	38	0.7963	0.828	4.471	0.889
10-Feb-95	**112.4**	39	0.8175	0.906	4.722	0.867
16-May-91	**113.8**	40	0.8386	0.989	4.734	0.862
11-Jan-95	**116.2**	41	0.8598	1.079	4.756	0.845
23-May-95	**116.5**	42	0.8810	1.180	4.758	0.808
18-Apr-94	**125.6**	43	0.9021	1.294	4.833	0.736
22-Mar-95	**165.3**	44	0.9233	1.427	5.108	
24-Apr-98	**284.3**	45	0.9444	1.593	5.650	
10-May-98	**343.4**	46	0.9656	1.820	5.839	
24-Apr-98	**344.8**	47	0.9868	2.219	5.843	

		update for EV, CV:			
dZn		SF228		170	170
LN Analysis		dZn		0.40	0.398
Concentration		Conc. Data, EV=170 ug/L CV=0.398			
Avg:	170	Data-based LN			
SD:	68	u	ln[dZn]	[dZn]	
CV:	0.40	3	6.2	499	
Min:	10	0	5.06	158	
Max:	339	-3	3.91	50	
Median:	182				

u=mLn(Conc.)+b:					0.790	0.79
					188.3	188
update for r2, EV, CV:	r2=0.79, EV=188 ug/L CV=0.741; max r2=0.98				0.741	0.741
r2 u,lnConc:	0.790	u	lnConc.	Conc.		
slope, m:	1.512	3	7.00	1101		
intercept, b:	-7.587	0	5.02	151		
N:	47	-3	3.03	21		
E[Conc]:	188.3	Parameter Estimates				
SD[Conc]:	140	from LN regression				
CV[Conc]:	0.74	update graph label				

Date	dZn Concentration ug/L Ranked	N: 47 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.983 r2 forward
update and rank for new data						
4-Oct-91	10	1	0.0132	-2.219	2.303	0.790
16-May-91	54	2	0.0344	-1.820	3.989	0.946
10-May-98	74.3	3	0.0556	-1.593	4.308	0.950
8-May-95	76	4	0.0767	-1.427	4.331	0.946
18-Apr-94	86	5	0.0979	-1.294	4.454	0.944
3-May-94	89	6	0.1190	-1.180	4.489	0.940
23-May-95	89	7	0.1402	-1.079	4.489	0.937
24-Apr-98	94	8	0.1614	-0.989	4.543	0.938
20-May-94	95	9	0.1825	-0.906	4.554	0.938
13-Jun-95	102	10	0.2037	-0.828	4.625	0.944
24-Apr-98	114	11	0.2249	-0.756	4.736	0.949
28-Jun-95	116	12	0.2460	-0.687	4.754	0.949
24-Jun-94	122	13	0.2672	-0.621	4.804	0.952
12-Jul-95	126	14	0.2884	-0.558	4.836	0.953
27-Jul-98	130	15	0.3095	-0.497	4.868	0.955
8-Jun-94	132	16	0.3307	-0.438	4.883	0.958
25-Apr-95	140	17	0.3519	-0.380	4.942	0.966
6-Apr-94	145	18	0.3730	-0.324	4.977	0.970
23-Jul-94	148	19	0.3942	-0.268	4.997	0.975
25-Aug-98	161	20	0.4153	-0.214	5.081	0.982
25-Jun-98	163	21	0.4365	-0.160	5.094	0.982
12-Apr-95	170	22	0.4577	-0.106	5.136	0.983
26-Jul-95	181	23	0.4788	-0.053	5.198	0.982
7-Mar-94	182	24	0.5000	0.000	5.204	0.982
22-Mar-95	182	25	0.5212	0.053	5.204	0.981
9-Sep-94	183	26	0.5423	0.106	5.209	0.980
23-Sep-98	183	27	0.5635	0.160	5.209	0.978
19-Jan-94	190	28	0.5847	0.214	5.247	0.976
19-Jan-94	190	29	0.6058	0.268	5.247	0.974
7-Nov-97	193	30	0.6270	0.324	5.263	0.972
15-Aug-95	203	31	0.6481	0.380	5.313	0.969
14-Sep-95	208	32	0.6693	0.438	5.338	0.969
11-Jan-95	209	33	0.6905	0.497	5.342	0.971
15-Feb-94	212	34	0.7116	0.558	5.357	0.972
15-Feb-94	212	35	0.7328	0.621	5.357	0.975
10-Feb-95	213	36	0.7540	0.687	5.361	0.974
23-Mar-94	216	37	0.7751	0.756	5.375	0.970
16-Aug-94	221	38	0.7963	0.828	5.398	0.966
26-Oct-93	225	39	0.8175	0.906	5.416	0.960
9-Mar-99	235	40	0.8386	0.989	5.460	0.951
30-Nov-93	239	41	0.8598	1.079	5.476	0.947
20-Dec-93	241	42	0.8810	1.180	5.485	0.938
20-Dec-93	241	43	0.9021	1.294	5.485	0.915
15-Nov-94	277	44	0.9233	1.427	5.624	
24-Nov-98	282	45	0.9444	1.593	5.642	
27-Oct-98	294	46	0.9656	1.820	5.684	
14-Dec-94	339	47	0.9868	2.219	5.826	

update for EV, CV:

dZn		**SF228**			118	118
LN Analysis		**dZn**			1.38	1.38
Discharge, Q		**Q Data, EV=118 cfs CV=1.38**				
Avg:	**118**	**Q Data-based LN**				
SD:	**164**	u	lnQ	Q		
CV:	**1.38**	3	7.3	1541		
Min:	**22**	0	4.24	69		
Max:	**859**	-3	1.14	3		
Median:	**50**					
					0.916	0.916
					114.5	115
	u=mLn(Q)+b:				1.32	1.32

update for r2, EV, CV: **r2=0.916, EV=115 cfs CV=1.32; max r2=0.99**

r2 u,lnQ:	0.916	u	lnQ	Q
slope, m:	0.996	3	7.25	1407
intercept, b:	-4.219	0	4.24	69
N:	47	-3	1.22	3
E[Q]:	114.5	Parameter Estimates		
SD[Q]:	151	from LN regression		
CV[Q]:	1.32	update graph label		

	Q	N: 47				max r2 0.985
Date	**Discharge cfs Ranked**	**i rank**	**i-3/8 / N+1/4 plotting points**	**u y-axis**	**Ln x-axis**	**r2 forward**
update and rank for new data						
15-Feb-94	22.25	1	0.0132	-2.219	3.102	0.916
30-Nov-93	23.09	2	0.0344	-1.820	3.139	0.937
20-Dec-93	23.3	3	0.0556	-1.593	3.148	0.949
15-Feb-94	23.38	4	0.0767	-1.427	3.152	0.957
20-Dec-93	23.66	5	0.0979	-1.294	3.164	0.962
26-Oct-93	23.66	6	0.1190	-1.180	3.164	0.965
4-Oct-91	25.2	7	0.1402	-1.079	3.227	0.966
14-Sep-95	26.73	8	0.1614	-0.989	3.286	0.967
19-Jan-94	29.48	9	0.1825	-0.906	3.384	0.968
19-Jan-94	31.84	10	0.2037	-0.828	3.461	0.970
9-Sep-94	34.18	11	0.2249	-0.756	3.532	0.972
16-Aug-94	35.03	12	0.2460	-0.687	3.556	0.975
27-Oct-98	35.47	13	0.2672	-0.621	3.569	0.978
15-Nov-94	36.36	14	0.2884	-0.558	3.593	0.980
23-Sep-98	37.27	15	0.3095	-0.497	3.618	0.981
14-Dec-94	39.18	16	0.3307	-0.438	3.668	0.983
25-Aug-98	39.67	17	0.3519	-0.380	3.681	0.984
23-Jul-94	41.18	18	0.3730	-0.324	3.718	0.984
15-Aug-95	42.22	19	0.3942	-0.268	3.743	0.985
26-Jul-95	42.22	20	0.4153	-0.214	3.743	0.984
23-Mar-94	47.87	21	0.4365	-0.160	3.868	0.984
27-Jul-98	48.47276685	22	0.4577	-0.106	3.881	0.984
24-Nov-98	49.70988462	23	0.4788	-0.053	3.906	0.983
7-Mar-94	50.34	24	0.5000	0.000	3.919	0.982
12-Jul-95	54.31	25	0.5212	0.053	3.995	0.980
9-Mar-99	56.4129156	26	0.5423	0.106	4.033	0.978
24-Jun-94	60.11	27	0.5635	0.160	4.096	0.977
7-Nov-97	73.7	28	0.5847	0.214	4.300	0.975
28-Jun-95	73.77	29	0.6058	0.268	4.301	0.973
12-Apr-95	95.58	30	0.6270	0.324	4.560	0.971
25-Jun-98	96.83695513	31	0.6481	0.380	4.573	0.974
10-Feb-95	98.11	32	0.6693	0.438	4.586	0.976
8-Jun-94	100.71	33	0.6905	0.497	4.612	0.976
6-Apr-94	103.37	34	0.7116	0.558	4.638	0.975
11-Jan-95	103.37	35	0.7328	0.621	4.638	0.972
25-Apr-95	108.94	36	0.7540	0.687	4.691	0.969
13-Jun-95	134.54	37	0.7751	0.756	4.902	0.965
20-May-94	143.78	38	0.7963	0.828	4.968	0.959
3-May-94	153.69	39	0.8175	0.906	5.035	0.951
22-Mar-95	168.78	40	0.8386	0.989	5.129	0.942
8-May-95	212.3	41	0.8598	1.079	5.358	0.934
23-May-95	243.28	42	0.8810	1.180	5.494	0.915
18-Apr-94	271.47	43	0.9021	1.294	5.604	0.888
16-May-91	391.6	44	0.9233	1.427	5.970	
24-Apr-98	562.1878832	45	0.9444	1.593	6.332	
24-Apr-98	562.1878832	46	0.9656	1.820	6.332	
10-May-98	859	47	0.9868	2.219	6.756	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.		see comment
Station:	SF228	Date: 13-Jun-00
Chemical:	tCd	Analyst: JMacLachlan
Notes:		

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,875	118	1	1	0.00	0.00	0.00
SD:	691	164	1	1	1.00	1.00	1.00
CV:	0.02	1.38	0.47	1.32			
Min:	33,374	22	0.3	0.1	-0.59	-1.54	-0.64
Max:	36,228	859	3	4	4.53	3.86	4.35
Median:	34,710	50	1	0.3	-0.42	-0.27	-0.38

tCd	SF228		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.0438)		update r2	0.04	0.0438	r2:	0.061	0.046
r2 Q,[COC]:	0.04	[tCd]	Q		m:	0.0586	0.00029
slope, m:	-0.001	1	22.3		b:	-1924	-5.89
intercept, b:	1.2	1	118.3				
N:	47	1	859				
LnConc. = mLn(Q)+b (r2=0.112)		update r2	0.11	0.112			
r2 lnQ,ln[COC]:	0.11	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.15	0.21	3.10	1	22		
intercept, b:	0.67	-0.03	4.77	1	118		
N:	47	-0.33	6.76	1	859		

N= 47

	Sampling Date	Q Discharge cfs	tCd Concentration ug/L	tCd Load lbs/day	Ln Q	Ln tCd Conc.	Ln tCd Load	tCd SF228 Standardized Values = (x - Avg)/SD Q	Conc	Load	for graph 0
update for new data											
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis				
MFG	16-May-91	391.6	0.4	0.8	5.97	-0.92	-0.17	1.67	-1.39	0.26	
MFG	4-Oct-91	25.2	0.7	0.1	3.23	-0.36	-2.35	-0.57	-0.83	-0.64	
IDEQ	26-Oct-93	23.66	1.1	0.1	3.16	0.10	-1.97	-0.58	-0.08	-0.59	
IDEQ	30-Nov-93	23.09	1.2	0.1	3.14	0.18	-1.90	-0.58	0.11	-0.58	
IDEQ	20-Dec-93	23.66	2.5	0.3	3.16	0.92	-1.14	-0.58	2.55	-0.38	
IDEQ	20-Dec-93	23.3	2.5	0.3	3.15	0.92	-1.16	-0.58	2.55	-0.38	
IDEQ	19-Jan-94	29.48	1	0.2	3.38	0.00	-1.84	-0.54	-0.27	-0.57	
IDEQ	19-Jan-94	31.84	1	0.2	3.46	0.00	-1.76	-0.53	-0.27	-0.55	
IDEQ	15-Feb-94	23.38	0.9	0.1	3.15	-0.11	-2.18	-0.58	-0.46	-0.62	
IDEQ	15-Feb-94	22.25	0.9	0.1	3.10	-0.11	-2.23	-0.59	-0.46	-0.63	
IDEQ	7-Mar-94	50.34	0.9	0.2	3.92	-0.11	-1.41	-0.42	-0.46	-0.47	
IDEQ	23-Mar-94	47.87	1	0.3	3.87	0.00	-1.36	-0.43	-0.27	-0.45	
IDEQ	6-Apr-94	103.37	0.8	0.4	4.64	-0.22	-0.81	-0.09	-0.64	-0.22	
IDEQ	18-Apr-94	271.47	1.2	1.8	5.60	0.18	0.56	0.94	0.11	1.36	
IDEQ	3-May-94	153.69	0.6	0.5	5.03	-0.51	-0.70	0.22	-1.02	-0.16	
IDEQ	20-May-94	143.78	0.9	0.7	4.97	-0.11	-0.36	0.16	-0.46	0.08	
IDEQ	8-Jun-94	100.71	0.7	0.4	4.61	-0.36	-0.97	-0.11	-0.83	-0.30	
IDEQ	24-Jun-94	60.11	0.8	0.3	4.10	-0.22	-1.35	-0.36	-0.64	-0.45	
IDEQ	23-Jul-94	41.18	1	0.2	3.72	0.00	-1.51	-0.47	-0.27	-0.49	
IDEQ	16-Aug-94	35.03	1.6	0.3	3.56	0.47	-1.20	-0.51	0.86	-0.40	
IDEQ	9-Sep-94	34.18	0.9	0.2	3.53	-0.11	-1.80	-0.51	-0.46	-0.56	
IDEQ	15-Nov-94	36.36	1.2	0.2	3.59	0.18	-1.45	-0.50	0.11	-0.48	
IDEQ	14-Dec-94	39.18	1.7	0.4	3.67	0.53	-1.03	-0.48	1.05	-0.33	
IDEQ	11-Jan-95	103.37	1.1	0.6	4.64	0.10	-0.49	-0.09	-0.08	-0.02	
IDEQ	10-Feb-95	98.11	0.9	0.5	4.59	-0.11	-0.74	-0.12	-0.46	-0.19	
IDEQ	22-Mar-95	168.78	1	0.9	5.13	0.00	-0.10	0.31	-0.27	0.34	
IDEQ	12-Apr-95	95.58	1.4	0.7	4.56	0.34	-0.33	-0.14	0.48	0.11	
IDEQ	25-Apr-95	108.94	0.8	0.5	4.69	-0.22	-0.76	-0.06	-0.64	-0.19	
IDEQ	8-May-95	212.3	1.9	2.2	5.36	0.64	0.77	0.57	1.42	1.86	
IDEQ	23-May-95	243.28	1.2	1.6	5.49	0.18	0.45	0.76	0.11	1.14	
IDEQ	13-Jun-95	134.54	0.9	0.7	4.90	-0.11	-0.43	0.10	-0.46	0.03	
IDEQ	28-Jun-95	73.77	0.7	0.3	4.30	-0.36	-1.28	-0.27	-0.83	-0.42	
IDEQ	12-Jul-95	54.31	0.9	0.3	3.99	-0.11	-1.34	-0.39	-0.46	-0.44	
IDEQ	26-Jul-95	42.22	1	0.2	3.74	0.00	-1.48	-0.47	-0.27	-0.49	
IDEQ	15-Aug-95	42.22	1	0.2	3.74	0.00	-1.48	-0.47	-0.27	-0.49	
IDEQ	14-Sep-95	26.73	1.1	0.2	3.29	0.10	-1.84	-0.56	-0.08	-0.57	
URS	7-Nov-97	73.7	0.88	0.3	4.30	-0.13	-1.05	-0.27	-0.49	-0.34	
IDEQ	24-Apr-98	562.1878832	1.2	3.6	6.33	0.18	1.29	2.71	0.11	3.62	
IDEQ	24-Apr-98	562.1878832	1.4	4.2	6.33	0.34	1.44	2.71	0.48	4.35	
URS	10-May-98	859	0.32	1.5	6.76	-1.14	0.39	4.53	-1.54	1.03	
IDEQ	25-Jun-98	96.83695513	0.9	0.5	4.57	-0.11	-0.76	-0.13	-0.46	-0.19	
IDEQ	27-Jul-98	48.47276685	1	0.3	3.88	0.00	-1.34	-0.43	-0.27	-0.44	
IDEQ	25-Aug-98	39.66786319	1	0.2	3.68	0.00	-1.54	-0.48	-0.27	-0.50	
IDEQ	23-Sep-98	37.27465155	1.2	0.2	3.62	0.18	-1.42	-0.50	0.11	-0.47	
IDEQ	27-Oct-98	35.4694727	1.1	0.2	3.57	0.10	-1.56	-0.51	-0.08	-0.51	
IDEQ	24-Nov-98	49.70988462	2.1	0.6	3.91	0.74	-0.58	-0.42	1.80	-0.08	
IDEQ	9-Mar-99	56.4129156	3.2	1.0	4.03	1.16	-0.03	-0.38	3.86	0.41	

tCd

Concentration over time analysis

	tCd	SF228		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.050**	**0.00013**
	Time	**Ln[COC]**	**[COC]**		
first:	16-May-91	-0.15	1		
mid:	11-Jan-95	0.02	1		
last:	9-Mar-99	0.23	1		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Mar-99	0.00	1		

Load over time analysis

	tCd	SF228		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.109**	**0.00042**
	Time	**LnLoad**	**Load**		
first:	16-May-91	-1.58	0		
mid:	11-Jan-95	-1.01	0		
last:	9-Mar-99	-0.37	1		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Mar-99	0.00	1		

	max r2: 0.883			max r2: 0.843		
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.050	0.00013	-4.58	0.109	0.00042	-15.70
	0.016	0.00007	-2.54	0.157	0.00053	-19.47
	0.007	0.00005	-1.66	0.122	0.00048	-17.66
	0.007	0.00005	-1.73	0.109	0.00045	-16.67
	0.008	0.00006	-1.92	0.097	0.00042	-15.70
	0.023	0.00009	-3.15	0.095	0.00042	-15.72
	0.052	0.00013	-4.52	0.092	0.00042	-15.71
	0.053	0.00013	-4.59	0.081	0.00039	-14.67
	0.053	0.00013	-4.68	0.069	0.00037	-13.64
	0.050	0.00013	-4.60	0.053	0.00032	-11.86
	0.047	0.00013	-4.51	0.037	0.00026	-9.79
	0.044	0.00013	-4.40	0.030	0.00023	-8.93
	0.044	0.00013	-4.48	0.024	0.00021	-8.08
	0.036	0.00012	-4.13	0.024	0.00021	-8.16
	0.042	0.00013	-4.55	0.046	0.00029	-10.96
	0.027	0.00010	-3.57	0.048	0.00030	-11.47
	0.023	0.00010	-3.34	0.059	0.00034	-12.78
	0.013	0.00007	-2.51	0.057	0.00034	-12.84
	0.008	0.00006	-1.88	0.047	0.00032	-11.97
	0.006	0.00005	-1.73	0.036	0.00028	-10.56
	0.015	0.00008	-2.82	0.029	0.00026	-9.75
	0.011	0.00007	-2.43	0.015	0.00018	-7.07
	0.014	0.00008	-2.81	0.007	0.00013	-5.12
	0.031	0.00012	-4.29	0.004	0.00010	-4.12
	0.034	0.00013	-4.62	0.005	0.00011	-4.65
	0.028	0.00012	-4.31	0.004	0.00011	-4.40
	0.026	0.00012	-4.30	0.009	0.00016	-6.41
	0.041	0.00016	-5.60	0.014	0.00021	-7.94
	0.029	0.00014	-4.78	0.013	0.00021	-7.99
	0.078	0.00023	-8.00	0.055	0.00042	-15.61
	0.102	0.00027	-9.66	0.128	0.00065	-23.95
	0.096	0.00028	-9.99	0.174	0.00081	-29.52
	0.060	0.00024	-8.34	0.161	0.00084	-30.66
	0.049	0.00024	-8.35	0.142	0.00087	-31.82
	0.050	0.00028	-10.01	0.105	0.00086	-31.52
	0.059	0.00041	-14.49	0.057	0.00082	-30.18
	0.366	0.00264	-94.91	0.059	-0.00205	73.43
	0.467	0.00391	-140.69	0.233	-0.00531	190.87
	0.566	0.00469	-168.70	0.125	-0.00361	129.37
	0.859	0.00653	-235.29	0.000	0.00002	-1.53
	0.874	0.00515	-185.59	0.377	0.00422	-153.14
	0.876	0.00562	-202.47	0.754	0.00686	-248.73
	0.883	0.00620	-223.60	0.843	0.00840	-304.49

update for EV, CV:

tCd
LN Analysis
SF228
tCd

Load

Load Data, EV=0.629 lbs/day CV=1.32

		Load Data-based LN		
Avg:	**1**	u	ln tCd Load	tCd Load
SD:	**1**	3	2.0	8
CV:	**1.32**	0	-0.97	0.38
Min:	**0.1**	-3	-3.98	0.02
Max:	**4**			
Median:	**0.3**			

1	0.629
1.32	1.32

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.941, EV=0.606lbs/day CV=1.19; max r2=0.99**

r2 u,lnLoad:	0.941	u	lnLoad	Load
slope, m:	1.065	3	1.87	7
intercept, b:	1.004	0	-0.94	0.39
N:	47	-3	-3.76	0.02
E[Load]:	0.6	Parameter Estimates		
SD[Load]:	1	from LN regression		
CV[Load]:	1.19	update graph label		

							0.941	0.941
							0.6	0.606
							1.2	1.19
							max r2	
	tCd	N: 47					0.986	
	Lead	i	i-3/8 / N+1/4	u	Ln		r2	
Date	lbs/day	rank	plotting points	y-axis	x-axis		forward	
	Ranked							
update and rank for new data								
4-Oct-91	0.1	1	0.0132	-2.219	-2.355		0.941	
15-Feb-94	0.1	2	0.0344	-1.820	-2.228		0.948	
15-Feb-94	0.1	3	0.0556	-1.593	-2.179		0.950	
26-Oct-93	0.1	4	0.0767	-1.427	-1.966		0.950	
30-Nov-93	0.1	5	0.0979	-1.294	-1.903		0.953	
14-Sep-95	0.2	6	0.1190	-1.180	-1.844		0.956	
19-Jan-94	0.2	7	0.1402	-1.079	-1.841		0.958	
9-Sep-94	0.2	8	0.1614	-0.989	-1.799		0.959	
19-Jan-94	0.2	9	0.1825	-0.906	-1.764		0.960	
27-Oct-98	0.2	10	0.2037	-0.828	-1.561		0.960	
25-Aug-98	0.2	11	0.2249	-0.756	-1.545		0.964	
23-Jul-94	0.2	12	0.2460	-0.687	-1.507		0.967	
26-Jul-95	0.2	13	0.2672	-0.621	-1.482		0.971	
15-Aug-95	0.2	14	0.2884	-0.558	-1.482		0.975	
15-Nov-94	0.2	15	0.3095	-0.497	-1.449		0.977	
23-Sep-98	0.2	16	0.3307	-0.438	-1.424		0.980	
7-Mar-94	0.2	17	0.3519	-0.380	-1.412		0.982	
23-Mar-94	0.3	18	0.3730	-0.324	-1.357		0.983	
24-Jun-94	0.3	19	0.3942	-0.268	-1.352		0.985	
27-Jul-98	0.3	20	0.4153	-0.214	-1.344		0.986	
12-Jul-95	0.3	21	0.4365	-0.160	-1.336		0.986	
28-Jun-95	0.3	22	0.4577	-0.106	-1.281		0.985	
16-Aug-94	0.3	23	0.4788	-0.053	-1.199		0.985	
20-Dec-93	0.3	24	0.5000	0.000	-1.160		0.985	
20-Dec-93	0.3	25	0.5212	0.053	-1.145		0.984	
7-Nov-97	0.3	26	0.5423	0.106	-1.053		0.983	
14-Dec-94	0.4	27	0.5635	0.160	-1.026		0.983	
8-Jun-94	0.4	28	0.5847	0.214	-0.969		0.981	
6-Apr-94	0.4	29	0.6058	0.268	-0.810		0.980	
25-Apr-95	0.5	30	0.6270	0.324	-0.757		0.981	
25-Jun-98	0.5	31	0.6481	0.380	-0.757		0.982	
10-Feb-95	0.5	32	0.6693	0.438	-0.744		0.981	
3-May-94	0.5	33	0.6905	0.497	-0.701		0.979	
24-Nov-98	0.6	34	0.7116	0.558	-0.577		0.976	
11-Jan-95	0.6	35	0.7328	0.621	-0.491		0.973	
13-Jun-95	0.7	36	0.7540	0.687	-0.429		0.970	
20-May-94	0.7	37	0.7751	0.756	-0.362		0.966	
12-Apr-95	0.7	38	0.7963	0.828	-0.329		0.960	
16-May-91	0.8	39	0.8175	0.906	-0.171		0.954	
22-Mar-95	0.9	40	0.8386	0.989	-0.096		0.943	
9-Mar-99	1.0	41	0.8598	1.079	-0.029		0.932	
10-May-98	1.5	42	0.8810	1.180	0.391		0.938	
23-May-95	1.6	43	0.9021	1.294	0.451		0.923	
18-Apr-94	1.8	44	0.9233	1.427	0.561			
8-May-95	2.2	45	0.9444	1.593	0.775			
24-Apr-98	3.6	46	0.9656	1.820	1.289			
24-Apr-98	4.2	47	0.9868	2.219	1.443			

update for EV, CV:

tCd		**SF228**		1	1.14
LN Analysis		**tCd**		0.47	0.466
Concentration		**Conc. Data, EV=1.14 ug/L CV=0.466**			
Avg:	1	**Data-based LN**			
SD:	1	u	ln[tCd]	[tCd]	
CV:	0.47	3	1.4	4	
Min:	0.3	0	0.03	1	
Max:	3	-3	-1.30	0.3	
Median:	1				

				0.913	0.913
u=mLn(Conc.)+b:				1.2	1.15
update for r2, EV, CV:	**r2=0.913, EV=1.15 ug/L CV=0.465; max r2=0.97**			0.465	0.465
	r2 u,lnConc:	0.913	u	lnConc.	Conc.
	slope, m:	2.260	3	1.37	4
	intercept, b:	-0.103	0	0.05	1
	N: 47		-3	-1.28	0
	E[Conc]:	1.2	Parameter Estimates		
	SD[Conc]:	1	from LN regression		
	CV[Conc]:	0.47	update graph label		

	tCd	N: 47				max r2 0.969
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
10-May-98	0.32	1	0.0132	-2.219	-1.139	0.913
16-May-91	0.4	2	0.0344	-1.820	-0.916	0.909
3-May-94	0.6	3	0.0556	-1.593	-0.511	0.907
4-Oct-91	0.7	4	0.0767	-1.427	-0.357	0.900
8-Jun-94	0.7	5	0.0979	-1.294	-0.357	0.898
28-Jun-95	0.7	6	0.1190	-1.180	-0.357	0.895
6-Apr-94	0.8	7	0.1402	-1.079	-0.223	0.890
24-Jun-94	0.8	8	0.1614	-0.989	-0.223	0.892
25-Apr-95	0.8	9	0.1825	-0.906	-0.223	0.892
7-Nov-97	0.88	10	0.2037	-0.828	-0.128	0.891
15-Feb-94	0.9	11	0.2249	-0.756	-0.105	0.897
15-Feb-94	0.9	12	0.2460	-0.687	-0.105	0.904
7-Mar-94	0.9	13	0.2672	-0.621	-0.105	0.911
20-May-94	0.9	14	0.2884	-0.558	-0.105	0.916
9-Sep-94	0.9	15	0.3095	-0.497	-0.105	0.921
10-Feb-95	0.9	16	0.3307	-0.438	-0.105	0.924
13-Jun-95	0.9	17	0.3519	-0.380	-0.105	0.927
12-Jul-95	0.9	18	0.3730	-0.324	-0.105	0.928
25-Jun-98	0.9	19	0.3942	-0.268	-0.105	0.928
19-Jan-94	1	20	0.4153	-0.214	0.000	0.927
19-Jan-94	1	21	0.4365	-0.160	0.000	0.934
23-Mar-94	1	22	0.4577	-0.106	0.000	0.941
23-Jul-94	1	23	0.4788	-0.053	0.000	0.948
22-Mar-95	1	24	0.5000	0.000	0.000	0.952
26-Jul-95	1	25	0.5212	0.053	0.000	0.956
15-Aug-95	1	26	0.5423	0.106	0.000	0.959
27-Jul-98	1	27	0.5635	0.160	0.000	0.960
25-Aug-98	1	28	0.5847	0.214	0.000	0.959
26-Oct-93	1.1	29	0.6058	0.268	0.095	0.956
11-Jan-95	1.1	30	0.6270	0.324	0.095	0.961
14-Sep-95	1.1	31	0.6481	0.380	0.095	0.963
27-Oct-98	1.1	32	0.6693	0.438	0.095	0.964
30-Nov-93	1.2	33	0.6905	0.497	0.182	0.961
18-Apr-94	1.2	34	0.7116	0.558	0.182	0.967
15-Nov-94	1.2	35	0.7328	0.621	0.182	0.969
23-May-95	1.2	36	0.7540	0.687	0.182	0.968
24-Apr-98	1.2	37	0.7751	0.756	0.182	0.964
23-Sep-98	1.2	38	0.7963	0.828	0.182	0.958
12-Apr-95	1.4	39	0.8175	0.906	0.336	0.961
24-Apr-98	1.4	40	0.8386	0.989	0.336	0.953
16-Aug-94	1.6	41	0.8598	1.079	0.470	0.957
14-Dec-94	1.7	42	0.8810	1.180	0.531	0.947
8-May-95	1.9	43	0.9021	1.294	0.642	0.941
24-Nov-98	2.1	44	0.9233	1.427	0.742	
20-Dec-93	2.5	45	0.9444	1.593	0.916	
20-Dec-93	2.5	46	0.9656	1.820	0.916	
9-Mar-99	3.2	47	0.9868	2.219	1.163	

update for EV, CV:

tCd		**SF228**			118	118
LN Analysis		**tCd**			1.38	1.38
Discharge, Q		**Q Data, EV=118 cfs CV=1.38**				
Avg:	**118**	**Q Data-based LN**				
SD:	**164**	u	lnQ	Q		
CV:	**1.38**	3	7.3	1541		
Min:	**22**	0	4.24	69		
Max:	**859**	-3	1.14	3		
Median:	**50**					
					0.913	0.913
					1.2	1.15
	u=mLn{Q}+b:				0.47	0.465

update for r2, EV, CV: **r2=0.913, EV=1.15 cfs CV=0.465; max r2=0.97**

r2 u,lnQ:	0.913	u	lnQ	Q
slope, m:	2.260	3	1.37	4
intercept, b:	-0.103	0	0.05	1
N:	47	-3	-1.28	0
E[Q]:	1.2	Parameter Estimates		
SD[Q]:	1	from LN regression		
CV[Q]:	0.47	update graph label		

	Q	N: 47				max r2 0.969
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
15-Feb-94	22.25	1	0.0132	-2.219	-1.139	0.913
30-Nov-93	23.09	2	0.0344	-1.820	-0.916	0.909
20-Dec-93	23.3	3	0.0556	-1.593	-0.511	0.907
15-Feb-94	23.38	4	0.0767	-1.427	-0.357	0.900
26-Oct-93	23.66	5	0.0979	-1.294	-0.357	0.898
20-Dec-93	23.66	6	0.1190	-1.180	-0.357	0.895
4-Oct-91	25.2	7	0.1402	-1.079	-0.223	0.890
14-Sep-95	26.73	8	0.1614	-0.989	-0.223	0.892
19-Jan-94	29.48	9	0.1825	-0.906	-0.223	0.892
19-Jan-94	31.84	10	0.2037	-0.828	-0.128	0.891
9-Sep-94	34.18	11	0.2249	-0.756	-0.105	0.897
16-Aug-94	35.03	12	0.2460	-0.687	-0.105	0.904
27-Oct-98	35.4694727	13	0.2672	-0.621	-0.105	0.911
15-Nov-94	36.36	14	0.2884	-0.558	-0.105	0.916
23-Sep-98	37.27465155	15	0.3095	-0.497	-0.105	0.921
14-Dec-94	39.18	16	0.3307	-0.438	-0.105	0.924
25-Aug-98	39.66786319	17	0.3519	-0.380	-0.105	0.927
23-Jul-94	41.18	18	0.3730	-0.324	-0.105	0.928
26-Jul-95	42.22	19	0.3942	-0.268	-0.105	0.928
15-Aug-95	42.22	20	0.4153	-0.214	0.000	0.927
23-Mar-94	47.87	21	0.4365	-0.160	0.000	0.934
27-Jul-98	48.47276685	22	0.4577	-0.106	0.000	0.941
24-Nov-98	49.70988462	23	0.4788	-0.053	0.000	0.948
7-Mar-94	50.34	24	0.5000	0.000	0.000	0.952
12-Jul-95	54.31	25	0.5212	0.053	0.000	0.956
9-Mar-99	56.4129156	26	0.5423	0.106	0.000	0.959
24-Jun-94	60.11	27	0.5635	0.160	0.000	0.960
7-Nov-97	73.7	28	0.5847	0.214	0.000	0.959
28-Jun-95	73.77	29	0.6058	0.268	0.095	0.956
12-Apr-95	95.58	30	0.6270	0.324	0.095	0.961
25-Jun-98	96.83695513	31	0.6481	0.380	0.095	0.963
10-Feb-95	98.11	32	0.6693	0.438	0.095	0.964
8-Jun-94	100.71	33	0.6905	0.497	0.182	0.961
6-Apr-94	103.37	34	0.7116	0.558	0.182	0.967
11-Jan-95	103.37	35	0.7328	0.621	0.182	0.969
25-Apr-95	108.94	36	0.7540	0.687	0.182	0.968
13-Jun-95	134.54	37	0.7751	0.756	0.182	0.964
20-May-94	143.78	38	0.7963	0.828	0.182	0.958
3-May-94	153.69	39	0.8175	0.906	0.336	0.961
22-Mar-95	168.78	40	0.8386	0.989	0.336	0.953
8-May-95	212.3	41	0.8598	1.079	0.470	0.957
23-May-95	243.28	42	0.8810	1.180	0.531	0.947
18-Apr-94	271.47	43	0.9021	1.294	0.642	0.941
16-May-91	391.6	44	0.9233	1.427	0.742	
24-Apr-98	562.1878832	45	0.9444	1.593	0.916	
24-Apr-98	562.1878832	46	0.9656	1.820	0.916	
10-May-98	859	47	0.9868	2.219	1.163	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF228	**Date:**	13-Jun-00
Chemical:	tPb	**Analyst:**	JMacLachlan
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	34,853	109	11	11	0.00	0.00	0.00
SD:	681	152	10	28	1.00	1.00	1.00
CV:	0.02	1.39	0.95	2.55			
Min:	33,374	22	5	0.6	-0.57	-0.57	-0.37
Max:	36,228	859	52	157	4.95	4.00	5.31
Median:	34,696	50	7	3	-0.39	-0.34	-0.30

tPb SF228			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.164)		update r2	0.16	0.164	r2:	0.032	0.024
r2 Q,[COC]:	0.16	[tPb]	Q		m:	0.0396	0.00020
slope, m:	0.03	8	22.3		b:	-1271	-2.83
intercept, b:	7.8	11	108.6				
N:	37	29	859				
LnConc. = mLn(Q)+b (r2=0.172)		update r2	0.17	0.172			
r2 lnQ,ln[COC]:	0.17	ln[tPb]	ln Q	[tPb]	Q		
slope, m:	0.24	1.89	3.10	7	22		
intercept, b:	1.13	2.27	4.69	10	109		
N:	37	2.78	6.76	16	859		

N= 46

	Sampling Date	Q Discharge cfs	tPb Concentration ug/L	tPb Load lbs/day	Ln Q	Ln tPb Conc.	Ln tPb Load	tPb for graph 0 SF228 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data										
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	16-May-91	391.6	10	21.1	5.97	2.30	3.05	1.87	-0.08	0.37
MFG	4-Oct-91	25.2	11	1.5	3.23	2.40	0.40	-0.55	0.01	-0.34
IDEQ	26-Oct-93	23.66	5	0.6	3.16	1.61	-0.45	-0.56	-0.57	-0.37
IDEQ	30-Nov-93	23.09	11	1.4	3.14	2.40	0.31	-0.56	0.01	-0.34
IDEQ	*20-Dec-93*	*23.66*			3.16			-0.56		
IDEQ	*20-Dec-93*	*23.3*			3.15			-0.56		
IDEQ	*19-Jan-94*	*29.48*			3.38			-0.52		
IDEQ	*19-Jan-94*	*31.84*			3.46			-0.51		
IDEQ	15-Feb-94	23.38	7	0.9	3.15	1.95	-0.13	-0.56	-0.37	-0.36
IDEQ	15-Feb-94	22.25	7	0.8	3.10	1.95	-0.18	-0.57	-0.37	-0.36
IDEQ	7-Mar-94	50.34	8	2.2	3.92	2.08	0.77	-0.38	-0.28	-0.31
IDEQ	23-Mar-94	47.87	6	1.5	3.87	1.79	0.44	-0.40	-0.47	-0.34
IDEQ	6-Apr-94	103.37	12	6.7	4.64	2.48	1.90	-0.03	0.11	-0.15
IDEQ	18-Apr-94	271.47	52	75.9	5.60	3.95	4.33	1.07	4.00	2.36
IDEQ	3-May-94	153.69	7	5.8	5.03	1.95	1.76	0.30	-0.37	-0.18
IDEQ	20-May-94	143.78	15	11.6	4.97	2.71	2.45	0.23	0.40	0.03
IDEQ	8-Jun-94	100.71	6	3.3	4.61	1.79	1.18	-0.05	-0.47	-0.27
IDEQ	24-Jun-94	60.11	7	2.3	4.10	1.95	0.82	-0.32	-0.37	-0.31
IDEQ	*23-Jul-94*	*41.18*			3.72			-0.45		
IDEQ	16-Aug-94	35.03	7	1.3	3.56	1.95	0.28	-0.49	-0.37	-0.35
IDEQ	9-Sep-94	34.18	6	1.1	3.53	1.79	0.10	-0.49	-0.47	-0.35
IDEQ	*15-Nov-94*	*36.36*			3.59			-0.48		
IDEQ	14-Dec-94	39.18	8	1.7	3.67	2.08	0.52	-0.46	-0.28	-0.33
IDEQ	11-Jan-95	103.37	15	8.3	4.64	2.71	2.12	-0.03	0.40	-0.09
IDEQ	10-Feb-95	98.11	6	3.2	4.59	1.79	1.15	-0.07	-0.47	-0.28
IDEQ	*22-Mar-95*	*168.78*			5.13			0.40		
IDEQ	12-Apr-95	95.58	7	3.6	4.56	1.95	1.28	-0.09	-0.37	-0.26
IDEQ	25-Apr-95	108.94	9	5.3	4.69	2.20	1.66	0.00	-0.18	-0.20
IDEQ	8-May-95	212.3	16	18.3	5.36	2.77	2.91	0.68	0.50	0.27
IDEQ	23-May-95	243.28	10	13.1	5.49	2.30	2.57	0.89	-0.08	0.08
IDEQ	13-Jun-95	134.54	6	4.3	4.90	1.79	1.47	0.17	-0.47	-0.24
IDEQ	*28-Jun-95*	*73.77*			4.30			-0.23		
IDEQ	12-Jul-95	54.31	7	2.0	3.99	1.95	0.72	-0.36	-0.37	-0.32
IDEQ	*26-Jul-95*	*42.22*			3.74			-0.44		
IDEQ	15-Aug-95	42.22	5	1.1	3.74	1.61	0.13	-0.44	-0.57	-0.35
IDEQ	14-Sep-95	26.73	5	0.7	3.29	1.61	-0.33	-0.54	-0.57	-0.37
URS	7-Nov-97	73.7	7.3	2.9	4.30	1.99	1.06	-0.23	-0.34	-0.29
IDEQ	24-Apr-98	562.1878832	52	157.3	6.33	3.95	5.06	2.99	4.00	5.31
URS	10-May-98	859	5.1	23.6	6.76	1.63	3.16	4.95	-0.56	0.46
IDEQ	25-Jun-98	96.83695513	5	2.6	4.57	1.61	0.96	-0.08	-0.57	-0.30
IDEQ	27-Jul-98	48.47276685	10	2.6	3.88	2.30	0.96	-0.40	-0.08	-0.30
IDEQ	25-Aug-98	39.66786319	7	1.5	3.68	1.95	0.40	-0.46	-0.37	-0.34
IDEQ	23-Sep-98	37.27465155	12	2.4	3.62	2.48	0.88	-0.47	0.11	-0.31
IDEQ	27-Oct-98	35.4694727	8	1.5	3.57	2.08	0.42	-0.48	-0.28	-0.34
IDEQ	24-Nov-98	49.70988462	15	4.0	3.91	2.71	1.39	-0.39	0.40	-0.25
IDEQ	9-Mar-99	56.4129156	9	2.7	4.03	2.20	1.00	-0.34	-0.18	-0.29

tPb

Concentration over time analysis r2 Slope, m

	tPb SF228			Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.003	0.00004
	Time	Ln[COC]	[COC]		
first:	16-May-91	2.12	8		
mid:	28-Dec-94	2.17	9		
last:	9-Mar-99	2.23	9		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Mar-99	0.00	1		

Lead over time analysis

	tPb SF228			Lead over time	
	LnLead=mTime+b All data r2, m:			0.007	0.00014
	Time	LnLead	Lead		
first:	16-May-91	1.05	3		
mid:	28-Dec-94	1.23	3		
last:	9-Mar-99	1.43	4		
	LnLead=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Mar-99	0.00	1		

max r2: 0.361 max r2: 0.375

Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Lead(t)		
r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.003	0.00004	0.88	0.007	0.00014	-3.50
0.005	0.00005	0.30	0.033	0.00032	-9.92
0.010	0.00008	-0.73	0.024	0.00028	-8.73
0.005	0.00006	0.19	0.013	0.00021	-6.03
0.007	0.00007	-0.28	0.008	0.00017	-4.50
0.007	0.00007	-0.28	0.008	0.00017	-4.50
0.007	0.00007	-0.28	0.008	0.00017	-4.50
0.007	0.00007	-0.28	0.008	0.00017	-4.50
0.007	0.00007	-0.28	0.008	0.00017	-4.50
0.005	0.00006	0.06	0.003	0.00010	-2.12
0.003	0.00005	0.44	0.000	0.00002	0.69
0.003	0.00005	0.61	0.000	-0.00001	1.92
0.001	0.00002	1.41	0.002	-0.00007	4.04
0.002	0.00004	0.76	0.001	-0.00005	3.17
0.043	0.00016	-3.51	0.007	0.00014	-3.68
0.038	0.00015	-3.31	0.010	0.00018	-5.04
0.068	0.00021	-5.18	0.024	0.00028	-8.54
0.057	0.00019	-4.66	0.024	0.00029	-8.89
0.051	0.00019	-4.51	0.019	0.00027	-8.11
0.051	0.00019	-4.51	0.019	0.00027	-8.11
0.045	0.00018	-4.31	0.009	0.00019	-5.29
0.032	0.00016	-3.46	0.001	0.00007	-1.12
0.032	0.00016	-3.46	0.001	0.00007	-1.12
0.031	0.00016	-3.53	0.000	-0.00002	2.01
0.064	0.00024	-6.18	0.001	0.00006	-0.72
0.048	0.00021	-5.32	0.000	0.00003	0.27
0.048	0.00021	-5.32	0.000	0.00003	0.27
0.040	0.00020	-4.94	0.000	0.00002	0.88
0.046	0.00023	-5.85	0.000	0.00005	-0.47
0.115	0.00037	-11.01	0.019	0.00034	-10.82
0.161	0.00048	-14.85	0.073	0.00070	-23.70
0.141	0.00049	-15.47	0.109	0.00095	-32.84
0.141	0.00049	-15.47	0.109	0.00095	-32.84
0.147	0.00059	-18.98	0.105	0.00110	-38.17
0.147	0.00059	-18.98	0.105	0.00110	-38.17
0.081	0.00056	-17.99	0.051	0.00099	-34.07
0.000	0.00005	0.60	0.126	-0.00386	140.60
0.020	-0.00100	38.33	0.375	-0.00929	336.40
0.361	0.00245	-86.12	0.195	-0.00406	147.64
0.198	0.00187	-65.15	0.053	0.00093	-32.70
0 014	0.00041	-12.58	0.123	0.00165	-58.84
0.025	0.00065	-21.27	0.267	0.00285	-102.15

update for EV, CV:

tRb
LN Analysis
SF228
tPb

Load

Load Data, EV=10.8 lbs/day CV=2.55

Avg:	11
SD:	28
CV:	2.55
Min:	0.6
Max:	157
Median:	3

Load Data-based LN

u	ln tPb Load	tPb Load
3	5.6	279
0	1.38	4
-3	-2.88	0.1

11	10.8
2.55	2.55

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.956, EV=8.22lbs/day CV=3.9; max r2=0.98**

r2 u,lnLoad:	0.956	u	lnLoad	Load		
slope, m:	0.599	3	5.72	305		
intercept, b:	-0.427	0	0.71	2		
N:	37	-3	-4.29	0.01		
E[Load]:	8.2	Parameter Estimates			0.956	0.956
SD[Load]:	32	from LN regression			8.2	8.22
CV[Load]:	3.90	update graph label			3.9	3.9
					max r2	
	N: 46				0.984	

Date	tPb Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
20-Dec-93		1	0.0135	-2.211		
20-Dec-93		2	0.0351	-1.810		
19-Jan-94		3	0.0568	-1.583		
19-Jan-94		4	0.0784	-1.416		
15-Nov-94		5	0.1000	-1.282		
23-Jul-94		6	0.1216	-1.167		
26-Jul-95		7	0.1432	-1.066		
28-Jun-95		8	0.1649	-0.975		
26-Oct-93	0.6	9	0.1865	-0.891	-0.452	0.956
14-Sep-95	0.7	10	0.2081	-0.813	-0.330	0.955
15-Feb-94	0.8	11	0.2297	-0.740	-0.177	0.954
15-Feb-94	0.9	12	0.2514	-0.670	-0.127	0.954
9-Sep-94	1.1	13	0.2730	-0.604	0.098	0.953
22-Mar-95		14	0.2946	-0.540		
15-Aug-95	1.1	15	0.3162	-0.478	0.127	0.956
16-Aug-94	1.3	16	0.3378	-0.418	0.277	0.956
30-Nov-93	1.4	17	0.3595	-0.360	0.312	0.959
4-Oct-91	1.5	18	0.3811	-0.303	0.400	0.960
25-Aug-98	1.5	19	0.4027	-0.246	0.401	0.963
27-Oct-98	1.5	20	0.4243	-0.191	0.423	0.964
23-Mar-94	1.5	21	0.4459	-0.136	0.435	0.965
14-Dec-94	1.7	22	0.4676	-0.081	0.523	0.964
12-Jul-95	2.0	23	0.4892	-0.027	0.716	0.964
7-Mar-94	2.2	24	0.5108	0.027	0.773	0.966
24-Jun-94	2.3	25	0.5324	0.081	0.817	0.969
23-Sep-98	2.4	26	0.5541	0.136	0.878	0.972
25-Jun-98	2.6	27	0.5757	0.191	0.957	0.975
27-Jul-98	2.6	28	0.5973	0.246	0.959	0.979
9-Mar-99	2.7	29	0.6189	0.303	1.005	0.981
7-Nov-97	2.9	30	0.6405	0.360	1.063	0.982
10-Feb-95	3.2	31	0.6622	0.418	1.153	0.983
8-Jun-94	3.3	32	0.6838	0.478	1.179	0.984
12-Apr-95	3.6	33	0.7054	0.540	1.281	0.983
24-Nov-98	4.0	34	0.7270	0.604	1.389	0.982
13-Jun-95	4.3	35	0.7486	0.670	1.469	0.981
25-Apr-95	5.3	36	0.7703	0.740	1.663	0.978
3-May-94	5.8	37	0.7919	0.813	1.756	0.976
6-Apr-94	6.7	38	0.8135	0.891	1.898	0.971
11-Jan-95	8.3	39	0.8351	0.975	2.121	0.965
20-May-94	11.6	40	0.8568	1.066	2.451	0.957
23-May-95	13.1	41	0.8784	1.167	2.572	0.953
8-May-95	18.3	42	0.9000	1.282	2.906	0.941
16-May-91	21.1	43	0.9216	1.416	3.048	
10-May-98	23.6	44	0.9432	1.583	3.160	
18-Apr-94	75.9	45	0.9649	1.810	4.330	
24-Apr-98	157.3	46	0.9865	2.211	5.058	

update for EV, CV:

tPb		SF228		11	10.8
LN Analysis		tPb		0.95	0.949
Concentration		Conc. Data, EV=10.8 ug/L CV=0.949			
Avg:	11	Data-based LN			
SD:	10	u	ln[tPb]	[tPb]	
CV:	0.95	3	4.5	87	
Min:	5	0	2.06	8	
Max:	52	-3	-0.34	1	
Median:	7				

					0.872	0.872
u=mLn{Conc.}+b:					9.2	9.21
update for r2, EV, CV:	r2=0.872, EV=9.21 ug/L CV=0.902; max r2=0.88				0.902	0.902
	r2 u,lnConc:	0.872	u	lnConc.	Conc.	
	slope, m:	1.296	3	4.24	69	
	intercept, b:	-2.491	0	1.92	7	
	N:	37	-3	-0.39	1	
	E[Conc]:	9.2	Parameter Estimates			
	SD[Conc]:	8	from LN regression			
	CV[Conc]:	0.90	update graph label			

Date	tPb Concentration ug/L Ranked		N: 46 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.875 r2 forward
update and rank for new data							
20-Dec-93			1	0.0135	-2.211		
20-Dec-93			2	0.0351	-1.810		
19-Jan-94			3	0.0568	-1.583		
19-Jan-94			4	0.0784	-1.416		
23-Jul-94			5	0.1000	-1.282		
15-Nov-94			6	0.1216	-1.167		
22-Mar-95			7	0.1432	-1.066		
28-Jun-95			8	0.1649	-0.975		
26-Jul-95			9	0.1865	-0.891		
26-Oct-93		5	10	0.2081	-0.813	1.609	0.872
15-Aug-95		5	11	0.2297	-0.740	1.609	0.872
14-Sep-95		5	12	0.2514	-0.670	1.609	0.870
25-Jun-98		5	13	0.2730	-0.604	1.609	0.867
10-May-98		5.1	14	0.2946	-0.540	1.629	0.863
23-Mar-94		6	15	0.3162	-0.478	1.792	0.858
8-Jun-94		6	16	0.3378	-0.418	1.792	0.860
9-Sep-94		6	17	0.3595	-0.360	1.792	0.861
10-Feb-95		6	18	0.3811	-0.303	1.792	0.861
13-Jun-95		6	19	0.4027	-0.246	1.792	0.859
15-Feb-94		7	20	0.4243	-0.191	1.946	0.856
15-Feb-94		7	21	0.4459	-0.136	1.946	0.862
3-May-94		7	22	0.4676	-0.081	1.946	0.867
24-Jun-94		7	23	0.4892	-0.027	1.946	0.871
16-Aug-94		7	24	0.5108	0.027	1.946	0.874
12-Apr-95		7	25	0.5324	0.081	1.946	0.875
12-Jul-95		7	26	0.5541	0.136	1.946	0.874
25-Aug-98		7	27	0.5757	0.191	1.946	0.871
7-Nov-97		7.3	28	0.5973	0.246	1.988	0.865
7-Mar-94		8	29	0.6189	0.303	2.079	0.859
14-Dec-94		8	30	0.6405	0.360	2.079	0.858
27-Oct-98		8	31	0.6622	0.418	2.079	0.853
25-Apr-95		9	32	0.6838	0.478	2.197	0.845
9-Mar-99		9	33	0.7054	0.540	2.197	0.844
16-May-91		10	34	0.7270	0.604	2.303	0.838
23-May-95		10	35	0.7486	0.670	2.303	0.842
27-Jul-98		10	36	0.7703	0.740	2.303	0.841
4-Oct-91		11	37	0.7919	0.813	2.398	0.833
30-Nov-93		11	38	0.8135	0.891	2.398	0.832
6-Apr-94		12	39	0.8351	0.975	2.485	0.820
23-Sep-98		12	40	0.8568	1.066	2.485	0.811
20-May-94		15	41	0.8784	1.167	2.708	0.780
11-Jan-95		15	42	0.9000	1.282	2.708	0.782
24-Nov-98		15	43	0.9216	1.416	2.708	
8-May-95		16	44	0.9432	1.583	2.773	
18-Apr-94		52	45	0.9649	1.810	3.951	
24-Apr-98		52	46	0.9865	2.211	3.951	

update for EV, CV:

tPb		**SF228**			109	109
LN Analysis		**tPb**			1.39	1.39

Discharge, Q — **Q Data, EV=109 cfs CV=1.39**

Avg:	**109**	**Q Data-based LN**		
SD:	**152**	u	lnQ	Q
CV:	**1.39**	3	7.3	1431
Min:	**22**	0	4.15	63
Max:	**859**	-3	1.03	3
Median:	**50**			

	0.918	0.918
	104.5	104
u=mLn(Q)+b:	1.22	1.22

update for r2, EV, CV: **r2=0.918, EV=104 cfs CV=1.22; max r2=0.99**

r2 u,lnQ:	0.918	u	lnQ	Q
slope, m:	1.045	3	7.06	1167
intercept, b:	-4.379	0	4.19	66
N:	46	-3	1.32	4
E[Q]:	104.5	Parameter Estimates		
SD[Q]:	128	from LN regression		
CV[Q]:	1.22	update graph label		

N: 46

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.993 r2 forward
update and rank for new data						
15-Feb-94	22.25	1	0.0135	-2.211	3.102	0.918
30-Nov-93	23.09	2	0.0351	-1.810	3.139	0.940
20-Dec-93	*23.3*	3	0.0568	-1.583	3.148	0.952
15-Feb-94	23.38	4	0.0784	-1.416	3.152	0.959
26-Oct-93	23.66	5	0.1000	-1.282	3.164	0.964
20-Dec-93	*23.66*	6	0.1216	-1.167	3.164	0.967
4-Oct-91	25.2	7	0.1432	-1.066	3.227	0.968
14-Sep-95	26.73	8	0.1649	-0.975	3.286	0.969
19-Jan-94	*29.48*	9	0.1865	-0.891	3.384	0.969
19-Jan-94	*31.84*	10	0.2081	-0.813	3.461	0.971
9-Sep-94	34.18	11	0.2297	-0.740	3.532	0.974
16-Aug-94	35.03	12	0.2514	-0.670	3.556	0.977
27-Oct-98	35.4694727	13	0.2730	-0.604	3.569	0.980
15-Nov-94	*36.36*	14	0.2946	-0.540	3.593	0.982
23-Sep-98	37.27465155	15	0.3162	-0.478	3.618	0.983
14-Dec-94	39.18	16	0.3378	-0.418	3.668	0.985
25-Aug-98	39.66786319	17	0.3595	-0.360	3.681	0.986
23-Jul-94	*41.18*	18	0.3811	-0.303	3.718	0.987
26-Jul-95	*42.22*	19	0.4027	-0.246	3.743	0.987
15-Aug-95	42.22	20	0.4243	-0.191	3.743	0.987
23-Mar-94	47.87	21	0.4459	-0.136	3.868	0.986
27-Jul-98	48.47276685	22	0.4676	-0.081	3.881	0.987
24-Nov-98	49.70988462	23	0.4892	-0.027	3.906	0.986
7-Mar-94	50.34	24	0.5108	0.027	3.919	0.985
12-Jul-95	54.31	25	0.5324	0.081	3.995	0.984
9-Mar-99	56.4129156	26	0.5541	0.136	4.033	0.983
24-Jun-94	60.11	27	0.5757	0.191	4.096	0.981
7-Nov-97	73.7	28	0.5973	0.246	4.300	0.979
28-Jun-95	*73.77*	29	0.6189	0.303	4.301	0.978
12-Apr-95	95.58	30	0.6405	0.360	4.560	0.976
25-Jun-98	96.83695513	31	0.6622	0.418	4.573	0.982
10-Feb-95	98.11	32	0.6838	0.478	4.586	0.987
8-Jun-94	100.71	33	0.7054	0.540	4.612	0.990
6-Apr-94	103.37	34	0.7270	0.604	4.638	0.993
11-Jan-95	103.37	35	0.7486	0.670	4.638	0.993
25-Apr-95	108.94	36	0.7703	0.740	4.691	0.992
13-Jun-95	134.54	37	0.7919	0.813	4.902	0.991
20-May-94	143.78	38	0.8135	0.891	4.968	0.992
3-May-94	153.69	39	0.8351	0.975	5.035	0.991
22-Mar-95	*168.78*	40	0.8568	1.066	5.129	0.988
8-May-95	212.3	41	0.8784	1.167	5.358	0.986
23-May-95	243.28	42	0.9000	1.282	5.494	0.982
18-Apr-94	271.47	43	0.9216	1.416	5.604	
16-May-91	391.6	44	0.9432	1.583	5.970	
24-Apr-98	562.1878832	45	0.9649	1.810	6.332	
10-May-98	859	46	0.9865	2.211	6.756	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF228	Date:	13-Jun-00
Chemical:	tZn	Analyst:	JMacLachlan
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	34,875	118	186	89	0.00	0.00	0.00
SD:	691	164	59	90	1.00	1.00	1.00
CV:	0.02	1.38	0.32	1.01			
Min:	33,374	22	68	26.0	-0.59	-1.99	-0.70
Max:	36,228	859	326	454	4.53	2.36	4.03
Median:	34,710	50	193	56	-0.42	0.12	-0.37

tZn	SF228		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.31)		update r2	0.31	0.31	r2:	0.061	0.046
r2 Q,[COC]:	0.31	[tZn]	Q		m:	0.0586	0.00029
slope, m:	-0.2	205	22.3		b:	-1924	-5.89
intercept, b:	209.7	186	118.3				
N: 47		36	859				
LnConc. = mLn(Q)+b (r2=0.544)		update r2	0.54	0.544			
r2 lnQ,ln[COC]:	0.54	ln[tZn]	ln Q	[tZn]	Q		
slope, m:	-0.28	5.48	3.10	240	22		
intercept, b:	6.33	5.02	4.77	152	118		
N: 47		4.48	6.76	88	859		

N= 47

	Sampling Date	Q Discharge	tZn Concentration	tZn Load	Ln Q	Ln tZn Conc.	Ln tZn Load	tZn SF228 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	16-May-91	391.6	95	200.1	5.97	4.55	5.30	1.67	-1.53	1.23
MFG	4-Oct-91	25.2	291	39.5	3.23	5.67	3.68	-0.57	1.77	-0.55
IDEQ	26-Oct-93	23.66	228	29.0	3.16	5.43	3.37	-0.58	0.71	-0.67
IDEQ	30-Nov-93	23.09	245	30.4	3.14	5.50	3.42	-0.58	1.00	-0.65
IDEQ	20-Dec-93	23.66	251	31.9	3.16	5.53	3.46	-0.58	1.10	-0.63
IDEQ	20-Dec-93	23.3	251	31.5	3.15	5.53	3.45	-0.58	1.10	-0.64
IDEQ	19-Jan-94	29.48	193	30.6	3.38	5.26	3.42	-0.54	0.12	-0.65
IDEQ	19-Jan-94	31.84	193	33.1	3.46	5.26	3.50	-0.53	0.12	-0.62
IDEQ	15-Feb-94	23.38	217	27.3	3.15	5.38	3.31	-0.58	0.52	-0.69
IDEQ	15-Feb-94	22.25	217	26.0	3.10	5.38	3.26	-0.59	0.52	-0.70
IDEQ	7-Mar-94	50.34	192	52.0	3.92	5.26	3.95	-0.42	0.10	-0.41
IDEQ	23-Mar-94	47.87	218	56.1	3.87	5.38	4.03	-0.43	0.54	-0.37
IDEQ	6-Apr-94	103.37	156	86.8	4.64	5.05	4.46	-0.09	-0.50	-0.03
IDEQ	18-Apr-94	271.47	162	236.6	5.60	5.09	5.47	0.94	-0.40	1.63
IDEQ	3-May-94	153.69	93	76.9	5.03	4.53	4.34	0.22	-1.56	-0.14
IDEQ	20-May-94	143.78	110	85.1	4.97	4.70	4.44	0.16	-1.28	-0.05
IDEQ	8-Jun-94	100.71	132	71.5	4.61	4.88	4.27	-0.11	-0.91	-0.20
IDEQ	24-Jun-94	60.11	124	40.1	4.10	4.82	3.69	-0.36	-1.04	-0.54
IDEQ	23-Jul-94	41.18	164	36.3	3.72	5.10	3.59	-0.47	-0.37	-0.59
IDEQ	16-Aug-94	35.03	232	43.7	3.56	5.45	3.78	-0.51	0.78	-0.50
IDEQ	9-Sep-94	34.18	201	37.0	3.53	5.30	3.61	-0.51	0.26	-0.58
IDEQ	15-Nov-94	36.36	284	55.6	3.59	5.65	4.02	-0.50	1.65	-0.37
IDEQ	14-Dec-94	39.18	326	68.7	3.67	5.79	4.23	-0.48	2.36	-0.23
IDEQ	11-Jan-95	103.37	233	129.6	4.64	5.45	4.86	-0.09	0.79	0.45
IDEQ	10-Feb-95	98.11	218	115.1	4.59	5.38	4.75	-0.12	0.54	0.29
IDEQ	22-Mar-95	168.78	194	176.2	5.13	5.27	5.17	0.31	0.14	0.96
IDEQ	12-Apr-95	95.58	163	83.8	4.56	5.09	4.43	-0.14	-0.39	-0.06
IDEQ	25-Apr-95	108.94	143	83.8	4.69	4.96	4.43	-0.06	-0.72	-0.06
IDEQ	8-May-95	212.3	109	124.5	5.36	4.69	4.82	0.57	-1.29	0.39
IDEQ	23-May-95	243.28	105	137.4	5.49	4.65	4.92	0.76	-1.36	0.53
IDEQ	13-Jun-95	134.54	108	78.2	4.90	4.68	4.36	0.10	-1.31	-0.12
IDEQ	28-Jun-95	73.77	117	46.4	4.30	4.76	3.84	-0.27	-1.16	-0.47
IDEQ	12-Jul-95	54.31	131	38.3	3.99	4.88	3.64	-0.39	-0.92	-0.56
IDEQ	26-Jul-95	42.22	177	40.2	3.74	5.18	3.69	-0.47	-0.15	-0.54
IDEQ	15-Aug-95	42.22	217	49.3	3.74	5.38	3.90	-0.47	0.52	-0.44
IDEQ	14-Sep-95	26.73	212	30.5	3.29	5.36	3.42	-0.56	0.44	-0.65
URS	7-Nov-97	73.7	225	89.2	4.30	5.42	4.49	-0.27	0.66	0.00
IDEQ	24-Apr-98	562.1878832	127	384.1	6.33	4.84	5.95	2.71	-0.99	3.26
IDEQ	24-Apr-98	562.1878832	150	453.7	6.33	5.01	6.12	2.71	-0.60	4.03
URS	10-May-98	859	67.5	311.9	6.76	4.21	5.74	4.53	-1.99	2.46
IDEQ	25-Jun-98	96.83695513	154	80.2	4.57	5.04	4.38	-0.13	-0.54	-0.10
IDEQ	27-Jul-98	48.47276685	148	38.6	3.88	5.00	3.65	-0.43	-0.64	-0.56
IDEQ	25-Aug-98	39.66786319	175	37.3	3.68	5.16	3.62	-0.48	-0.18	-0.57
IDEQ	23-Sep-98	37.27465155	203	40.7	3.62	5.31	3.71	-0.50	0.29	-0.54
IDEQ	27-Oct-98	35.4694727	260	49.6	3.57	5.56	3.90	-0.51	1.25	-0.44
IDEQ	24-Nov-98	49.70988462	282	75.4	3.91	5.64	4.32	-0.42	1.62	-0.15
IDEQ	9-Mar-99	56.4129156	242	73.4	4.03	5.49	4.30	-0.38	0.95	-0.17

tZn

Concentration over time analysis

	tZn	SF228		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.002**	**-0.00002**
	Time	**Ln[COC]**	**[COC]**		
first:	16-May-91	5.20	181		
mid:	11-Jan-95	5.17	176		
last:	9-Mar-99	5.14	171		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Mar-99	0.00	1		

Load over time analysis

	tZn	SF228			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.068**	**0.00027**
	Time	**LnLoad**	**Load**		
first:	16-May-91	3.78	44		
mid:	11-Jan-95	4.14	63		
last:	9-Mar-99	4.54	94		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Mar-99	0.00	1		

max r2: 0.667

Forward time Regression on Ln Concentration(t)

max r2: 0.768

Forward time Regression on Ln Load(t)

r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.002	-0.00002	5.89	0.068	0.00027	-5.23
0.019	-0.00007	7.62	0.132	0.00039	-9.31
0.005	-0.00004	6.53	0.123	0.00039	-9.47
0.003	-0.00003	6.21	0.110	0.00037	-8.73
0.001	-0.00002	5.78	0.099	0.00035	-8.00
0.000	0.00000	5.28	0.088	0.00033	-7.29
0.001	0.00001	4.72	0.076	0.00031	-6.47
0.001	0.00002	4.53	0.064	0.00028	-5.55
0.002	0.00002	4.31	0.053	0.00025	-4.65
0.004	0.00004	3.90	0.040	0.00022	-3.37
0.008	0.00005	3.43	0.027	0.00018	-1.85
0.010	0.00006	3.13	0.023	0.00016	-1.39
0.016	0.00007	2.58	0.019	0.00015	-1.02
0.016	0.00007	2.60	0.022	0.00016	-1.43
0.016	0.00007	2.55	0.045	0.00023	-3.87
0.005	0.00004	3.64	0.048	0.00024	-4.26
0.001	0.00002	4.52	0.053	0.00026	-4.91
0.000	0.00000	5.09	0.054	0.00027	-5.24
0.001	-0.00002	5.89	0.042	0.00024	-4.20
0.002	-0.00003	6.09	0.029	0.00020	-2.74
0.000	-0.00001	5.38	0.020	0.00017	-1.55
0.000	0.00001	4.96	0.009	0.00012	0.32
0.006	0.00005	3.53	0.005	0.00009	1.22
0.031	0.00010	1.46	0.004	0.00008	1.63
0.057	0.00014	0.12	0.009	0.00012	0.09
0.089	0.00018	-1.21	0.015	0.00016	-1.30
0.118	0.00021	-2.32	0.035	0.00025	-4.43
0.130	0.00023	-2.97	0.039	0.00027	-5.31
0.128	0.00023	-3.21	0.045	0.00030	-6.42
0.095	0.00020	-2.17	0.072	0.00040	-9.78
0.056	0.00016	-0.54	0.121	0.00054	-14.83
0.022	0.00010	1.57	0.144	0.00062	-17.97
0.002	0.00003	4.07	0.127	0.00063	-18.25
0.004	-0.00005	6.99	0.091	0.00058	-16.48
0.007	-0.00007	7.84	0.051	0.00050	-13.67
0.001	0.00003	4.02	0.024	0.00045	-11.67
0.191	0.00136	-43.69	0.217	-0.00334	124.65
0.613	0.00315	-108.38	0.408	-0.00607	223.19
0.597	0.00328	-113.18	0.310	-0.00501	184.89
0.667	0.00392	-136.23	0.125	-0.00259	97.52
0.633	0.00239	-80.91	0.134	0.00145	-48.45
0.532	0.00227	-76.40	0.768	0.00351	-122.66
0.344	0.00150	-48.78	0.730	0.00370	-129.67

update for EV, CV:

tZn
LN Analysis
SF228
tZn

Load

Load Data, EV=89.2 lbs/day CV=1.01

Avg:	89	Load Data-based LN		
SD:	90	u	ln tZn Load	tZn Load
CV:	1.01	3	6.7	780
Min:	26.0	0	4.14	63
Max:	454	-3	1.62	5.0
Median:	56			
		89	89.2	
		1.01	1.01	

u=mLn{Load}+ b:

update for r2, EV, CV: r2=0.912, EV=88.1lbs/day CV=0.903; max r2=0.98

r2 u,lnLoad:	0.912	u	lnLoad	Load
slope, m:	1.295	3	6.50	663
intercept, b:	-5.414	0	4.18	65
N:	47	-3	1.86	6.4
E[Load]:	88.1	Parameter Estimates		
SD[Load]:	80	from LN regression		
CV[Load]:	0.90	update graph label		

							0.912	0.912
							88.1	88.1
							0.9	0.903
							max r2	
	tZn	N: 47					0.976	
	Load	i	i-3/8 / N+1/4	u	Ln		r2	
Date	lbs/day	rank	plotting points	y-axis	x-axis		forward	
	Ranked							
updats and rank for new data								
15-Feb-94	26.0	1	0.0132	-2.219	3.257		0.912	
15-Feb-94	27.3	2	0.0344	-1.820	3.307		0.929	
26-Oct-93	29.0	3	0.0556	-1.593	3.368		0.939	
30-Nov-93	30.4	4	0.0767	-1.427	3.416		0.947	
14-Sep-95	30.5	5	0.0979	-1.294	3.417		0.954	
19-Jan-94	30.6	6	0.1190	-1.180	3.421		0.959	
20-Dec-93	31.5	7	0.1402	-1.079	3.449		0.962	
20-Dec-93	31.9	8	0.1614	-0.989	3.464		0.964	
19-Jan-94	33.1	9	0.1825	-0.906	3.498		0.966	
23-Jul-94	36.3	10	0.2037	-0.828	3.593		0.967	
9-Sep-94	37.0	11	0.2249	-0.756	3.610		0.970	
25-Aug-98	37.3	12	0.2460	-0.687	3.620		0.972	
12-Jul-95	38.3	13	0.2672	-0.621	3.645		0.974	
27-Jul-98	38.6	14	0.2884	-0.558	3.653		0.975	
4-Oct-91	39.5	15	0.3095	-0.497	3.675		0.976	
24-Jun-94	40.1	16	0.3307	-0.438	3.691		0.976	
26-Jul-95	40.2	17	0.3519	-0.380	3.694		0.976	
23-Sep-98	40.7	18	0.3730	-0.324	3.706		0.974	
16-Aug-94	43.7	19	0.3942	-0.268	3.778		0.973	
28-Jun-95	46.4	20	0.4153	-0.214	3.838		0.971	
15-Aug-95	49.3	21	0.4365	-0.160	3.898		0.970	
27-Oct-98	49.6	22	0.4577	-0.106	3.904		0.968	
7-Mar-94	52.0	23	0.4788	-0.053	3.951		0.966	
15-Nov-94	55.6	24	0.5000	0.000	4.017		0.964	
23-Mar-94	56.1	25	0.5212	0.053	4.028		0.962	
14-Dec-94	68.7	26	0.5423	0.106	4.230		0.959	
8-Jun-94	71.5	27	0.5635	0.160	4.270		0.961	
9-Mar-99	73.4	28	0.5847	0.214	4.297		0.964	
24-Nov-98	75.4	29	0.6058	0.268	4.323		0.967	
3-May-94	76.9	30	0.6270	0.324	4.342		0.970	
13-Jun-95	78.2	31	0.6481	0.380	4.359		0.972	
25-Jun-98	80.2	32	0.6693	0.438	4.385		0.973	
25-Apr-95	83.8	33	0.6905	0.497	4.429		0.973	
12-Apr-95	83.8	34	0.7116	0.558	4.429		0.973	
20-May-94	85.1	35	0.7328	0.621	4.444		0.970	
6-Apr-94	86.8	36	0.7540	0.687	4.463		0.966	
7-Nov-97	89.2	37	0.7751	0.756	4.491		0.962	
10-Feb-95	115.1	38	0.7963	0.828	4.746		0.963	
8-May-95	124.5	39	0.8175	0.906	4.824		0.956	
11-Jan-95	129.6	40	0.8386	0.989	4.864		0.946	
23-May-95	137.4	41	0.8598	1.079	4.923		0.935	
22-Mar-95	176.2	42	0.8810	1.180	5.171		0.940	
16-May-91	200.1	43	0.9021	1.294	5.299		0.923	
18-Apr-94	236.6	44	0.9233	1.427	5.466			
10-May-98	311.9	45	0.9444	1.593	5.743			
24-Apr-98	384.1	46	0.9656	1.820	5.951			
24-Apr-98	453.7	47	0.9868	2.219	6.117			

update for EV, CV:

tZn		SF228		186	186
LN Analysis		tZn		0.32	0.319
Concentration		Conc. Data, EV=186 ug/L CV=0.319			
Avg:	186	Data-based LN			
SD:	59	u	ln[tZn]	[tZn]	
CV:	0.32	3	6.1	451	
Min:	68	0	5.18	177	
Max:	326	-3	4.24	70	
Median:	193				

				0.966	0.966
u=mLn(Conc.)+b:				187.7	188
update for r2, EV, CV:	r2=0.966, EV=188 ug/L CV=0.377; max r2=0.99			0.377	0.377
r2 u,lnConc:	0.966	u	lnConc.	Conc.	
slope, m:	2.741	3	6.26	525	
intercept, b:	-14.165	0	5.17	176	
N:	47	-3	4.07	59	
E[Conc]:	187.7	Parameter Estimates			
SD[Conc]:	71	from LN regression			
CV[Conc]:	0.38	update graph label			

	tZn	N: 47				max r2 0.986
Date	Concentration ug/L Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
10-May-98	67.5	1	0.0132	-2.219	4.212	0.966
3-May-94	93	2	0.0344	-1.820	4.533	0.966
16-May-91	95	3	0.0556	-1.593	4.554	0.963
23-May-95	105	4	0.0767	-1.427	4.654	0.961
13-Jun-95	108	5	0.0979	-1.294	4.682	0.957
8-May-95	109	6	0.1190	-1.180	4.691	0.955
20-May-94	110	7	0.1402	-1.079	4.700	0.953
28-Jun-95	117	8	0.1614	-0.989	4.762	0.954
24-Jun-94	124	9	0.1825	-0.906	4.820	0.955
24-Apr-98	127	10	0.2037	-0.828	4.844	0.954
12-Jul-95	131	11	0.2249	-0.756	4.875	0.954
8-Jun-94	132	12	0.2460	-0.687	4.883	0.955
25-Apr-95	143	13	0.2672	-0.621	4.963	0.960
27-Jul-98	148	14	0.2884	-0.558	4.997	0.959
24-Apr-98	150	15	0.3095	-0.497	5.011	0.958
25-Jun-98	154	16	0.3307	-0.438	5.037	0.959
6-Apr-94	156	17	0.3519	-0.380	5.050	0.959
18-Apr-94	162	18	0.3730	-0.324	5.088	0.961
12-Apr-95	163	19	0.3942	-0.268	5.094	0.962
23-Jul-94	164	20	0.4153	-0.214	5.100	0.967
25-Aug-98	175	21	0.4365	-0.160	5.165	0.977
26-Jul-95	177	22	0.4577	-0.106	5.176	0.980
7-Mar-94	192	23	0.4788	-0.053	5.257	0.986
19-Jan-94	193	24	0.5000	0.000	5.263	0.985
19-Jan-94	193	25	0.5212	0.053	5.263	0.984
22-Mar-95	194	26	0.5423	0.106	5.268	0.984
9-Sep-94	201	27	0.5635	0.160	5.303	0.985
23-Sep-98	203	28	0.5847	0.214	5.313	0.984
14-Sep-95	212	29	0.6058	0.268	5.357	0.983
15-Aug-95	217	30	0.6270	0.324	5.380	0.982
15-Feb-94	217	31	0.6481	0.380	5.380	0.985
15-Feb-94	217	32	0.6693	0.438	5.380	0.986
10-Feb-95	218	33	0.6905	0.497	5.384	0.985
23-Mar-94	218	34	0.7116	0.558	5.384	0.983
7-Nov-97	225	35	0.7328	0.621	5.416	0.982
26-Oct-93	228	36	0.7540	0.687	5.429	0.979
16-Aug-94	232	37	0.7751	0.756	5.447	0.976
11-Jan-95	233	38	0.7963	0.828	5.451	0.972
9-Mar-99	242	39	0.8175	0.906	5.489	0.967
30-Nov-93	245	40	0.8386	0.989	5.501	0.962
20-Dec-93	251	41	0.8598	1.079	5.525	0.952
20-Dec-93	251	42	0.8810	1.180	5.525	0.940
27-Oct-98	260	43	0.9021	1.294	5.561	0.927
24-Nov-98	282	44	0.9233	1.427	5.642	
15-Nov-94	284	45	0.9444	1.593	5.649	
4-Oct-91	291	46	0.9656	1.820	5.673	
14-Dec-94	326	47	0.9868	2.219	5.787	

update for EV, CV:

tZn		SF228			118	118
LN Analysis		tZn			1.38	1.38
Discharge, Q		Q Data, EV=118 cfs CV=1.38				
Avg:	118	Q Data-based LN				
SD:	164	u	lnQ	Q		
CV:	1.38	3	7.3	1541		
Min:	22	0	4.24	69		
Max:	859	-3	1.14	3		
Median:	50					
					0.916	0.916
					114.5	115
	u=mLn(Q)+b:				1.32	1.32

update for r2, EV, CV: r2=0.916, EV=115 cfs CV=1.32; max r2=0.99

r2 u,lnQ:	0.916	u	lnQ	Q
slope, m:	0.996	3	7.25	1407
intercept, b:	-4.219	0	4.24	69
N: 47		-3	1.22	3
E[Q]:	114.5	Parameter Estimates		
SD[Q]:	151	from LN regression		
CV[Q]:	1.32	update graph label		

	Q	N: 47				max r2 0.985
Date	Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
15-Feb-94	22.25	1	0.0132	-2.219	3.102	0.916
30-Nov-93	23.09	2	0.0344	-1.820	3.139	0.937
20-Dec-93	23.3	3	0.0556	-1.593	3.148	0.949
15-Feb-94	23.38	4	0.0767	-1.427	3.152	0.957
26-Oct-93	23.66	5	0.0979	-1.294	3.164	0.962
20-Dec-93	23.66	6	0.1190	-1.180	3.164	0.965
4-Oct-91	25.2	7	0.1402	-1.079	3.227	0.966
14-Sep-95	26.73	8	0.1614	-0.989	3.286	0.967
19-Jan-94	29.48	9	0.1825	-0.906	3.384	0.968
19-Jan-94	31.84	10	0.2037	-0.828	3.461	0.970
9-Sep-94	34.18	11	0.2249	-0.756	3.532	0.972
16-Aug-94	35.03	12	0.2460	-0.687	3.556	0.975
27-Oct-98	35.4694727	13	0.2672	-0.621	3.569	0.978
15-Nov-94	36.36	14	0.2884	-0.558	3.593	0.980
23-Sep-98	37.27465155	15	0.3095	-0.497	3.618	0.981
14-Dec-94	39.18	16	0.3307	-0.438	3.668	0.983
25-Aug-98	39.66786319	17	0.3519	-0.380	3.681	0.984
23-Jul-94	41.18	18	0.3730	-0.324	3.718	0.984
26-Jul-95	42.22	19	0.3942	-0.268	3.743	0.985
15-Aug-95	42.22	20	0.4153	-0.214	3.743	0.984
23-Mar-94	47.87	21	0.4365	-0.160	3.868	0.984
27-Jul-98	48.47276685	22	0.4577	-0.106	3.881	0.984
24-Nov-98	49.70988462	23	0.4788	-0.053	3.906	0.983
7-Mar-94	50.34	24	0.5000	0.000	3.919	0.982
12-Jul-95	54.31	25	0.5212	0.053	3.995	0.980
9-Mar-99	56.4129156	26	0.5423	0.106	4.033	0.978
24-Jun-94	60.11	27	0.5635	0.160	4.096	0.977
7-Nov-97	73.7	28	0.5847	0.214	4.300	0.975
28-Jun-95	73.77	29	0.6058	0.268	4.301	0.973
12-Apr-95	95.58	30	0.6270	0.324	4.560	0.971
25-Jun-98	96.83695513	31	0.6481	0.380	4.573	0.974
10-Feb-95	98.11	32	0.6693	0.438	4.586	0.976
8-Jun-94	100.71	33	0.6905	0.497	4.612	0.976
6-Apr-94	103.37	34	0.7116	0.558	4.638	0.975
11-Jan-95	103.37	35	0.7328	0.621	4.638	0.972
25-Apr-95	108.94	36	0.7540	0.687	4.691	0.969
13-Jun-95	134.54	37	0.7751	0.756	4.902	0.965
20-May-94	143.78	38	0.7963	0.828	4.968	0.959
3-May-94	153.69	39	0.8175	0.906	5.035	0.951
22-Mar-95	168.78	40	0.8386	0.989	5.129	0.942
8-May-95	212.3	41	0.8598	1.079	5.358	0.934
23-May-95	243.28	42	0.8810	1.180	5.494	0.915
18-Apr-94	271.47	43	0.9021	1.294	5.604	0.888
16-May-91	391.6	44	0.9233	1.427	5.970	
24-Apr-98	562.1878832	45	0.9444	1.593	6.332	
24-Apr-98	562.1878832	46	0.9656	1.820	6.332	
10-May-98	859	47	0.9868	2.219	6.756	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF239	Date:	19-Jun-00
Chemical:	dCd	Analyst:	J.MacLachlan
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	35,078	355	7	8	0.00	0.00	0.00
SD:	832	430	3	8	1.00	1.00	1.00
CV:	0.02	1.21	0.45	0.97			
Min:	33,373	43	1	2.0	-0.72	-1.78	-0.77
Max:	36,404	1,742	15	47	3.22	2.66	5.16
Median:	34,791	131	7	5	-0.52	0.15	-0.36

dCd	SF239		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.518)		update r2	0.52	0.518	r2:	0.117	0.121
r2 Q,[COC]:	0.52		[dCd]	Q	m:	0.1770	0.00047
slope, m:	-0.01		8	43.0	b:	-5855	-11.32
intercept, b:	8.6		7	354.6			
N: 56			0	1742			
LnConc. = mLn(Q)+b (r2=0.699)		update r2		0.70	0.699		
r2 lnQ,ln[COC]:	0.70		ln[dCd]	ln Q	[dCd]	Q	
slope, m:	-0.43		2.41	3.76	11	43	
intercept, b:	4.04		1.49	5.87	4	355	
N: 56			0.80	7.46	2	1,742	

N= 56

	Sampling Date	Q Discharge	dCd Concentration	dCd Load	Ln Q	Ln dCd Conc.	Ln dCd Load	for graph 0 dCd SF239 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	626	2.2	7.4	6.44	0.79	2.00	0.63	-1.49	-0.06
MFG	3-Oct-91	56.1	11	3.3	4.03	2.40	1.20	-0.69	1.36	-0.60
IDEQ	29-Oct-93	54.12	8.2	2.4	3.99	2.10	0.87	-0.70	0.45	-0.72
IDEQ	2-Dec-93	61.06	8.3	2.7	4.11	2.12	1.00	-0.68	0.49	-0.67
IDEQ	20-Dec-93	49.76	10.9	2.9	3.91	2.39	1.07	-0.71	1.33	-0.65
IDEQ	20-Dec-93	54.85	10.9	3.2	4.00	2.39	1.17	-0.70	1.33	-0.61
IDEQ	19-Jan-94	68.93	8.2	3.0	4.23	2.10	1.11	-0.66	0.45	-0.63
IDEQ	19-Jan-94	76.14	8.2	3.4	4.33	2.10	1.21	-0.65	0.45	-0.59
IDEQ	15-Feb-94	56.11	9.8	3.0	4.03	2.28	1.08	-0.69	0.97	-0.64
IDEQ	15-Feb-94	55.57	9.8	2.9	4.02	2.28	1.07	-0.70	0.97	-0.65
IDEQ	7-Mar-94	116.89	8	5.0	4.76	2.08	1.62	-0.55	0.39	-0.37
IDEQ	23-Mar-94	165.89	8.8	7.9	5.11	2.17	2.06	-0.44	0.65	0.00
IDEQ	6-Apr-94	262.17	5.4	7.6	5.57	1.69	2.03	-0.21	-0.45	-0.03
IDEQ	18-Apr-94	927.99	3.8	19.0	6.83	1.34	2.94	1.33	-0.97	1.47
IDEQ	3-May-94	396.68	3.6	7.7	5.98	1.28	2.04	0.10	-1.04	-0.02
IDEQ	20-May-94	391.53	3.8	8.0	5.97	1.34	2.08	0.09	-0.97	0.02
IDEQ	8-Jun-94	210.99	5.2	5.9	5.35	1.65	1.78	-0.33	-0.52	-0.25
IDEQ	24-Jun-94	125.94	6.1	4.1	4.84	1.81	1.42	-0.53	-0.23	-0.49
IDEQ	23-Jul-94	75.06	7.2	2.9	4.32	1.97	1.07	-0.65	0.13	-0.65
IDEQ	16-Aug-94	58.89	8.5	2.7	4.08	2.14	0.99	-0.69	0.55	-0.68
IDEQ	9-Sep-94	59.6	9.4	3.0	4.09	2.24	1.10	-0.69	0.84	-0.64
IDEQ	5-Oct-94	45.76	8.5	2.1	3.82	2.14	0.74	-0.72	0.55	-0.76
IDEQ	15-Nov-94	51.58	13	3.6	3.94	2.56	1.28	-0.70	2.01	-0.56
IDEQ	14-Dec-94	56.79	15	4.6	4.04	2.71	1.52	-0.69	2.66	-0.43
IDEQ	11-Jan-95	249.07	7.4	9.9	5.52	2.00	2.29	-0.25	0.19	0.28
IDEQ	9-Feb-95	258.83	7.5	10.4	5.56	2.01	2.35	-0.22	0.23	0.35
IDEQ	8-Mar-95	190.62	7	7.2	5.25	1.95	1.97	-0.38	0.06	-0.09
IDEQ	22-Mar-95	821.97	6	26.5	6.71	1.79	3.28	1.09	-0.26	2.47
IDEQ	13-Apr-95	357.43	7	13.5	5.88	1.95	2.60	0.01	0.06	0.74
IDEQ	25-Apr-95	313.97	6.5	11.0	5.75	1.87	2.40	-0.09	-0.10	0.42
IDEQ	10-May-95	1741.79	5	46.9	7.46	1.61	3.85	3.22	-0.58	5.16
IDEQ	23-May-95	1234.55	3.3	21.9	7.12	1.19	3.09	2.05	-1.13	1.86
IDEQ	13-Jun-95	213.69	4	4.6	5.36	1.39	1.53	-0.33	-0.91	-0.43
IDEQ	28-Jun-95	178.93	5.4	5.2	5.19	1.69	1.65	-0.41	-0.45	-0.35
IDEQ	12-Jul-95	83.78	6	2.7	4.43	1.79	0.99	-0.63	-0.26	-0.68
IDEQ	26-Jul-95	68.1	7.4	2.7	4.22	2.00	1.00	-0.67	0.19	-0.68
IDEQ	15-Aug-95	69.77	7.8	2.9	4.25	2.05	1.07	-0.66	0.32	-0.65
IDEQ	14-Sep-95	68.1	9.2	3.4	4.22	2.22	1.22	-0.67	0.78	-0.59
URS	7-Nov-97	118	8.11	5.1	4.77	2.09	1.64	-0.55	0.42	-0.35
URS	13-May-98	865	2.6	12.1	6.76	0.96	2.49	1.19	-1.36	0.56
USGS	22-Oct-98	43	8.5	2.0	3.76	2.14	0.68	-0.72	0.55	-0.77
USGS	17-Nov-98	68	12	4.4	4.22	2.48	1.48	-0.67	1.68	-0.45
USGS	10-Dec-98	81	11	4.8	4.39	2.40	1.57	-0.64	1.36	-0.40
USGS	29-Dec-98	129	8.4	5.8	4.86	2.13	1.76	-0.52	0.52	-0.26
USGS	29-Dec-98	129	8.5	5.9	4.86	2.14	1.77	-0.52	0.55	-0.25

USGS	24-Mar-99	525	7.3	20.6	6.26	1.99	3.03	0.40	0.16	1.69
USGS	19-Apr-99	731	4.9	19.3	6.59	1.59	2.96	0.88	-0.62	1.51
USGS	5-May-99	479	3.5	9.0	6.17	1.25	2.20	0.29	-1.07	0.16
USGS	24-May-99	1220	1.7	11.2	7.11	0.53	2.41	2.01	-1.65	0.44
USGS	26-May-99	1570	1.3	11.0	7.36	0.26	2.40	2.83	-1.78	0.42
USGS	27-May-99	1230	1.7	11.2	7.11	0.53	2.42	2.04	-1.65	0.45
USGS	1-Jun-99	1040	1.7	9.5	6.95	0.53	2.25	1.59	-1.65	0.22
USGS	16-Jun-99	1180	1.3	8.3	7.07	0.26	2.11	1.92	-1.78	0.06
USGS	15-Jul-99	282	3	4.6	5.64	1.10	1.52	-0.17	-1.23	-0.43
USGS	5-Aug-99	133	5	3.6	4.89	1.61	1.27	-0.52	-0.58	-0.56
USGS	1-Sep-99	77	7	2.9	4.34	1.95	1.06	-0.65	0.06	-0.65

dCd

Concentration over time analysis r2 Slope, m

dCd SF239 **Concentration over time**

LnConc.=mTime+b All data r2, m: **0.155** **-0.00028**

	Time	Ln[COC]	[COC]
first:	15-May-91	2.25	9
mid:	2-Apr-95	1.86	6
last:	1-Sep-99	1.41	4

LnConc.=mTime+b >'96 r2, m: **0.915** **0.01672**

26-May-99	0.30	1
1-Sep-99	1.94	7

Load over time analysis

dCd SF239 **Load over time**

LnLoad=mTime+b All data r2, m: **0.051** **0.00019**

	Time	LnLoad	Load
first:	15-May-91	1.43	4
mid:	2-Apr-95	1.71	6
last:	1-Sep-99	2.02	8

LnLoad=mTime+b >'96 r2, m: **0.978** **-0.01449**

26-May-99	2.37	11
1-Sep-99	0.95	3

max r2: 0.917 max r2: 0.981

Forward time Regression on Ln Concentration(t) **Forward time Regression on Ln Load(t)**

r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.155	-0.00028	11.48	0.051	0.00019	-5.07
0.238	-0.00035	13.99	0.062	0.00022	-6.05
0.222	-0.00035	13.91	0.053	0.00021	-5.69
0.218	-0.00034	13.89	0.044	0.00019	-4.99
0.213	-0.00034	13.84	0.037	0.00018	-4.39
0.201	-0.00033	13.52	0.030	0.00016	-3.81
0.189	-0.00032	13.16	0.025	0.00014	-3.27
0.183	-0.00032	13.08	0.019	0.00013	-2.64
0.177	-0.00032	12.98	0.014	0.00011	-2.07
0.166	-0.00031	12.67	0.009	0.00009	-1.30
0.155	-0.00030	12.33	0.005	0.00007	-0.45
0.148	-0.00030	12.20	0.004	0.00006	-0.18
0.139	-0.00029	11.93	0.005	0.00007	-0.46
0.143	-0.00030	12.27	0.006	0.00007	-0.72
0.163	-0.00032	13.13	0.015	0.00012	-2.26
0.188	-0.00035	14.14	0.017	0.00013	-2.66
0.214	-0.00038	15.18	0.020	0.00014	-3.16
0.226	-0.00040	15.83	0.020	0.00014	-3.24
0.231	-0.00041	16.29	0.016	0.00013	-2.74
0.228	-0.00042	16.49	0.009	0.00010	-1.57
0.219	-0.00041	16.40	0.003	0.00006	-0.11
0.204	-0.00041	16.09	0.000	0.00002	1.32
0.193	-0.00040	15.92	0.002	-0.00005	3.67
0.166	-0.00037	14.82	0.007	-0.00009	5.18
0.134	-0.00033	13.23	0.013	-0.00012	6.38
0.124	-0.00032	13.00	0.010	-0.00011	5.98
0.112	-0.00031	12.68	0.007	-0.00010	5.38
0.102	-0.00031	12.46	0.008	-0.00010	5.65
0.099	-0.00031	12.62	0.000	-0.00001	2.24
0.087	-0.00030	12.32	0.002	0.00005	0.21
0.079	-0.00030	12.19	0.007	0.00010	-1.62
0.083	-0.00032	13.04	0.086	0.00032	-9.74
0.118	-0.00040	16.08	0.238	0.00052	-17.06
0.151	-0.00049	19.19	0.244	0.00057	-18.64
0.166	-0.00056	21.74	0.271	0.00065	-21.76
0.177	-0.00065	24.92	0.217	0.00063	-21.05
0.168	-0.00074	28.21	0.150	0.00060	-19.61
0.161	-0.00093	35.24	0.076	0.00053	-17.35
0.173	-0.00191	70.61	0.010	0.00038	-11.84
0.148	-0.00241	88.81	0.001	0.00012	-2.48
0.407	-0.00519	189.59	0.046	0.00144	-50.15
0.376	-0.00546	199.50	0.001	-0.00019	8.81
0.281	-0.00497	181.73	0.031	-0.00126	47.89
0.169	-0.00407	148.79	0.124	-0.00284	105.14
0.070	-0.00291	106.64	0.289	-0.00513	188.30

0.008	0.00122	-43.41	0.937	-0.01302	475.16
0.195	0.00647	-234.21	0.924	-0.01348	491.81
0.542	0.01137	-412.24	0.907	-0.01275	465.31
0.900	0.01587	-575.99	0.981	-0.01452	529.56
0.915	0.01672	-606.78	0.978	-0.01449	528.40
0.898	0.01651	-598.94	0.974	-0.01436	523.81
0.917	0.01823	-661.64	0.969	-0.01375	501.45

update for EV, CV:

dCd
LN Analysis
Load

SF239
dCd
Load Data, EV=7.83 lbs/day CV=0.967
Load Data-based LN

		u	ln dCd Load	dCd Load
Avg:	**8**	3	4.2	64
SD:	**8**	0	1.73	6
CV:	**0.97**	-3	-0.71	0.5
Min:	**2.0**			
Max:	**47**			
Median:	**5**			

8	7.83
0.97	0.967

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.942, EV=7.76lbs/day CV=0.878; max r2=0.99**

		u	lnLoad	Load		
r2 u,lnLoad:	0.942	3	4.03	56		
slope, m:	1.323	0	1.76	6		
intercept, b:	-2.333	-3	-0.50	0.6		
N:	56				0.942	0.942
E[Load]:	7.8	Parameter Estimates			7.8	7.76
SD[Load]:	7	from LN regression			0.9	0.878
CV[Load]:	0.88	update graph label			max r2	

Date	dCd Load lbs/day Ranked	N: 56 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	#DIV/0! r2 forward
update and rank for new data						
22-Oct-98	**2.0**	1	0.0111	-2.287	0.676	0.942
5-Oct-94	**2.1**	2	0.0289	-1.897	0.738	0.952
29-Oct-93	**2.4**	3	0.0467	-1.678	0.870	0.956
16-Aug-94	**2.7**	4	0.0644	-1.518	0.991	0.961
12-Jul-95	**2.7**	5	0.0822	-1.390	0.995	0.968
26-Jul-95	**2.7**	6	0.1000	-1.282	0.997	0.974
2-Dec-93	**2.7**	7	0.1178	-1.186	1.003	0.978
1-Sep-99	**2.9**	8	0.1356	-1.101	1.065	0.980
23-Jul-94	**2.9**	9	0.1533	-1.022	1.067	0.984
20-Dec-93	**2.9**	10	0.1711	-0.950	1.071	0.986
15-Aug-95	**2.9**	11	0.1889	-0.882	1.074	0.988
15-Feb-94	**2.9**	12	0.2067	-0.818	1.075	0.989
15-Feb-94	**3.0**	13	0.2244	-0.757	1.085	0.990
9-Sep-94	**3.0**	14	0.2422	-0.699	1.103	0.990
19-Jan-94	**3.0**	15	0.2600	-0.643	1.112	0.990
20-Dec-93	**3.2**	16	0.2778	-0.589	1.168	0.989
3-Oct-91	**3.3**	17	0.2956	-0.537	1.200	0.989
19-Jan-94	**3.4**	18	0.3133	-0.486	1.212	0.988
14-Sep-95	**3.4**	19	0.3311	-0.437	1.215	0.988
5-Aug-99	**3.6**	20	0.3489	-0.388	1.275	0.987
15-Nov-94	**3.6**	21	0.3667	-0.341	1.283	0.986
24-Jun-94	**4.1**	22	0.3844	-0.294	1.419	0.986
17-Nov-98	**4.4**	23	0.4022	-0.248	1.479	0.985
15-Jul-99	**4.6**	24	0.4200	-0.202	1.515	0.985
14-Dec-94	**4.6**	25	0.4378	-0.157	1.522	0.984
13-Jun-95	**4.6**	26	0.4556	-0.112	1.526	0.983
10-Dec-98	**4.8**	27	0.4733	-0.067	1.567	0.982
7-Mar-94	**5.0**	28	0.4911	-0.022	1.616	0.981
7-Nov-97	**5.1**	29	0.5089	0.022	1.639	0.979
28-Jun-95	**5.2**	30	0.5267	0.067	1.648	0.978
29-Dec-98	**5.8**	31	0.5444	0.112	1.763	0.977
29-Dec-98	**5.9**	32	0.5622	0.157	1.775	0.975
8-Jun-94	**5.9**	33	0.5800	0.202	1.775	0.973
8-Mar-95	**7.2**	34	0.5978	0.248	1.971	0.972
15-May-91	**7.4**	35	0.6156	0.294	2.003	0.972
6-Apr-94	**7.6**	36	0.6333	0.341	2.030	0.972
3-May-94	**7.7**	37	0.6511	0.388	2.039	0.972
23-Mar-94	**7.9**	38	0.6689	0.437	2.061	0.971
20-May-94	**8.0**	39	0.6867	0.486	2.080	0.969
16-Jun-99	**8.3**	40	0.7044	0.537	2.111	0.967
5-May-99	**9.0**	41	0.7222	0.589	2.199	0.964
1-Jun-99	**9.5**	42	0.7400	0.643	2.253	0.962
11-Jan-95	**9.9**	43	0.7578	0.699	2.294	0.961
9-Feb-95	**10.4**	44	0.7756	0.757	2.346	0.959
25-Apr-95	**11.0**	45	0.7933	0.818	2.396	0.959

26-May-99	11.0	46	0.8111	0.882	2.396	0.960
24-May-99	11.2	47	0.8289	0.950	2.412	0.957
27-May-99	11.2	48	0.8467	1.022	2.420	0.949
13-May-98	12.1	49	0.8644	1.101	2.493	0.939
13-Apr-95	13.5	50	0.8822	1.186	2.600	0.929
18-Apr-94	19.0	51	0.9000	1.282	2.943	0.920
19-Apr-99	19.3	52	0.9178	1.390	2.959	0.943
24-Mar-99	20.6	53	0.9356	1.518	3.026	0.958
23-May-95	21.9	54	0.9533	1.678	3.087	0.986
22-Mar-95	26.5	55	0.9711	1.897	3.278	1.000
10-May-95	46.9	56	0.9889	2.287	3.847	#DIV/0!

		update for EV, CV:			
dCd		**SF239**		7	6.8
LN Analysis		**dCd,**		0.45	0.454
Concentration		**Conc. Data, EV=6.8 ug/L CV=0.454**			
Avg:	7	**Data-based LN**			
SD:	3	u	ln[dCd]	[dCd]	
CV:	0.45	3	3.1	23	
Min:	1	0	1.82	6	
Max:	15	-3	0.52	2	
Median:	7				

					0.899	0.899
u=mLn{Conc.}+b:					7.2	7.23
update for r2, EV, CV:	**r2=0.899, EV=7.23 ug/L CV=0.703; max r2=0.98**				0.703	0.703
	r2 u,lnConc:	0.899	u	lnConc.	Conc.	
	slope, m:	1.579	3	3.68	40	
	intercept, b:	-2.806	0	1.78	6	
	N:	56	-3	-0.12	1	
	E[Conc]:	7.2	Parameter Estimates			
	SD[Conc]:	5	from LN regression			
	CV[Conc]:	0.70	update graph label			

	dCd	N: 56				max r2 0.983
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
26-May-99	1.3	1	0.0111	-2.287	0.262	0.899
16-Jun-99	1.3	2	0.0289	-1.897	0.262	0.888
24-May-99	1.7	3	0.0467	-1.678	0.531	0.885
27-May-99	1.7	4	0.0644	-1.518	0.531	0.881
1-Jun-99	1.7	5	0.0822	-1.390	0.531	0.884
15-May-91	2.2	6	0.1000	-1.282	0.788	0.901
13-May-98	2.6	7	0.1178	-1.186	0.956	0.910
15-Jul-99	3	8	0.1356	-1.101	1.099	0.916
23-May-95	3.3	9	0.1533	-1.022	1.194	0.918
5-May-99	3.5	10	0.1711	-0.950	1.253	0.919
3-May-94	3.6	11	0.1889	-0.882	1.281	0.921
18-Apr-94	3.8	12	0.2067	-0.818	1.335	0.924
20-May-94	3.8	13	0.2244	-0.757	1.335	0.929
13-Jun-95	4	14	0.2422	-0.699	1.386	0.941
19-Apr-99	4.9	15	0.2600	-0.643	1.589	0.957
10-May-95	5	16	0.2778	-0.589	1.609	0.957
5-Aug-99	5	17	0.2956	-0.537	1.609	0.957
8-Jun-94	5.2	18	0.3133	-0.486	1.649	0.961
6-Apr-94	5.4	19	0.3311	-0.437	1.686	0.964
28-Jun-95	5.4	20	0.3489	-0.388	1.686	0.968
22-Mar-95	6	21	0.3667	-0.341	1.792	0.976
12-Jul-95	6	22	0.3844	-0.294	1.792	0.976
24-Jun-94	6.1	23	0.4022	-0.248	1.808	0.978
25-Apr-95	6.5	24	0.4200	-0.202	1.872	0.981
8-Mar-95	7	25	0.4378	-0.157	1.946	0.981
13-Apr-95	7	26	0.4556	-0.112	1.946	0.980
1-Sep-99	7	27	0.4733	-0.067	1.946	0.979
23-Jul-94	7.2	28	0.4911	-0.022	1.974	0.978
24-Mar-99	7.3	29	0.5089	0.022	1.988	0.976
11-Jan-95	7.4	30	0.5267	0.067	2.001	0.975
26-Jul-95	7.4	31	0.5444	0.112	2.001	0.974
9-Feb-95	7.5	32	0.5622	0.157	2.015	0.972
15-Aug-95	7.8	33	0.5800	0.202	2.054	0.970
7-Mar-94	8	34	0.5978	0.248	2.079	0.969
7-Nov-97	8.11	35	0.6156	0.294	2.093	0.971
29-Oct-93	8.2	36	0.6333	0.341	2.104	0.973
19-Jan-94	8.2	37	0.6511	0.388	2.104	0.976
19-Jan-94	8.2	38	0.6689	0.437	2.104	0.977
2-Dec-93	8.3	39	0.6867	0.486	2.116	0.977
29-Dec-98	8.4	40	0.7044	0.537	2.128	0.977
16-Aug-94	8.5	41	0.7222	0.589	2.140	0.977
5-Oct-94	8.5	42	0.7400	0.643	2.140	0.976
22-Oct-98	8.5	43	0.7578	0.699	2.140	0.974
29-Dec-98	8.5	44	0.7756	0.757	2.140	0.971
23-Mar-94	8.8	45	0.7933	0.818	2.175	0.970

14-Sep-95	9.2	46	0.8111	0.882	2.219	0.968
9-Sep-94	9.4	47	0.8289	0.950	2.241	0.963
15-Feb-94	9.8	48	0.8467	1.022	2.282	0.957
15-Feb-94	9.8	49	0.8644	1.101	2.282	0.948
20-Dec-93	10.9	50	0.8822	1.186	2.389	0.940
20-Dec-93	10.9	51	0.9000	1.282	2.389	0.966
3-Oct-91	11	52	0.9178	1.390	2.398	0.983
10-Dec-98	11	53	0.9356	1.518	2.398	
17-Nov-98	12	54	0.9533	1.678	2.485	
15-Nov-94	13	55	0.9711	1.897	2.565	
14-Dec-94	15	56	0.9889	2.287	2.708	

update for EV, CV:

dCd		**SF239**			355	355
LN Analysis		**dCd**			1.21	1.21
Discharge, Q		**Q Data, EV=355 cfs CV=1.21**				
Avg:	**355**	**Q Data-based LN**				
SD:	**430**	u	lnQ	Q		
CV:	**1.21**	3	8.3	3914		
Min:	**43**	0	5.42	226		
Max:	**1,742**	-3	2.56	13		
Median:	**131**					
					0.912	0.912
					382.3	382
	u=mLn(Q)+b:				1.83	1.83

update for r2, EV, CV: **r2=0.912, EV=382 cfs CV=1.83; max r2=0.96**

r2 u,lnQ:	0.912	u	lnQ	Q
slope, m:	0.825	3	8.85	6962
intercept, b:	-4.299	0	5.21	183
N:	56	-3	1.57	5
E[Q]:	382.3	Parameter Estimates		
SD[Q]:	700	from LN regression		
CV[Q]:	1.83	update graph label		

N: 56

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Lu x-axis	max r2 0.964 r2 forward
update and rank for new data						
22-Oct-98	43	1	0.0111	-2.287	3.761	0.912
5-Oct-94	45.76	2	0.0289	-1.897	3.823	0.928
20-Dec-93	49.76	3	0.0467	-1.678	3.907	0.937
15-Nov-94	51.58	4	0.0644	-1.518	3.943	0.945
29-Oct-93	54.12	5	0.0822	-1.390	3.991	0.950
20-Dec-93	54.85	6	0.1000	-1.282	4.005	0.955
15-Feb-94	55.57	7	0.1178	-1.186	4.018	0.959
3-Oct-91	56.1	8	0.1356	-1.101	4.027	0.962
15-Feb-94	56.11	9	0.1533	-1.022	4.027	0.963
14-Dec-94	56.79	10	0.1711	-0.950	4.039	0.964
16-Aug-94	58.89	11	0.1889	-0.882	4.076	0.964
9-Sep-94	59.6	12	0.2067	-0.818	4.088	0.964
2-Dec-93	61.06	13	0.2244	-0.757	4.112	0.963
17-Nov-98	68	14	0.2422	-0.699	4.220	0.961
26-Jul-95	68.1	15	0.2600	-0.643	4.221	0.960
14-Sep-95	68.1	16	0.2778	-0.589	4.221	0.959
19-Jan-94	68.93	17	0.2956	-0.537	4.233	0.956
15-Aug-95	69.77	18	0.3133	-0.486	4.245	0.954
23-Jul-94	75.06	19	0.3311	-0.437	4.318	0.951
19-Jan-94	76.14	20	0.3489	-0.388	4.333	0.949
1-Sep-99	77	21	0.3667	-0.341	4.344	0.946
10-Dec-98	81	22	0.3844	-0.294	4.394	0.943
12-Jul-95	83.78	23	0.4022	-0.248	4.428	0.941
7-Mar-94	116.89	24	0.4200	-0.202	4.761	0.940
7-Nov-97	118	25	0.4378	-0.157	4.771	0.937
24-Jun-94	125.94	26	0.4556	-0.112	4.836	0.933
29-Dec-98	129	27	0.4733	-0.067	4.860	0.929
29-Dec-98	129	28	0.4911	-0.022	4.860	0.925
5-Aug-99	133	29	0.5089	0.022	4.890	0.922
23-Mar-94	165.89	30	0.5267	0.067	5.111	0.920
28-Jun-95	178.93	31	0.5444	0.112	5.187	0.916
8-Mar-95	190.62	32	0.5622	0.157	5.250	0.911
8-Jun-94	210.99	33	0.5800	0.202	5.352	0.905
13-Jun-95	213.69	34	0.5978	0.248	5.365	0.899
11-Jan-95	249.07	35	0.6156	0.294	5.518	0.893
9-Feb-95	258.83	36	0.6333	0.341	5.556	0.885
6-Apr-94	262.17	37	0.6511	0.388	5.569	0.877
15-Jul-99	282	38	0.6689	0.437	5.642	0.871
25-Apr-95	313.97	39	0.6867	0.486	5.749	0.867
13-Apr-95	357.43	40	0.7044	0.537	5.879	0.863
20-May-94	391.53	41	0.7222	0.589	5.970	0.857
3-May-94	396.68	42	0.7400	0.643	5.983	0.851
5-May-99	479	43	0.7578	0.699	6.172	0.866
24-Mar-99	525	44	0.7756	0.757	6.263	0.874
15-May-91	626	45	0.7933	0.818	6.439	0.901

19-Apr-99	731	46	0.8111	0.882	6.594	0.920
22-Mar-95	821.97	47	0.8289	0.950	6.712	0.925
13-May-98	865	48	0.8467	1.022	6.763	0.918
18-Apr-94	927.99	49	0.8644	1.101	6.833	0.916
1-Jun-99	1040	50	0.8822	1.186	6.947	0.919
16-Jun-99	1180	51	0.9000	1.282	7.073	0.898
24-May-99	1220	52	0.9178	1.390	7.107	0.894
27-May-99	1230	53	0.9356	1.518	7.115	
23-May-95	1234.55	54	0.9533	1.678	7.118	
26-May-99	1570	55	0.9711	1.897	7.359	
10-May-95	1741.79	56	0.9889	2.287	7.463	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.		see comment
Station:	SF239	**Date:** 19-Jun-00
Chemical:	dPb	**Analyst:** J.MacLachlan
Notes:		

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	35,078	355	11	16	0.00	0.00	0.00
SD:	832	430	4	17	1.00	1.00	1.00
CV:	0.02	1.21	0.37	1.11			
Min:	33,373	43	3	1.8	-0.72	-1.92	-0.79
Max:	36,404	1,742	21	94	3.22	2.65	4.50
Median:	34,791	131	11	10	-0.52	0.07	-0.31

dPb	SF239		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.275)		update r2	**0.28**	0.275	r2:	0.117	0.121
r2 Q,[COC]:	0.28	[dPb]	Q		m:	0.1770	0.00047
slope, m:	-0.005	12	43.0		b:	-5855	-11.32
intercept, b:	12.5	11	354.6				
N: 56		4	1742				
LnConc. = mLn{Q}+b (r2=0.323)		update r2	0.32	0.323			
r2 lnQ,ln[COC]:	0.32	ln[dPb]	ln Q	[dPb]	Q		
slope, m:	-0.22	2.60	3.76	14	43		
intercept, b:	3.42	2.15	5.87	9	355		
N: 56		1.81	7.46	6	1,742		

N= 56

	Sampling Date	Q Discharge	dPb Concentration	dPb Load	Ln Q	Ln dPb Conc.	Ln dPb Load	for graph 0 dPb SF239 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	626	3	10.1	6.44	1.10	2.31	0.63	-1.92	-0.32
MFG	3-Oct-91	56.1	6	1.8	4.03	1.79	0.59	-0.69	-1.18	-0.79
IDEQ	29-Oct-93	54.12	11	3.2	3.99	2.40	1.16	-0.70	0.07	-0.71
IDEQ	2-Dec-93	61.06	11	3.6	4.11	2.40	1.28	-0.68	0.07	-0.69
IDEQ	20-Dec-93	49.76	12	3.2	3.91	2.48	1.17	-0.71	0.31	-0.71
IDEQ	20-Dec-93	54.85	12	3.5	4.00	2.48	1.26	-0.70	0.31	-0.69
IDEQ	19-Jan-94	68.93	11	4.1	4.23	2.40	1.41	-0.66	0.07	-0.66
IDEQ	19-Jan-94	76.14	11	4.5	4.33	2.40	1.51	-0.65	0.07	-0.64
IDEQ	15-Feb-94	56.11	10	3.0	4.03	2.30	1.10	-0.69	-0.18	-0.72
IDEQ	15-Feb-94	55.57	10	3.0	4.02	2.30	1.10	-0.70	-0.18	-0.73
IDEQ	7-Mar-94	116.89	11	6.9	4.76	2.40	1.93	-0.55	0.07	-0.50
IDEQ	23-Mar-94	165.89	12	10.7	5.11	2.48	2.37	-0.44	0.31	-0.28
IDEQ	6-Apr-94	262.17	9	12.7	5.57	2.20	2.54	-0.21	-0.43	-0.17
IDEQ	18-Apr-94	927.99	7	34.9	6.83	1.95	3.55	1.33	-0.93	1.11
IDEQ	3-May-94	396.68	11	23.5	5.98	2.40	3.16	0.10	0.07	0.45
IDEQ	20-May-94	391.53	9	19.0	5.97	2.20	2.94	0.09	-0.43	0.19
IDEQ	8-Jun-94	210.99	13	14.8	5.35	2.56	2.69	-0.33	0.56	-0.05
IDEQ	24-Jun-94	125.94	15	10.2	4.84	2.71	2.32	-0.53	1.06	-0.31
IDEQ	23-Jul-94	75.06	13	5.2	4.32	2.56	1.66	-0.65	0.56	-0.60
IDEQ	16-Aug-94	58.89	15	4.8	4.08	2.71	1.56	-0.69	1.06	-0.62
IDEQ	9-Sep-94	59.6	12	3.8	4.09	2.48	1.35	-0.69	0.31	-0.68
IDEQ	5-Oct-94	45.76	9	2.2	3.82	2.20	0.80	-0.72	-0.43	-0.77
IDEQ	15-Nov-94	51.58	21	5.8	3.94	3.04	1.76	-0.70	2.55	-0.56
IDEQ	14-Dec-94	56.79	12	3.7	4.04	2.48	1.30	-0.69	0.31	-0.69
IDEQ	11-Jan-95	249.07	7	9.4	5.52	1.95	2.24	-0.25	-0.93	-0.36
IDEQ	9-Feb-95	258.83	11	15.3	5.56	2.40	2.73	-0.22	0.07	-0.02
IDEQ	8-Mar-95	190.62	15	15.4	5.25	2.71	2.73	-0.38	1.06	-0.01
IDEQ	22-Mar-95	821.97	11	48.6	6.71	2.40	3.88	1.09	0.07	1.90
IDEQ	13-Apr-95	357.43	13	25.0	5.88	2.56	3.22	0.01	0.56	0.54
IDEQ	25-Apr-95	313.97	14	23.6	5.75	2.64	3.16	-0.09	0.81	0.46
IDEQ	10-May-95	1741.79	10	93.7	7.46	2.30	4.54	3.22	-0.18	4.50
IDEQ	23-May-95	1234.55	11	73.1	7.12	2.40	4.29	2.05	0.07	3.31
IDEQ	13-Jun-95	213.69	15	17.2	5.36	2.71	2.85	-0.33	1.06	0.09
IDEQ	28-Jun-95	178.93	14	13.5	5.19	2.64	2.60	-0.41	0.81	-0.12
IDEQ	12-Jul-95	83.78	14	6.3	4.43	2.64	1.84	-0.63	0.81	-0.53
IDEQ	26-Jul-95	68.1	15	5.5	4.22	2.71	1.70	-0.67	1.06	-0.58
IDEQ	15-Aug-95	69.77	14	5.3	4.25	2.64	1.66	-0.66	0.81	-0.60
IDEQ	14-Sep-95	68.1	18	6.6	4.22	2.89	1.89	-0.67	1.81	-0.52
URS	7-Nov-97	118	21.4	13.6	4.77	3.06	2.61	-0.55	2.65	-0.12
URS	13-May-98	865	7.9	36.8	6.76	2.07	3.60	1.19	-0.71	1.22
USGS	22-Oct-98	43	11	2.5	3.76	2.40	0.93	-0.72	0.07	-0.75
USGS	17-Nov-98	68	9.5	3.5	4.22	2.25	1.25	-0.67	-0.31	-0.70
USGS	10-Dec-98	81	14	6.1	4.39	2.64	1.81	-0.64	0.81	-0.55
USGS	29-Dec-98	129	5.6	3.9	4.86	1.72	1.36	-0.52	-1.28	-0.67
USGS	29-Dec-98	129	5.7	4.0	4.86	1.74	1.38	-0.52	-1.25	-0.67

USGS	24-Mar-99	525	8.5	24.0	6.26	2.14	3.18	0.40	-0.56	0.48
USGS	19-Apr-99	731	3.6	14.2	6.59	1.28	2.65	0.88	-1.78	-0.08
USGS	5-May-99	479	6.6	17.0	6.17	1.89	2.83	0.29	-1.03	0.08
USGS	24-May-99	1220	4.9	32.2	7.11	1.59	3.47	2.01	-1.45	0.95
USGS	26-May-99	1570	5.4	45.6	7.36	1.69	3.82	2.83	-1.33	1.73
USGS	27-May-99	1230	4.4	29.1	7.11	1.48	3.37	2.04	-1.58	0.78
USGS	1-Jun-99	1040	5.3	29.7	6.95	1.67	3.39	1.59	-1.35	0.81
USGS	16-Jun-99	1180	4.4	27.9	7.07	1.48	3.33	1.92	-1.58	0.71
USGS	15-Jul-99	282	7	10.6	5.64	1.95	2.36	-0.17	-0.93	-0.29
USGS	5-Aug-99	133	15	10.7	4.89	2.71	2.37	-0.52	1.06	-0.28
USGS	1-Sep-99	77	13	5.4	4.34	2.56	1.68	-0.65	0.56	-0.59

dPb

Concentration over time analysis

	dPb	SF239		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.087**	**-0.00015**
	Time	**Ln[COC]**	**[COC]**		
first:	15-May-91	2.55	13		
mid:	2-Apr-95	2.34	10		
last:	1-Sep-99	2.09	8		
	LnConc.=mTime+b >'96 r2, m:			**0.818**	**0.01189**
	26-May-99	1.51	5		
	1-Sep-99	2.68	15		

Load over time analysis

	dPb	SF239		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.078**	**0.00032**
	Time	**LnLoad**	**Load**		
first:	15-May-91	1.73	6		
mid:	2-Apr-95	2.19	9		
last:	1-Sep-99	2.70	15		
	LnLoad=mTime+b >'96 r2, m:			**0.940**	**-0.01932**
	26-May-99	3.59	36		
	1-Sep-99	1.69	5		

	max r2:	0.837		max r2:	0.946	
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.087	-0.00015	7.61	0.078	0.00032	-8.94
	0.200	-0.00022	10.10	0.085	0.00035	-9.94
	0.272	-0.00026	11.62	0.060	0.00029	-7.98
	0.275	-0.00027	11.77	0.050	0.00027	-7.11
	0.277	-0.00027	11.92	0.042	0.00025	-6.31
	0.275	-0.00027	11.99	0.034	0.00022	-5.34
	0.273	-0.00028	12.06	0.026	0.00019	-4.37
	0.276	-0.00028	12.22	0.020	0.00017	-3.50
	0.278	-0.00029	12.40	0.015	0.00014	-2.65
	0.286	-0.00029	12.68	0.008	0.00011	-1.29
	0.295	-0.00030	13.00	0.003	0.00006	0.22
	0.298	-0.00031	13.22	0.002	0.00005	0.84
	0.297	-0.00031	13.34	0.001	0.00004	0.95
	0.314	-0.00033	13.84	0.001	0.00005	0.86
	0.358	-0.00035	14.74	0.005	0.00009	-0.64
	0.364	-0.00036	15.08	0.009	0.00012	-1.72
	0.389	-0.00038	15.75	0.013	0.00014	-2.60
	0.385	-0.00038	15.90	0.015	0.00016	-3.18
	0.373	-0.00038	15.82	0.015	0.00016	-3.20
	0.368	-0.00039	15.96	0.010	0.00013	-2.09
	0.354	-0.00038	15.85	0.004	0.00009	-0.66
	0.354	-0.00039	16.13	0.001	0.00003	1.36
	0.380	-0.00041	16.99	0.002	-0.00006	4.74
	0.350	-0.00039	16.18	0.007	-0.00011	6.54
	0.348	-0.00040	16.44	0.022	-0.00020	9.59
	0.407	-0.00044	17.95	0.030	-0.00023	10.94
	0.415	-0.00046	18.57	0.031	-0.00024	11.28
	0.397	-0.00045	18.46	0.031	-0.00025	11.66
	0.405	-0.00047	19.19	0.015	-0.00017	8.81
	0.397	-0.00048	19.53	0.008	-0.00014	7.42
	0.380	-0.00049	19.67	0.004	-0.00009	5.86
	0.404	-0.00053	21.16	0.006	0.00011	-1.62
	0.420	-0.00057	22.68	0.063	0.00036	-10.46
	0.394	-0.00058	23.03	0.099	0.00048	-14.80
	0.374	-0.00061	23.95	0.135	0.00061	-19.55
	0.352	-0.00065	25.39	0.119	0.00064	-20.58
	0.312	-0.00069	27.13	0.090	0.00064	-20.69
	0.293	-0.00085	32.89	0.050	0.00061	-19.69
	0.207	-0.00134	50.66	0.030	0.00095	-31.79
	0.021	-0.00051	20.35	0.070	0.00203	-70.94
	0.018	-0.00062	24.34	0.390	0.00601	-215.40
	0.000	-0.00006	4.27	0.283	0.00521	-186.42
	0.010	0.00055	-18.05	0.176	0.00426	-151.90
	0.193	0.00250	-88.77	0.109	0.00372	-132.41
	0.224	0.00321	-114.67	0.007	0.00099	-33.02

0.361	0.00582	-209.64	0.393	-0.00843	308.93
0.726	0.00949	-342.83	0.445	-0.01047	383.19
0.670	0.00939	-339.24	0.707	-0.01474	538.31
0.825	0.01157	-418.54	0.939	-0.01882	687.01
0.818	0.01189	-430.12	0.940	-0.01932	705.06
0.837	0.01284	-464.70	0.946	-0.01803	658.05
0.798	0.01303	-471.80	0.943	-0.01894	691.28

update for EV, CV:

dPb SF239
LN Analysis dPb

Load **Load Data, EV=15.6 lbs/day CV=1.11**

			Load Data-based LN	
Avg:	**16**	**u**	**ln dPb Load**	**dPb Load**
SD:	**17**	3	5.0	154
CV:	**1.11**	0	2.34	10
Min:	**1.8**	-3	-0.35	0.7
Max:	**94**			
Median:	**10**			

16	15.6
1.11	1.11

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.97, EV=16lbs/day CV=1.29; max r2=0.99**

r2 u,lnLoad:	0.970	u	lnLoad	Load			
slope, m:	1.008	3	5.25	191			
intercept, b:	-2.296	0	2.28	10			
N:	56	-3	-0.70	0.5			
E[Load]:	16.0	Parameter Estimates				0.970	0.97
SD[Load]:	21	from LN regression				16.0	16
CV[Load]:	1.29	update graph label				1.3	1.29

N: 56

Date	dPb Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.991 r2 forward	
update and rank for new data							
3-Oct-91	1.8	1	0.0111	-2.287	0.594	0.970	
5-Oct-94	2.2	2	0.0289	-1.897	0.796	0.975	
22-Oct-98	2.5	3	0.0467	-1.678	0.934	0.977	
15-Feb-94	3.0	4	0.0644	-1.518	1.095	0.980	
15-Feb-94	3.0	5	0.0822	-1.390	1.105	0.983	
29-Oct-93	3.2	6	0.1000	-1.282	1.164	0.985	
20-Dec-93	3.2	7	0.1178	-1.186	1.167	0.986	
17-Nov-98	3.5	8	0.1356	-1.101	1.246	0.987	
20-Dec-93	3.5	9	0.1533	-1.022	1.264	0.988	
2-Dec-93	3.6	10	0.1711	-0.950	1.285	0.988	
14-Dec-94	3.7	11	0.1889	-0.882	1.299	0.988	
9-Sep-94	3.8	12	0.2067	-0.818	1.347	0.988	
29-Dec-98	3.9	13	0.2244	-0.757	1.358	0.987	
29-Dec-98	4.0	14	0.2422	-0.699	1.375	0.986	
19-Jan-94	4.1	15	0.2600	-0.643	1.406	0.986	
19-Jan-94	4.5	16	0.2778	-0.589	1.505	0.985	
16-Aug-94	4.8	17	0.2956	-0.537	1.559	0.984	
23-Jul-94	5.2	18	0.3133	-0.486	1.658	0.983	
15-Aug-95	5.3	19	0.3311	-0.437	1.659	0.982	
1-Sep-99	5.4	20	0.3489	-0.388	1.684	0.981	
26-Jul-95	5.5	21	0.3667	-0.341	1.704	0.981	
15-Nov-94	5.8	22	0.3844	-0.294	1.763	0.981	
10-Dec-98	6.1	23	0.4022	-0.248	1.808	0.981	
12-Jul-95	6.3	24	0.4200	-0.202	1.842	0.982	
14-Sep-95	6.6	25	0.4378	-0.157	1.886	0.983	
7-Mar-94	6.9	26	0.4556	-0.112	1.934	0.986	
11-Jan-95	9.4	27	0.4733	-0.067	2.239	0.991	
15-May-91	10.1	28	0.4911	-0.022	2.313	0.990	
24-Jun-94	10.2	29	0.5089	0.022	2.319	0.990	
15-Jul-99	10.6	30	0.5267	0.067	2.363	0.989	
23-Mar-94	10.7	31	0.5444	0.112	2.371	0.988	
5-Aug-99	10.7	32	0.5622	0.157	2.373	0.988	
6-Apr-94	12.7	33	0.5800	0.202	2.541	0.988	
28-Jun-95	13.5	34	0.5978	0.248	2.601	0.988	
7-Nov-97	13.6	35	0.6156	0.294	2.609	0.987	
19-Apr-99	14.2	36	0.6333	0.341	2.650	0.986	
8-Jun-94	14.8	37	0.6511	0.388	2.692	0.984	
9-Feb-95	15.3	38	0.6689	0.437	2.729	0.983	
8-Mar-95	15.4	39	0.6867	0.486	2.733	0.982	
5-May-99	17.0	40	0.7044	0.537	2.834	0.981	
13-Jun-95	17.2	41	0.7222	0.589	2.848	0.980	
20-May-94	19.0	42	0.7400	0.643	2.942	0.980	
3-May-94	23.5	43	0.7578	0.699	3.156	0.979	
25-Apr-95	23.6	44	0.7756	0.757	3.163	0.982	
24-Mar-99	24.0	45	0.7933	0.818	3.178	0.982	

13-Apr-95	25.0	46	0.8111	0.882	3.219	0.980
16-Jun-99	27.9	47	0.8289	0.950	3.330	0.977
27-May-99	29.1	48	0.8467	1.022	3.371	0.979
1-Jun-99	29.7	49	0.8644	1.101	3.390	0.980
24-May-99	32.2	50	0.8822	1.186	3.471	0.976
18-Apr-94	34.9	51	0.9000	1.282	3.554	0.970
13-May-98	36.8	52	0.9178	1.390	3.605	0.961
26-May-99	45.6	53	0.9356	1.518	3.820	
22-Mar-95	48.6	54	0.9533	1.678	3.885	
23-May-95	73.1	55	0.9711	1.897	4.291	
10-May-95	93.7	56	0.9889	2.287	4.540	

		update for EV, CV:			
dPb		**SF239**		11	10.7
LN Analysis		**dPb**		0.37	0.374
Concentration		**Conc. Data, EV=10.7 ug/L CV=0.374**			
Avg:	**11**	**Data-based LN**			
SD:	**4**	u	ln[dPb]	[dPb]	
CV:	**0.37**	3	3.4	30	
Min:	**3**	0	2.31	10	
Max:	**21**	-3	1.22	3	
Median:	**11**				

					0.936	0.936
u=mLn(Conc.)+b:					11.0	11
update for r2, EV, CV:	**r2=0.936, EV=11 ug/L CV=0.479; max r2=0.96**				0.479	0.479
	r2 u,lnConc:	0.936	u	lnConc.	Conc.	
	slope, m:	2.201	3	3.65	39	
	intercept, b:	-5.044	0	2.29	10	
	N:	56	-3	0.93	3	
	E[Conc]:	11.0	Parameter Estimates			
	SD[Conc]:	5	from LN regression			
	CV[Conc]:	0.48	update graph label			

	dPb	N: 56				max r2 0.960
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
15-May-91	3	1	0.0111	-2.287	1.099	0.936
19-Apr-99	3.6	2	0.0289	-1.897	1.281	0.932
27-May-99	4.4	3	0.0467	-1.678	1.482	0.930
16-Jun-99	4.4	4	0.0644	-1.518	1.482	0.926
24-May-99	4.9	5	0.0822	-1.390	1.589	0.925
1-Jun-99	5.3	6	0.1000	-1.282	1.668	0.923
26-May-99	5.4	7	0.1178	-1.186	1.686	0.921
29-Dec-98	5.6	8	0.1356	-1.101	1.723	0.920
29-Dec-98	5.7	9	0.1533	-1.022	1.740	0.921
3-Oct-91	6	10	0.1711	-0.950	1.792	0.927
5-May-99	6.6	11	0.1889	-0.882	1.887	0.933
18-Apr-94	7	12	0.2067	-0.818	1.946	0.936
11-Jan-95	7	13	0.2244	-0.757	1.946	0.937
15-Jul-99	7	14	0.2422	-0.699	1.946	0.943
13-May-98	7.9	15	0.2600	-0.643	2.067	0.956
24-Mar-99	8.5	16	0.2778	-0.589	2.140	0.960
6-Apr-94	9	17	0.2956	-0.537	2.197	0.959
20-May-94	9	18	0.3133	-0.486	2.197	0.957
5-Oct-94	9	19	0.3311	-0.437	2.197	0.956
17-Nov-98	9.5	20	0.3489	-0.388	2.251	0.956
15-Feb-94	10	21	0.3667	-0.341	2.303	0.953
15-Feb-94	10	22	0.3844	-0.294	2.303	0.951
10-May-95	10	23	0.4022	-0.248	2.303	0.948
29-Oct-93	11	24	0.4200	-0.202	2.398	0.945
2-Dec-93	11	25	0.4378	-0.157	2.398	0.946
19-Jan-94	11	26	0.4556	-0.112	2.398	0.947
19-Jan-94	11	27	0.4733	-0.067	2.398	0.946
7-Mar-94	11	28	0.4911	-0.022	2.398	0.945
3-May-94	11	29	0.5089	0.022	2.398	0.943
9-Feb-95	11	30	0.5267	0.067	2.398	0.940
22-Mar-95	11	31	0.5444	0.112	2.398	0.935
23-May-95	11	32	0.5622	0.157	2.398	0.931
22-Oct-98	11	33	0.5800	0.202	2.398	0.926
20-Dec-93	12	34	0.5978	0.248	2.485	0.922
20-Dec-93	12	35	0.6156	0.294	2.485	0.918
23-Mar-94	12	36	0.6333	0.341	2.485	0.913
9-Sep-94	12	37	0.6511	0.388	2.485	0.906
14-Dec-94	12	38	0.6689	0.437	2.485	0.897
8-Jun-94	13	39	0.6867	0.486	2.565	0.888
23-Jul-94	13	40	0.7044	0.537	2.565	0.884
13-Apr-95	13	41	0.7222	0.589	2.565	0.877
1-Sep-99	13	42	0.7400	0.643	2.565	0.867
25-Apr-95	14	43	0.7578	0.699	2.639	0.853
28-Jun-95	14	44	0.7756	0.757	2.639	0.858
12-Jul-95	14	45	0.7933	0.818	2.639	0.861

15-Aug-95	14	46	0.8111	0.882	2.639	0.858
10-Dec-98	14	47	0.8289	0.950	2.639	0.849
24-Jun-94	15	48	0.8467	1.022	2.708	0.830
16-Aug-94	15	49	0.8644	1.101	2.708	0.847
8-Mar-95	15	50	0.8822	1.186	2.708	0.859
13-Jun-95	15	51	0.9000	1.282	2.708	0.860
26-Jul-95	15	52	0.9178	1.390	2.708	0.837
5-Aug-99	15	53	0.9356	1.518	2.708	
14-Sep-95	18	54	0.9533	1.678	2.890	
15-Nov-94	21	55	0.9711	1.897	3.045	
7-Nov-97	21.4	56	0.9889	2.287	3.063	

update for EV, CV:

dPb		**SF239**			355	355
LN Analysis		**dPb**			1.21	1.21
Discharge, Q		**Q Data, EV=355 cfs CV=1.21**				
Avg:	**355**	**Q Data-based LN**				
SD:	**430**	u	lnQ	Q		
CV:	**1.21**	3	8.3	3914		
Min:	**43**	0	5.42	226		
Max:	**1,742**	-3	2.56	13		
Median:	**131**					
					0.912	0.912
					382.3	382
	u=mLn{Q}+b:				1.83	1.83

update for r2, EV, CV: **r2=0.912, EV=382 cfs CV=1.83; max r2=0.96**

r2 u,lnQ:	0.912	u	lnQ	Q
slope, m:	0.825	3	8.85	6962
intercept, b:	-4.299	0	5.21	183
N:	56	-3	1.57	5
E[Q]:	382.3	Parameter Estimates		
SD[Q]:	700	from LN regression		
CV[Q]:	1.83	update graph label		

N: 56

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.964 r2 forward
update and rank for new data						
22-Oct-98	43	1	0.0111	-2.287	3.761	0.912
5-Oct-94	45.76	2	0.0289	-1.897	3.823	0.928
20-Dec-93	49.76	3	0.0467	-1.678	3.907	0.937
15-Nov-94	51.58	4	0.0644	-1.518	3.943	0.945
29-Oct-93	54.12	5	0.0822	-1.390	3.991	0.950
20-Dec-93	54.85	6	0.1000	-1.282	4.005	0.955
15-Feb-94	55.57	7	0.1178	-1.186	4.018	0.959
3-Oct-91	56.1	8	0.1356	-1.101	4.027	0.962
15-Feb-94	56.11	9	0.1533	-1.022	4.027	0.963
14-Dec-94	56.79	10	0.1711	-0.950	4.039	0.964
16-Aug-94	58.89	11	0.1889	-0.882	4.076	0.964
9-Sep-94	59.6	12	0.2067	-0.818	4.088	0.964
2-Dec-93	61.06	13	0.2244	-0.757	4.112	0.963
17-Nov-98	68	14	0.2422	-0.699	4.220	0.961
26-Jul-95	68.1	15	0.2600	-0.643	4.221	0.960
14-Sep-95	68.1	16	0.2778	-0.589	4.221	0.959
19-Jan-94	68.93	17	0.2956	-0.537	4.233	0.956
15-Aug-95	69.77	18	0.3133	-0.486	4.245	0.954
23-Jul-94	75.06	19	0.3311	-0.437	4.318	0.951
19-Jan-94	76.14	20	0.3489	-0.388	4.333	0.949
1-Sep-99	77	21	0.3667	-0.341	4.344	0.946
10-Dec-98	81	22	0.3844	-0.294	4.394	0.943
12-Jul-95	83.78	23	0.4022	-0.248	4.428	0.941
7-Mar-94	116.89	24	0.4200	-0.202	4.761	0.940
7-Nov-97	118	25	0.4378	-0.157	4.771	0.937
24-Jun-94	125.94	26	0.4556	-0.112	4.836	0.933
29-Dec-98	129	27	0.4733	-0.067	4.860	0.929
29-Dec-98	129	28	0.4911	-0.022	4.860	0.925
5-Aug-99	133	29	0.5089	0.022	4.890	0.922
23-Mar-94	165.89	30	0.5267	0.067	5.111	0.920
28-Jun-95	178.93	31	0.5444	0.112	5.187	0.916
8-Mar-95	190.62	32	0.5622	0.157	5.250	0.911
8-Jun-94	210.99	33	0.5800	0.202	5.352	0.905
13-Jun-95	213.69	34	0.5978	0.248	5.365	0.899
11-Jan-95	249.07	35	0.6156	0.294	5.518	0.893
9-Feb-95	258.83	36	0.6333	0.341	5.556	0.885
6-Apr-94	262.17	37	0.6511	0.388	5.569	0.877
15-Jul-99	282	38	0.6689	0.437	5.642	0.871
25-Apr-95	313.97	39	0.6867	0.486	5.749	0.867
13-Apr-95	357.43	40	0.7044	0.537	5.879	0.863
20-May-94	391.53	41	0.7222	0.589	5.970	0.857
3-May-94	396.68	42	0.7400	0.643	5.983	0.851
5-May-99	479	43	0.7578	0.699	6.172	0.866
24-Mar-99	525	44	0.7756	0.757	6.263	0.874
15-May-91	626	45	0.7933	0.818	6.439	0.901

19-Apr-99	731	46	0.8111	0.882	6.594	0.920
22-Mar-95	821.97	47	0.8289	0.950	6.712	0.925
13-May-98	865	48	0.8467	1.022	6.763	0.918
18-Apr-94	927.99	49	0.8644	1.101	6.833	0.916
1-Jun-99	1040	50	0.8822	1.186	6.947	0.919
16-Jun-99	1180	51	0.9000	1.282	7.073	0.898
24-May-99	1220	52	0.9178	1.390	7.107	0.894
27-May-99	1230	53	0.9356	1.518	7.115	
23-May-95	1234.55	54	0.9533	1.678	7.118	
26-May-99	1570	55	0.9711	1.897	7.359	
10-May-95	1741.79	56	0.9889	2.287	7.463	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SF239 **Date:** 19-Jun-00
Chemical: dZn **Analyst:** J.MacLachlan
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	35,078	355	1,022	1,101	0.00	0.00	0.00
SD:	832	430	516	860	1.00	1.00	1.00
CV:	0.02	1.21	0.50	0.78			
Min:	33,373	43	181	263.4	-0.72	-1.63	-0.97
Max:	36,404	1,742	2,290	3,851	3.22	2.46	3.20
Median:	34,791	131	1,025	738	-0.52	0.01	-0.42

dZn SF239 : Concentration v. Discharge, Q — Q = mTime +b — LnQ = mTime +b

Conc. = mQ+b (r2=0.504)	update r2	0.50	0.504	r2:	0.117	0.121	
r2 Q,[COC]:	0.50	[tCd]	Q	m:	0.1770	0.00047	
slope, m:	-0.9	1,287	43.0	b:	-5855	-11.32	
intercept, b:	1323.3	1,022	354.6				
N: 56		-159	1742				
LnConc. = mLn(Q)+b (r2=0.708)	update r2	0.71	0.708				
r2 lnQ,ln[COC]:	0.71	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.46	7.44	3.76	1,701	43		
intercept, b:	9.18	6.46	5.87	639	355		
N: 56		5.72	7.46	305	1,742		

N= 56

	Sampling Date	Q Discharge cfs	dZn Concentration ug/L	dZn Load lbs/day	Ln Q	Ln dZn Conc.	Ln dZn Load	for graph: dZn SF239 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data										
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	626	363	1222.5	6.44	5.89	7.11	0.63	-1.28	0.14
MFG	3-Oct-91	56.1	1100	332.0	4.03	7.00	5.81	-0.69	0.15	-0.89
IDEQ	29-Oct-93	54.12	1620	471.7	3.99	7.39	6.16	-0.70	1.16	-0.73
IDEQ	2-Dec-93	61.06	1580	519.0	4.11	7.37	6.25	-0.68	1.08	-0.68
IDEQ	20-Dec-93	49.76	1800	481.9	3.91	7.50	6.18	-0.71	1.51	-0.72
IDEQ	20-Dec-93	54.85	1800	531.2	4.00	7.50	6.28	-0.70	1.51	-0.66
IDEQ	19-Jan-94	68.93	1410	522.9	4.23	7.25	6.26	-0.66	0.75	-0.67
IDEQ	19-Jan-94	76.14	1410	577.6	4.33	7.25	6.36	-0.65	0.75	-0.61
IDEQ	15-Feb-94	56.11	1600	483.0	4.03	7.38	6.18	-0.69	1.12	-0.72
IDEQ	15-Feb-94	55.57	1600	478.3	4.02	7.38	6.17	-0.70	1.12	-0.72
IDEQ	7-Mar-94	116.89	1420	893.0	4.76	7.26	6.79	-0.55	0.77	-0.24
IDEQ	23-Mar-94	165.89	1450	1294.1	5.11	7.28	7.17	-0.44	0.83	0.22
IDEQ	6-Apr-94	262.17	888	1252.5	5.57	6.79	7.13	-0.21	-0.26	0.18
IDEQ	18-Apr-94	927.99	611	3050.5	6.83	6.42	8.02	1.33	-0.80	2.27
IDEQ	3-May-94	396.68	531	1133.2	5.98	6.27	7.03	0.10	-0.95	0.04
IDEQ	20-May-94	391.53	511	1076.4	5.97	6.24	6.98	0.09	-0.99	-0.03
IDEQ	8-Jun-94	210.99	794	901.3	5.35	6.68	6.80	-0.33	-0.44	-0.23
IDEQ	24-Jun-94	125.94	834	565.1	4.84	6.73	6.34	-0.53	-0.36	-0.62
IDEQ	23-Jul-94	75.06	882	356.2	4.32	6.78	5.88	-0.65	-0.27	-0.87
IDEQ	16-Aug-94	58.89	1030	326.3	4.08	6.94	5.79	-0.69	0.02	-0.90
IDEQ	9-Sep-94	59.6	1520	487.4	4.09	7.33	6.19	-0.69	0.97	-0.71
IDEQ	5-Oct-94	45.76	1070	263.4	3.82	6.98	5.57	-0.72	0.09	-0.97
IDEQ	15-Nov-94	51.58	2180	605.0	3.94	7.69	6.41	-0.70	2.25	-0.58
IDEQ	14-Dec-94	56.79	2290	699.7	4.04	7.74	6.55	-0.69	2.46	-0.47
IDEQ	11-Jan-95	249.07	1260	1688.4	5.52	7.14	7.43	-0.25	0.46	0.68
IDEQ	9-Feb-95	258.83	1170	1629.2	5.56	7.06	7.40	-0.22	0.29	0.61
IDEQ	8-Mar-95	190.62	1020	1046.0	5.25	6.93	6.95	-0.38	0.00	-0.06
IDEQ	22-Mar-95	821.97	846	3741.2	6.71	6.74	8.23	1.09	-0.34	3.07
IDEQ	13-Apr-95	357.43	885	1701.8	5.88	6.79	7.44	0.01	-0.26	0.70
IDEQ	25-Apr-95	313.97	838	1415.5	5.75	6.73	7.26	-0.09	-0.36	0.37
IDEQ	10-May-95	1741.79	411	3851.4	7.46	6.02	8.26	3.22	-1.18	3.20
IDEQ	23-May-95	1234.55	412	2736.5	7.12	6.02	7.91	2.05	-1.18	1.90
IDEQ	13-Jun-95	213.69	497	571.4	5.36	6.21	6.35	-0.33	-1.02	-0.62
IDEQ	28-Jun-95	178.93	715	688.3	5.19	6.57	6.53	-0.41	-0.59	-0.48
IDEQ	12-Jul-95	83.78	839	378.2	4.43	6.73	5.94	-0.63	-0.35	-0.84
IDEQ	26-Jul-95	68.1	1000	366.4	4.22	6.91	5.90	-0.67	-0.04	-0.85
IDEQ	15-Aug-95	69.77	1190	446.7	4.25	7.08	6.10	-0.66	0.33	-0.76
IDEQ	14-Sep-95	68.1	1350	494.6	4.22	7.21	6.20	-0.67	0.64	-0.71
URS	7-Nov-97	118	1180	749.1	4.77	7.07	6.62	-0.55	0.31	-0.41
URS	13-May-98	865	412	1917.3	6.76	6.02	7.56	1.19	-1.18	0.95
USGS	22-Oct-98	43	1200	277.6	3.76	7.09	5.63	-0.72	0.35	-0.96
USGS	17-Nov-98	68	1860	680.5	4.22	7.53	6.52	-0.67	1.63	-0.49
USGS	10-Dec-98	81	1670	727.8	4.39	7.42	6.59	-0.64	1.26	-0.43
USGS	29-Dec-98	129	1320	916.1	4.86	7.19	6.82	-0.52	0.58	-0.22
USGS	29-Dec-98	129	1370	950.8	4.86	7.22	6.86	-0.52	0.68	-0.18

USGS	24-Mar-99	525	1060	2994.0	6.26	6.97	8.00	0.40	0.07	2.20
USGS	19-Apr-99	731	705	2772.6	6.59	6.56	7.93	0.88	-0.61	1.94
USGS	5-May-99	479	543	1399.3	6.17	6.30	7.24	0.29	-0.93	0.35
USGS	24-May-99	1220	244	1601.5	7.11	5.50	7.38	2.01	-1.51	0.58
USGS	26-May-99	1570	204	1723.1	7.36	5.32	7.45	2.83	-1.58	0.72
USGS	27-May-99	1230	247	1634.5	7.11	5.51	7.40	2.04	-1.50	0.62
USGS	1-Jun-99	1040	253	1415.6	6.95	5.53	7.26	1.59	-1.49	0.37
USGS	16-Jun-99	1180	181	1149.1	7.07	5.20	7.05	1.92	-1.63	0.06
USGS	15-Jul-99	282	427	647.8	5.64	6.06	6.47	-0.17	-1.15	-0.53
USGS	5-Aug-99	133	564	403.6	4.89	6.34	6.00	-0.52	-0.89	-0.81
USGS	1-Sep-99	77	1040	430.8	4.34	6.95	6.07	-0.65	0.04	-0.78

dZn

Concentration over time analysis

				r2	Slope, m
	dZn	**SF239**		**Concentration over time**	
	LnConc.=mTime+b All data r2, m:			**0.150**	**-0.00029**
	Time	**Ln[COC]**	**[COC]**		
first:	15-May-91	7.26	1,422		
mid:	2-Apr-95	6.85	943		
last:	1-Sep-99	6.38	591		
	LnConc.=mTime+b >'96 r2, m:			**0.892**	**0.01551**
	26-May-99	5.30	199		
	1-Sep-99	6.82	912		

Load over time analysis

	dZn	**SF239**		**Load over time**	
	LnLoad=mTime+b All data r2, m:			**0.048**	**0.00018** up
	Time	**LnLoad**	**Load**		
first:	15-May-91	6.44	628		
mid:	2-Apr-95	6.70	813		
last:	1-Sep-99	6.99	1,090		
	LnLoad=mTime+b >'96 r2, m:			**0.939**	**-0.01570**
	26-May-99	7.37	1,583		
	1-Sep-99	5.83	340		

	max r2:	0.898		max r2:	0.946
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**	
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows	
	0.150	-0.00029	16.92	0.048	0.00018	0.38
	0.217	-0.00036	19.27	0.062	0.00021	-0.77
	0.222	-0.00037	19.87	0.044	0.00018	0.27
	0.211	-0.00036	19.59	0.038	0.00017	0.71
	0.201	-0.00036	19.31	0.033	0.00016	1.08
	0.189	-0.00034	18.87	0.028	0.00015	1.55
	0.175	-0.00033	18.39	0.023	0.00014	1.96
	0.166	-0.00032	18.13	0.019	0.00013	2.41
	0.156	-0.00032	17.85	0.016	0.00011	2.80
	0.144	-0.00030	17.39	0.011	0.00010	3.42
	0.131	-0.00029	16.89	0.007	0.00008	4.12
	0.120	-0.00028	16.49	0.007	0.00008	4.11
	0.108	-0.00027	16.02	0.009	0.00009	3.63
	0.108	-0.00027	16.14	0.012	0.00010	3.16
	0.119	-0.00029	16.79	0.026	0.00015	1.40
	0.137	-0.00031	17.70	0.030	0.00017	0.89
	0.160	-0.00034	18.75	0.034	0.00018	0.41
	0.166	-0.00035	19.23	0.035	0.00019	0.16
	0.170	-0.00037	19.67	0.030	0.00017	0.65
	0.173	-0.00038	20.05	0.018	0.00014	1.99
	0.169	-0.00038	20.18	0.008	0.00009	3.66
	0.152	-0.00036	19.57	0.003	0.00006	4.80
	0.145	-0.00036	19.56	0.000	-0.00001	7.31
	0.117	-0.00032	18.05	0.002	-0.00004	8.42
	0.087	-0.00027	16.21	0.004	-0.00007	9.36
	0.071	-0.00025	15.44	0.002	-0.00004	8.42
	0.058	-0.00023	14.70	0.000	-0.00001	7.41
	0.049	-0.00022	14.19	0.000	-0.00001	7.38
	0.045	-0.00021	14.09	0.007	0.00009	3.71
	0.039	-0.00021	13.82	0.017	0.00014	1.71
	0.034	-0.00020	13.66	0.029	0.00020	-0.14
	0.058	-0.00027	16.28	0.109	0.00037	-6.50
	0.096	-0.00037	19.75	0.251	0.00056	-13.39
	0.137	-0.00047	23.48	0.242	0.00059	-14.35
	0.160	-0.00056	26.54	0.257	0.00066	-16.96
	0.175	-0.00065	30.06	0.201	0.00063	-15.91
	0.179	-0.00077	34.44	0.126	0.00056	-13.39
	0.169	-0.00097	41.55	0.062	0.00050	-11.03
	0.197	-0.00206	81.14	0.003	0.00023	-1.31
	0.184	-0.00273	105.35	0.001	-0.00020	14.06
	0.451	-0.00556	208.17	0.023	0.00106	-31.57
	0.433	-0.00600	223.86	0.011	-0.00072	33.18
	0.339	-0.00556	208.00	0.061	-0.00185	74.15
	0.225	-0.00476	178.94	0.175	-0.00353	135.30
	0.110	-0.00366	138.86	0.342	-0.00588	220.52

0.001	0.00046	-10.68	0.928	-0.01379	507.89
0.151	0.00549	-193.32	0.918	-0.01447	532.69
0.470	0.01014	-362.37	0.895	-0.01399	515.19
0.879	0.01476	-530.63	0.946	-0.01563	574.91
0.892	0.01551	-557.95	0.939	-0.01570	577.23
0.875	0.01564	-562.55	0.929	-0.01523	560.20
0.898	0.01745	-628.51	0.906	-0.01452	534.58

update for EV, CV:
SF239
dZn
Load Data, EV=1100 lbs/day CV=0.781
Load Data-based LN

dZn		u	ln tCd Load	tCd Load
LN Analysis		3	8.8	6875
Load		0	6.77	868
Avg:	1,101	-3	4.70	109.6
SD:	860			
CV:	0.78			
Min:	263.4			
Max:	3,851			
Median:	738			
	1,101		1100	
	0.78		0.781	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.968, EV=1110lbs/day CV=0.827; max r2=0.98** up

r2 u,lnLoad:	0.968	u	lnLoad	Load		
slope, m:	1.386	3	8.92	7459		
intercept, b:	-9.358	0	6.75	856		
N:	56	-3	4.59	98.3		
E[Load]:	1110.8	Parameter Estimates			0.968	0.968
SD[Load]:	918	from LN regression			1110.8	1110
CV[Load]:	0.83	update graph label			0.8	0.827
					max r2	
		N: 56			0.982	

Date	dZn Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
5-Oct-94	263.4	1	0.0111	-2.287	5.574	0.968
22-Oct-98	277.6	2	0.0289	-1.897	5.626	0.974
16-Aug-94	326.3	3	0.0467	-1.678	5.788	0.975
3-Oct-91	332.0	4	0.0644	-1.518	5.805	0.978
23-Jul-94	356.2	5	0.0822	-1.390	5.875	0.978
26-Jul-95	366.4	6	0.1000	-1.282	5.904	0.979
12-Jul-95	378.2	7	0.1178	-1.186	5.935	0.980
5-Aug-99	403.6	8	0.1356	-1.101	6.000	0.980
1-Sep-99	430.8	9	0.1533	-1.022	6.066	0.980
15-Aug-95	446.7	10	0.1711	-0.950	6.102	0.980
29-Oct-93	471.7	11	0.1889	-0.882	6.156	0.981
15-Feb-94	478.3	12	0.2067	-0.818	6.170	0.982
20-Dec-93	481.9	13	0.2244	-0.757	6.178	0.982
15-Feb-94	483.0	14	0.2422	-0.699	6.180	0.982
9-Sep-94	487.4	15	0.2600	-0.643	6.189	0.982
14-Sep-95	494.6	16	0.2778	-0.589	6.204	0.981
2-Dec-93	519.0	17	0.2956	-0.537	6.252	0.980
19-Jan-94	522.9	18	0.3133	-0.486	6.259	0.979
20-Dec-93	531.2	19	0.3311	-0.437	6.275	0.977
24-Jun-94	565.1	20	0.3489	-0.388	6.337	0.976
13-Jun-95	571.4	21	0.3667	-0.341	6.348	0.975
19-Jan-94	577.6	22	0.3844	-0.294	6.359	0.973
15-Nov-94	605.0	23	0.4022	-0.248	6.405	0.972
15-Jul-99	647.8	24	0.4200	-0.202	6.474	0.971
17-Nov-98	680.5	25	0.4378	-0.157	6.523	0.970
28-Jun-95	688.3	26	0.4556	-0.112	6.534	0.968
14-Dec-94	699.7	27	0.4733	-0.067	6.551	0.967
10-Dec-98	727.8	28	0.4911	-0.022	6.590	0.966
7-Nov-97	749.1	29	0.5089	0.022	6.619	0.966
7-Mar-94	893.0	30	0.5267	0.067	6.795	0.967
8-Jun-94	901.3	31	0.5444	0.112	6.804	0.965
29-Dec-98	916.1	32	0.5622	0.157	6.820	0.962
29-Dec-98	950.8	33	0.5800	0.202	6.857	0.960
8-Mar-95	1046.0	34	0.5978	0.248	6.953	0.957
20-May-94	1076.4	35	0.6156	0.294	6.981	0.954
3-May-94	1133.2	36	0.6333	0.341	7.033	0.950
16-Jun-99	1149.1	37	0.6511	0.388	7.047	0.946
15-May-91	1222.5	38	0.6689	0.437	7.109	0.941
6-Apr-94	1252.5	39	0.6867	0.486	7.133	0.936
23-Mar-94	1294.1	40	0.7044	0.537	7.166	0.929
5-May-99	1399.3	41	0.7222	0.589	7.244	0.922
25-Apr-95	1415.5	42	0.7400	0.643	7.255	0.915
1-Jun-99	1415.6	43	0.7578	0.699	7.255	0.906
24-May-99	1601.5	44	0.7756	0.757	7.379	0.893
9-Feb-95	1629.2	45	0.7933	0.818	7.396	0.883

27-May-99	1634.5	46	0.8111	0.882	7.399	0.869
11-Jan-95	1688.4	47	0.8289	0.950	7.432	0.847
13-Apr-95	1701.8	48	0.8467	1.022	7.439	0.818
26-May-99	1723.1	49	0.8644	1.101	7.452	0.782
13-May-98	1917.3	50	0.8822	1.186	7.559	0.768
23-May-95	2736.5	51	0.9000	1.282	7.914	0.907
19-Apr-99	2772.6	52	0.9178	1.390	7.928	0.880
24-Mar-99	2994.0	53	0.9356	1.518	8.004	
18-Apr-94	3050.5	54	0.9533	1.678	8.023	
22-Mar-95	3741.2	55	0.9711	1.897	8.227	
10-May-95	3851.4	56	0.9889	2.287	8.256	

		update for EV, CV:			
dZn		SF239		1,022	1020
LN Analysis		dZn		0.50	0.505
Concentration		**Conc. Data, EV=1020 ug/L CV=0.505**			
Avg:	1,022	Data-based LN			
SD:	516	u	ln[tCd]	[tCd]	
CV:	0.50	3	8.2	3810	
Min:	181	0	6.82	912	
Max:	2,290	-3	5.39	218	
Median:	1,025				

				0.938	0.938
u=mLn(Conc.)+b:				1078.4	1080
update for r2, EV, CV:	r2=0.938, EV=1080 ug/L CV=0.738; max r2=0.98			0.738	0.738
	r2 u,lnConc:	0.938	u	lnConc.	Conc.
	slope, m:	1.517	3	8.74	6268
	intercept, b:	-10.266	0	6.77	868
	N:	56	-3	4.79	120
	E[Conc]:	1078.4	Parameter Estimates		
	SD[Conc]:	795	from LN regression		
	CV[Conc]:	0.74	update graph label		

	dZn	N: 56				max r2 0.981
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
16-Jun-99	181	1	0.0111	-2.287	5.198	0.938
26-May-99	204	2	0.0289	-1.897	5.318	0.931
24-May-99	244	3	0.0467	-1.678	5.497	0.928
27-May-99	247	4	0.0644	-1.518	5.509	0.925
1-Jun-99	253	5	0.0822	-1.390	5.533	0.927
15-May-91	363	6	0.1000	-1.282	5.894	0.936
10-May-95	411	7	0.1178	-1.186	6.019	0.934
23-May-95	412	8	0.1356	-1.101	6.021	0.931
13-May-98	412	9	0.1533	-1.022	6.021	0.929
15-Jul-99	427	10	0.1711	-0.950	6.057	0.931
13-Jun-95	497	11	0.1889	-0.882	6.209	0.936
20-May-94	511	12	0.2067	-0.818	6.236	0.936
3-May-94	531	13	0.2244	-0.757	6.275	0.937
5-May-99	543	14	0.2422	-0.699	6.297	0.941
5-Aug-99	564	15	0.2600	-0.643	6.335	0.947
18-Apr-94	611	16	0.2778	-0.589	6.415	0.957
19-Apr-99	705	17	0.2956	-0.537	6.558	0.966
28-Jun-95	715	18	0.3133	-0.486	6.572	0.967
8-Jun-94	794	19	0.3311	-0.437	6.677	0.970
24-Jun-94	834	20	0.3489	-0.388	6.726	0.969
25-Apr-95	838	21	0.3667	-0.341	6.731	0.967
12-Jul-95	839	22	0.3844	-0.294	6.732	0.966
22-Mar-95	846	23	0.4022	-0.248	6.741	0.966
23-Jul-94	882	24	0.4200	-0.202	6.782	0.967
13-Apr-95	885	25	0.4378	-0.157	6.786	0.967
6-Apr-94	888	26	0.4556	-0.112	6.789	0.970
26-Jul-95	1000	27	0.4733	-0.067	6.908	0.976
8-Mar-95	1020	28	0.4911	-0.022	6.928	0.975
16-Aug-94	1030	29	0.5089	0.022	6.937	0.974
1-Sep-99	1040	30	0.5267	0.067	6.947	0.973
24-Mar-99	1060	31	0.5444	0.112	6.966	0.973
5-Oct-94	1070	32	0.5622	0.157	6.975	0.973
3-Oct-91	1100	33	0.5800	0.202	7.003	0.975
9-Feb-95	1170	34	0.5978	0.248	7.065	0.978
7-Nov-97	1180	35	0.6156	0.294	7.073	0.977
15-Aug-95	1190	36	0.6333	0.341	7.082	0.976
22-Oct-98	1200	37	0.6511	0.388	7.090	0.976
11-Jan-95	1260	38	0.6689	0.437	7.139	0.980
29-Dec-98	1320	39	0.6867	0.486	7.185	0.981
14-Sep-95	1350	40	0.7044	0.537	7.208	0.979
29-Dec-98	1370	41	0.7222	0.589	7.223	0.976
19-Jan-94	1410	42	0.7400	0.643	7.251	0.974
19-Jan-94	1410	43	0.7578	0.699	7.251	0.972
7-Mar-94	1420	44	0.7756	0.757	7.258	0.968
23-Mar-94	1450	45	0.7933	0.818	7.279	0.964

9-Sep-94	1520	46	0.8111	0.882	7.326	0.960
2-Dec-93	1580	47	0.8289	0.950	7.365	0.954
15-Feb-94	1600	48	0.8467	1.022	7.378	0.954
15-Feb-94	1600	49	0.8644	1.101	7.378	0.953
29-Oct-93	1620	50	0.8822	1.186	7.390	0.943
10-Dec-98	1670	51	0.9000	1.282	7.421	0.925
20-Dec-93	1800	52	0.9178	1.390	7.496	0.898
20-Dec-93	1800	53	0.9356	1.518	7.496	
17-Nov-98	1860	54	0.9533	1.678	7.528	
15-Nov-94	2180	55	0.9711	1.897	7.687	
14-Dec-94	2290	56	0.9889	2.287	7.736	

update for EV, CV:

dZn		**SF239**			355	355
LN Analysis		**dZn**			1.21	1.21
Discharge, Q		**Q Data, EV=355 cfs CV=1.21**				
Avg:	**355**	**Q Data-based LN**				
SD:	**430**	u	lnQ	Q		
CV:	**1.21**	3	8.3	3914		
Min:	**43**	0	5.42	226		
Max:	**1,742**	-3	2.56	13		
Median:	**131**					
					0.912	0.912
					382.3	382
	u=mLn{Q}+b:				1.83	1.83

update for r2, EV, CV: **r2=0.912, EV=382 cfs CV=1.83; max r2=0.96**

r2 u,lnQ:	0.912	u	lnQ	Q
slope, m:	0.825	3	8.85	6962
intercept, b:	-4.299	0	5.21	183
N:	56	-3	1.57	5
E[Q]:	382.3	Parameter Estimates		
SD[Q]:	700	from LN regression		
CV[Q]:	1.83	update graph label		

	Q	N: 56				max r2 0.964
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
22-Oct-98	43	1	0.0111	-2.287	3.761	0.912
5-Oct-94	45.76	2	0.0289	-1.897	3.823	0.928
20-Dec-93	49.76	3	0.0467	-1.678	3.907	0.937
15-Nov-94	51.58	4	0.0644	-1.518	3.943	0.945
29-Oct-93	54.12	5	0.0822	-1.390	3.991	0.950
20-Dec-93	54.85	6	0.1000	-1.282	4.005	0.955
15-Feb-94	55.57	7	0.1178	-1.186	4.018	0.959
3-Oct-91	56.1	8	0.1356	-1.101	4.027	0.962
15-Feb-94	56.11	9	0.1533	-1.022	4.027	0.963
14-Dec-94	56.79	10	0.1711	-0.950	4.039	0.964
16-Aug-94	58.89	11	0.1889	-0.882	4.076	0.964
9-Sep-94	59.6	12	0.2067	-0.818	4.088	0.964
2-Dec-93	61.06	13	0.2244	-0.757	4.112	0.963
17-Nov-98	68	14	0.2422	-0.699	4.220	0.961
26-Jul-95	68.1	15	0.2600	-0.643	4.221	0.960
14-Sep-95	68.1	16	0.2778	-0.589	4.221	0.959
19-Jan-94	68.93	17	0.2956	-0.537	4.233	0.956
15-Aug-95	69.77	18	0.3133	-0.486	4.245	0.954
23-Jul-94	75.06	19	0.3311	-0.437	4.318	0.951
19-Jan-94	76.14	20	0.3489	-0.388	4.333	0.949
1-Sep-99	77	21	0.3667	-0.341	4.344	0.946
10-Dec-98	81	22	0.3844	-0.294	4.394	0.943
12-Jul-95	83.78	23	0.4022	-0.248	4.428	0.941
7-Mar-94	116.89	24	0.4200	-0.202	4.761	0.940
7-Nov-97	118	25	0.4378	-0.157	4.771	0.937
24-Jun-94	125.94	26	0.4556	-0.112	4.836	0.933
29-Dec-98	129	27	0.4733	-0.067	4.860	0.929
29-Dec-98	129	28	0.4911	-0.022	4.860	0.925
5-Aug-99	133	29	0.5089	0.022	4.890	0.922
23-Mar-94	165.89	30	0.5267	0.067	5.111	0.920
28-Jun-95	178.93	31	0.5444	0.112	5.187	0.916
8-Mar-95	190.62	32	0.5622	0.157	5.250	0.911
8-Jun-94	210.99	33	0.5800	0.202	5.352	0.905
13-Jun-95	213.69	34	0.5978	0.248	5.365	0.899
11-Jan-95	249.07	35	0.6156	0.294	5.518	0.893
9-Feb-95	258.83	36	0.6333	0.341	5.556	0.885
6-Apr-94	262.17	37	0.6511	0.388	5.569	0.877
15-Jul-99	282	38	0.6689	0.437	5.642	0.871
25-Apr-95	313.97	39	0.6867	0.486	5.749	0.867
13-Apr-95	357.43	40	0.7044	0.537	5.879	0.863
20-May-94	391.53	41	0.7222	0.589	5.970	0.857
3-May-94	396.68	42	0.7400	0.643	5.983	0.851
5-May-99	479	43	0.7578	0.699	6.172	0.866
24-Mar-99	525	44	0.7756	0.757	6.263	0.874
15-May-91	626	45	0.7933	0.818	6.439	0.901

19-Apr-99	731	46	0.8111	0.882	6.594	0.920
22-Mar-95	821.97	47	0.8289	0.950	6.712	0.925
13-May-98	865	48	0.8467	1.022	6.763	0.918
18-Apr-94	927.99	49	0.8644	1.101	6.853	0.916
1-Jun-99	1040	50	0.8822	1.186	6.947	0.919
16-Jun-99	1180	51	0.9000	1.282	7.073	0.898
24-May-99	1220	52	0.9178	1.390	7.107	0.894
27-May-99	1230	53	0.9356	1.518	7.115	
23-May-95	1234.55	54	0.9533	1.678	7.118	
26-May-99	1570	55	0.9711	1.897	7.359	
10-May-95	1741.79	56	0.9889	2.287	7.463	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.	see comment
Station: SF239	Date: 19-Jun-00
Chemical: tCd	Analyst: J.MacLachlan
Notes:	
Input Discharge and Concentration Data below (in red)	

	Date	Discharge	Concentration	Load			
Avg:	35,058	359	7	9	0.00	0.00	0.00
SD:	827	433	3	10	1.00	1.00	1.00
CV:	0.02	1.21	0.40	1.08			
Min:	33,373	43	2	1.9	-0.73	-1.76	-0.74
Max:	36,404	1,742	15	51	3.19	2.96	4.23
Median:	34,780	133	7	5	-0.52	0.13	-0.44

tCd SF239			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.408)		update r2	0.41	0.408	r2:	0.131	0.130
r2 Q,[COC]:	0.41	[tCd]	Q		m:	0.1892	0.00050
slope, m:	-0.004	8	43.0		b:	-6275	-12.19
intercept, b:	8.3	7	358.7				
N: 55		1	1742				
LnConc. = mLn(Q)+b (r2=0.594)		update r2	0.59	0.594			
r2 lnQ,ln[COC]:	0.59	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.32	2.30	3.76	10	43		
intercept, b:	3.51	1.61	5.88	5	359		
N: 55		1.10	7.46	3	1,742		

N= 55

	Sampling Date	Q Discharge cfs	tCd Concentration ug/L	tCd Load lbs/day	Ln Q	Ln tCd Conc.	Ln tCd Load	tCd SF239 Standardized Values = (x - Avg)/SD for graph 0		
update for new data								Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	626	2.3	7.7	6.44	0.83	2.05	0.62	-1.65	-0.14
MFG	3-Oct-91	56.1	8	2.4	4.03	2.08	0.88	-0.70	0.42	-0.68
IDEQ	29-Oct-93	54.12	8	2.3	3.99	2.08	0.85	-0.70	0.42	-0.69
IDEQ	2-Dec-93	61.06	7.9	2.6	4.11	2.07	0.95	-0.69	0.38	-0.66
IDEQ	20-Dec-93	49.76	10.7	2.9	3.91	2.37	1.05	-0.71	1.40	-0.64
IDEQ	20-Dec-93	54.85	10.7	3.2	4.00	2.37	1.15	-0.70	1.40	-0.61
IDEQ	19-Jan-94	68.93	8.6	3.2	4.23	2.15	1.16	-0.67	0.64	-0.60
IDEQ	19-Jan-94	76.14	8.6	3.5	4.33	2.15	1.26	-0.65	0.64	-0.57
IDEQ	15-Feb-94	56.11	9.4	2.8	4.03	2.24	1.04	-0.70	0.93	-0.64
IDEQ	15-Feb-94	55.57	9.4	2.8	4.02	2.24	1.03	-0.70	0.93	-0.64
IDEQ	7-Mar-94	116.89	7.1	4.5	4.76	1.96	1.50	-0.56	0.09	-0.47
IDEQ	23-Mar-94	165.89	8.3	7.4	5.11	2.12	2.00	-0.45	0.53	-0.17
IDEQ	6-Apr-94	262.17	5.5	7.8	5.57	1.70	2.05	-0.22	-0.49	-0.14
IDEQ	18-Apr-94	927.99	5.8	29.0	6.83	1.76	3.37	1.31	-0.38	2.02
IDEQ	3-May-94	396.68	3.6	7.7	5.98	1.28	2.04	0.09	-1.18	-0.14
IDEQ	20-May-94	391.53	4	8.4	5.97	1.39	2.13	0.08	-1.03	-0.07
IDEQ	8-Jun-94	210.99	5.2	5.9	5.35	1.65	1.78	-0.34	-0.60	-0.33
IDEQ	24-Jun-94	125.94	6.6	4.5	4.84	1.89	1.50	-0.54	-0.09	-0.47
IDEQ	23-Jul-94	75.06	7	2.8	4.32	1.95	1.04	-0.65	0.06	-0.64
IDEQ	16-Aug-94	58.89	8.4	2.7	4.08	2.13	0.98	-0.69	0.57	-0.66
IDEQ	9-Sep-94	59.6	9.1	2.9	4.09	2.21	1.07	-0.69	0.82	-0.63
IDEQ	5-Oct-94	45.76	8.5	2.1	3.82	2.14	0.74	-0.72	0.60	-0.71
IDEQ	15-Nov-94	51.58	12	3.3	3.94	2.48	1.20	-0.71	1.87	-0.59
IDEQ	14-Dec-94	56.79	15	4.6	4.04	2.71	1.52	-0.70	2.96	-0.46
IDEQ	11-Jan-95	249.07	7.8	10.5	5.52	2.05	2.35	-0.25	0.35	0.14
IDEQ	9-Feb-95	258.83	8.3	11.6	5.56	2.12	2.45	-0.23	0.53	0.25
IDEQ	8-Mar-95	190.62	7	7.2	5.25	1.95	1.97	-0.39	0.06	-0.20
IDEQ	22-Mar-95	821.97	8.8	38.9	6.71	2.17	3.66	1.07	0.71	3.04
IDEQ	13-Apr-95	357.43	6.1	11.7	5.88	1.81	2.46	0.00	-0.27	0.27
IDEQ	25-Apr-95	313.97	7.2	12.2	5.75	1.97	2.50	-0.10	0.13	0.31
IDEQ	10-May-95	1741.79	5.4	50.6	7.46	1.69	3.92	3.19	-0.52	4.23
IDEQ	23-May-95	1234.55	3.3	21.9	7.12	1.19	3.09	2.02	-1.28	1.31
IDEQ	13-Jun-95	213.69	4	4.6	5.36	1.39	1.53	-0.33	-1.03	-0.46
IDEQ	28-Jun-95	178.93	5.8	5.6	5.19	1.76	1.72	-0.42	-0.38	-0.36
IDEQ	12-Jul-95	83.78	6	2.7	4.43	1.79	0.99	-0.63	-0.31	-0.65
IDEQ	26-Jul-95	68.1	7.8	2.9	4.22	2.05	1.05	-0.67	0.35	-0.64
IDEQ	15-Aug-95	69.77	7.6	2.9	4.25	2.03	1.05	-0.67	0.28	-0.64
IDEQ	14-Sep-95	68.1	8.6	3.2	4.22	2.15	1.15	-0.67	0.64	-0.61
URS	7-Nov-97	118	7.2	4.6	4.77	1.97	1.52	-0.56	0.13	-0.46
URS	13-May-98	865	2.6	12.1	6.76	0.96	2.49	1.17	-1.54	0.31
USGS	22-Oct-98	43	8	1.9	3.76	2.08	0.62	-0.73	0.42	-0.74
USGS	17-Nov-98	68	11	4.0	4.22	2.40	1.39	-0.67	1.51	-0.52
USGS	10-Dec-98	81	11	4.8	4.39	2.40	1.57	-0.64	1.51	-0.44
USGS	29-Dec-98	129	8	5.6	4.86	2.08	1.71	-0.53	0.42	-0.36
USGS	24-Mar-99	525	8	22.6	6.26	2.08	3.12	0.38	0.42	1.37

USGS	19-Apr-99	731	5	19.7	6.59	1.61	2.98	0.86	-0.67	1.08
USGS	5-May-99	479	4	10.3	6.17	1.39	2.33	0.28	-1.03	0.12
USGS	24-May-99	1220	3	19.7	7.11	1.10	2.98	1.99	-1.39	1.08
USGS	26-May-99	1570	4	33.8	7.36	1.39	3.52	2.80	-1.03	2.52
USGS	27-May-99	1230	2	13.2	7.11	0.69	2.58	2.01	-1.76	0.42
USGS	1-Jun-99	1040	2	11.2	6.95	0.69	2.42	1.57	-1.76	0.21
USGS	16-Jun-99	1180	2	12.7	7.07	0.69	2.54	1.90	-1.76	0.37
USGS	15-Jul-99	282	3.2	4.9	5.64	1.16	1.58	-0.18	-1.32	-0.43
USGS	5-Aug-99	133	5	3.6	4.89	1.61	1.27	-0.52	-0.67	-0.56
USGS	1-Sep-99	77	6.9	2.9	4.34	1.93	1.05	-0.65	0.02	-0.64

tCd

Concentration over time analysis

	tCd	SF239		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.130**	**-0.00021**
	Time	**Ln[COC]**	**[COC]**		
first:	15-May-91	2.17	9		
mid:	22-Mar-95	1.88	7		
last:	1-Sep-99	1.54	5		
	LnConc.=mTime+b >'96 r2, m:			**0.963**	**0.01366**
	27-May-99	0.58	2		
	1-Sep-99	1.91	7		

Load over time analysis

	tCd	SF239			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.083**	**0.00029**
	Time	**LnLoad**	**Load**		
first:	15-May-91	1.33	4		
mid:	22-Mar-95	1.74	6		
last:	1-Sep-99	2.20	9		
	LnLoad=mTime+b >'96 r2, m:			**0.936**	**-0.01720**
	27-May-99	2.60	13		
	1-Sep-99	0.93	3		

max r2:	0.972		max r2:	0.936	
Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.130	-0.00021	9.13	0.083	0.00029	-8.28
0.227	-0.00027	11.49	0.097	0.00032	-9.54
0.226	-0.00028	11.83	0.080	0.00030	-8.79
0.222	-0.00028	11.83	0.070	0.00028	-8.07
0.218	-0.00028	11.84	0.062	0.00026	-7.42
0.206	-0.00028	11.53	0.054	0.00025	-6.82
0.193	-0.00027	11.19	0.047	0.00023	-6.27
0.185	-0.00026	11.06	0.040	0.00022	-5.69
0.177	-0.00026	10.91	0.035	0.00020	-5.16
0.166	-0.00025	10.65	0.027	0.00018	-4.35
0.155	-0.00024	10.36	0.020	0.00015	-3.44
0.152	-0.00024	10.38	0.017	0.00014	-3.03
0.143	-0.00024	10.21	0.018	0.00015	-3.22
0.150	-0.00025	10.55	0.019	0.00015	-3.48
0.155	-0.00026	10.86	0.037	0.00021	-5.60
0.189	-0.00029	11.88	0.040	0.00022	-6.01
0.222	-0.00031	12.85	0.044	0.00024	-6.61
0.239	-0.00033	13.50	0.043	0.00024	-6.70
0.243	-0.00034	13.82	0.038	0.00023	-6.33
0.243	-0.00035	14.06	0.028	0.00020	-5.12
0.233	-0.00034	13.99	0.018	0.00016	-3.65
0.218	-0.00034	13.74	0.010	0.00012	-2.16
0.206	-0.00033	13.58	0.002	0.00005	0.20
0.178	-0.00031	12.66	0.000	0.00001	1.89
0.142	-0.00026	11.11	0.001	-0.00003	3.12
0.129	-0.00026	10.80	0.000	-0.00002	2.65
0.111	-0.00024	10.28	0.000	0.00001	1.85
0.101	-0.00024	10.10	0.000	0.00000	2.16
0.079	-0.00021	9.22	0.009	0.00012	-2.29
0.075	-0.00021	9.27	0.015	0.00017	-3.95
0.061	-0.00020	8.75	0.027	0.00023	-6.16
0.062	-0.00021	9.22	0.123	0.00046	-14.63
0.108	-0.00029	12.09	0.249	0.00067	-22.07
0.153	-0.00037	14.99	0.251	0.00072	-23.83
0.165	-0.00042	16.76	0.278	0.00082	-27.65
0.179	-0.00049	19.31	0.232	0.00082	-27.47
0.157	-0.00053	20.79	0.181	0.00082	-27.66
0.140	-0.00065	24.96	0.115	0.00082	-27.77
0.115	-0.00116	43.49	0.048	0.00104	-35.67
0.088	-0.00141	52.52	0.017	0.00087	-29.25
0.416	-0.00398	145.97	0.079	0.00249	-88.02
0.389	-0.00432	158.13	0.003	0.00047	-14.74
0.270	-0.00387	141.90	0.019	-0.00140	53.03
0.101	-0.00256	94.13	0.154	-0.00478	175.78
0.000	-0.00011	5.31	0.725	-0.01436	523.89

0.136	0.00382	-137.61	0.729	-0.01613	588.41
0.369	0.00677	-244.93	0.721	-0.01735	632.62
0.593	0.00939	-340.11	0.858	-0.02100	765.44
0.644	0.01042	-377.63	0.839	-0.02079	757.54
0.963	0.01366	-495.55	0.936	-0.01720	627.20
0.972	0.01464	-530.95	0.916	-0.01734	632.14

update for EV, CV:

tCd		**SF239**		
LN Analysis		**tCd**		
Load		**Load Data, EV=9.1 lbs/day CV=1.08**		
Avg:	**9**	**Load Data-based LN**		
SD:	**10**	u	ln tCd Load	tCd Load
CV:	**1.08**	3	4.5	86
Min:	**1.9**	0	1.82	6
Max:	**51**	-3	-0.81	0.4
Median:	**5**			
		9	9.1	
		1.08	1.08	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.929, EV=9.06lbs/day CV=1.08; max r2=0.99**

r2 u,lnLoad:	0.929	u	lnLoad	Load		
slope, m:	1.135	3	4.46	86		
intercept, b:	-2.062	0	1.82	6		
N:	55	-3	-0.83	0.4		
E[Load]:	9.1	Parameter Estimates			0.929	0.929
SD[Load]:	10	from LN regression			9.1	9.06
CV[Load]:	1.08	update graph label			1.1	1.08
					max r2	
		N: 55			0.990	

Date	tCd Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
22-Oct-98	**1.9**	1	0.0113	-2.280	0.616	0.929
5-Oct-94	**2.1**	2	0.0294	-1.890	0.738	0.940
29-Oct-93	**2.3**	3	0.0475	-1.669	0.846	0.947
3-Oct-91	**2.4**	4	0.0656	-1.509	0.882	0.954
2-Dec-93	**2.6**	5	0.0837	-1.381	0.954	0.960
16-Aug-94	**2.7**	6	0.1018	-1.271	0.979	0.966
12-Jul-95	**2.7**	7	0.1199	-1.175	0.995	0.971
15-Feb-94	**2.8**	8	0.1380	-1.089	1.033	0.976
23-Jul-94	**2.8**	9	0.1561	-1.011	1.039	0.980
15-Feb-94	**2.8**	10	0.1742	-0.938	1.043	0.983
15-Aug-95	**2.9**	11	0.1923	-0.869	1.048	0.986
26-Jul-95	**2.9**	12	0.2104	-0.805	1.050	0.988
1-Sep-99	**2.9**	13	0.2285	-0.744	1.050	0.989
20-Dec-93	**2.9**	14	0.2466	-0.685	1.052	0.990
9-Sep-94	**2.9**	15	0.2647	-0.629	1.071	0.990
14-Sep-95	**3.2**	16	0.2828	-0.575	1.148	0.989
20-Dec-93	**3.2**	17	0.3009	-0.522	1.150	0.989
19-Jan-94	**3.2**	18	0.3190	-0.470	1.160	0.989
15-Nov-94	**3.3**	19	0.3371	-0.420	1.203	0.988
19-Jan-94	**3.5**	20	0.3552	-0.371	1.259	0.987
5-Aug-99	**3.6**	21	0.3733	-0.323	1.275	0.987
17-Nov-98	**4.0**	22	0.3914	-0.276	1.392	0.986
7-Mar-94	**4.5**	23	0.4095	-0.229	1.496	0.985
24-Jun-94	**4.5**	24	0.4276	-0.182	1.498	0.985
7-Nov-97	**4.6**	25	0.4457	-0.137	1.520	0.985
14-Dec-94	**4.6**	26	0.4638	-0.091	1.522	0.984
13-Jun-95	**4.6**	27	0.4819	-0.045	1.526	0.983
10-Dec-98	**4.8**	28	0.5000	0.000	1.567	0.982
15-Jul-99	**4.9**	29	0.5181	0.045	1.580	0.981
29-Dec-98	**5.6**	30	0.5362	0.091	1.714	0.981
28-Jun-95	**5.6**	31	0.5543	0.137	1.720	0.979
8-Jun-94	**5.9**	32	0.5724	0.182	1.775	0.979
8-Mar-95	**7.2**	33	0.5905	0.229	1.971	0.978
23-Mar-94	**7.4**	34	0.6086	0.276	2.003	0.977
3-May-94	**7.7**	35	0.6267	0.323	2.039	0.975
15-May-91	**7.7**	36	0.6448	0.371	2.047	0.973
6-Apr-94	**7.8**	37	0.6629	0.420	2.049	0.971
20-May-94	**8.4**	38	0.6810	0.470	2.131	0.969
5-May-99	**10.3**	39	0.6991	0.522	2.333	0.967
11-Jan-95	**10.5**	40	0.7172	0.575	2.347	0.965
1-Jun-99	**11.2**	41	0.7353	0.629	2.415	0.963
9-Feb-95	**11.6**	42	0.7534	0.685	2.447	0.961
13-Apr-95	**11.7**	43	0.7715	0.744	2.462	0.957
13-May-98	**12.1**	44	0.7896	0.805	2.493	0.952
25-Apr-95	**12.2**	45	0.8077	0.869	2.498	0.944

16-Jun-99	12.7	46	0.8258	0.938	2.541	0.937
27-May-99	13.2	47	0.8439	1.011	2.583	0.936
19-Apr-99	19.7	48	0.8620	1.089	2.979	0.975
24-May-99	19.7	49	0.8801	1.175	2.980	0.972
23-May-95	21.9	50	0.8982	1.271	3.087	0.965
24-Mar-99	22.6	51	0.9163	1.381	3.118	0.952
18-Apr-94	29.0	52	0.9344	1.509	3.366	
26-May-99	33.8	53	0.9525	1.669	3.520	
22-Mar-95	38.9	54	0.9706	1.890	3.661	
10-May-95	50.6	55	0.9887	2.280	3.924	

update for EV, CV:

tCd		**SF239**	7	6.84
LN Analysis		**tCd**	0.40	0.403

Concentration — **Conc. Data, EV=6.84 ug/L CV=0.403**

		Data-based LN		
Avg:	7	u	ln[tCd]	[tCd]
SD:	3	3	3.0	20
CV:	0.40	0	1.85	6
Min:	2	-3	0.68	2
Max:	15			
Median:	7			

u=mLn(Conc.)+b: — 0.919 0.919; 7.1 7.06

update for r2, EV, CV: **r2=0.919, EV=7.06 ug/L CV=0.548; max r2=0.96** — 0.548 0.548

r2 u,lnConc:	0.919	u	lnConc.	Conc.
slope, m:	1.952	3	3.36	29
intercept, b:	-3.560	0	1.82	6
N:	55	-3	0.29	1
E[Conc]:	7.1	Parameter Estimates		
SD[Conc]:	4	from LN regression		
CV[Conc]:	0.55	update graph label		

N: 55 — max r2 0.962

Date	tCd Concentration ug/L Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
27-May-99	2	1	0.0113	-2.280	0.693	0.919
1-Jun-99	2	2	0.0294	-1.890	0.693	0.910
16-Jun-99	2	3	0.0475	-1.669	0.693	0.905
15-May-91	2.3	4	0.0656	-1.509	0.833	0.907
13-May-98	2.6	5	0.0837	-1.381	0.956	0.910
24-May-99	3	6	0.1018	-1.271	1.099	0.913
15-Jul-99	3.2	7	0.1199	-1.175	1.163	0.913
23-May-95	3.3	8	0.1380	-1.089	1.194	0.914
3-May-94	3.6	9	0.1561	-1.011	1.281	0.918
20-May-94	4	10	0.1742	-0.938	1.386	0.920
13-Jun-95	4	11	0.1923	-0.869	1.386	0.919
5-May-99	4	12	0.2104	-0.805	1.386	0.921
26-May-99	4	13	0.2285	-0.744	1.386	0.930
19-Apr-99	5	14	0.2466	-0.685	1.609	0.951
5-Aug-99	5	15	0.2647	-0.629	1.609	0.951
8-Jun-94	5.2	16	0.2828	-0.575	1.649	0.953
10-May-95	5.4	17	0.3009	-0.522	1.686	0.954
6-Apr-94	5.5	18	0.3190	-0.470	1.705	0.955
18-Apr-94	5.8	19	0.3371	-0.420	1.758	0.957
28-Jun-95	5.8	20	0.3552	-0.371	1.758	0.957
12-Jul-95	6	21	0.3733	-0.323	1.792	0.959
13-Apr-95	6.1	22	0.3914	-0.276	1.808	0.960
24-Jun-94	6.6	23	0.4095	-0.229	1.887	0.962
1-Sep-99	6.9	24	0.4276	-0.182	1.932	0.960
23-Jul-94	7	25	0.4457	-0.137	1.946	0.958
8-Mar-95	7	26	0.4638	-0.091	1.946	0.956
7-Mar-94	7.1	27	0.4819	-0.045	1.960	0.953
25-Apr-95	7.2	28	0.5000	0.000	1.974	0.950
7-Nov-97	7.2	29	0.5181	0.045	1.974	0.947
15-Aug-95	7.6	30	0.5362	0.091	2.028	0.943
11-Jan-95	7.8	31	0.5543	0.137	2.054	0.943
26-Jul-95	7.8	32	0.5724	0.182	2.054	0.945
2-Dec-93	7.9	33	0.5905	0.229	2.067	0.947
3-Oct-91	8	34	0.6086	0.276	2.079	0.950
29-Oct-93	8	35	0.6267	0.323	2.079	0.954
22-Oct-98	8	36	0.6448	0.371	2.079	0.957
29-Dec-98	8	37	0.6629	0.420	2.079	0.958
24-Mar-99	8	38	0.6810	0.470	2.079	0.958
23-Mar-94	8.3	39	0.6991	0.522	2.116	0.956
9-Feb-95	8.3	40	0.7172	0.575	2.116	0.958
16-Aug-94	8.4	41	0.7353	0.629	2.128	0.959
5-Oct-94	8.5	42	0.7534	0.685	2.140	0.959
19-Jan-94	8.6	43	0.7715	0.744	2.152	0.959
19-Jan-94	8.6	44	0.7896	0.805	2.152	0.959
14-Sep-95	8.6	45	0.8077	0.869	2.152	0.955

22-Mar-95	8.8	46	0.8258	0.938	2.175	0.947
9-Sep-94	9.1	47	0.8439	1.011	2.208	0.937
15-Feb-94	9.4	48	0.8620	1.089	2.241	0.924
15-Feb-94	9.4	49	0.8801	1.175	2.241	0.906
20-Dec-93	10.7	50	0.8982	1.271	2.370	0.883
20-Dec-93	10.7	51	0.9163	1.381	2.370	0.916
17-Nov-98	11	52	0.9344	1.509	2.398	
10-Dec-98	11	53	0.9525	1.669	2.398	
15-Nov-94	12	54	0.9706	1.890	2.485	
14-Dec-94	15	55	0.9887	2.280	2.708	

update for EV, CV:

tCd		SF239			359	359
LN Analysis		tCd			1.21	1.21

Discharge, Q — **Q Data, EV=359 cfs CV=1.21**

		Q Data-based LN		
Avg:	359	u	lnQ	Q
SD:	433	3	8.3	3934
CV:	1.21	0	5.43	229
Min:	43	-3	2.59	13
Max:	1,742			
Median:	133			

		0.910	0.91
		390.2	390
u=mLn(Q)+b:		1.86	1.86

update for r2, EV, CV: **r2=0.91, EV=390 cfs CV=1.86; max r2=0.96**

r2 u,lnQ:	0.910	u	lnQ	Q
slope, m:	0.817	3	8.89	7253
intercept, b:	-4.264	0	5.22	185
N:	55	-3	1.55	5
E[Q]:	390.2	Parameter Estimates		
SD[Q]:	727	from LN regression		
CV[Q]:	1.86	update graph label		

N: 55 — max r2 0.962

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
22-Oct-98	43	1	0.0113	-2.280	3.761	0.910
5-Oct-94	45.76	2	0.0294	-1.890	3.823	0.926
20-Dec-93	49.76	3	0.0475	-1.669	3.907	0.936
15-Nov-94	51.58	4	0.0656	-1.509	3.943	0.943
29-Oct-93	54.12	5	0.0837	-1.381	3.991	0.949
20-Dec-93	54.85	6	0.1018	-1.271	4.005	0.954
15-Feb-94	55.57	7	0.1199	-1.175	4.018	0.957
3-Oct-91	56.1	8	0.1380	-1.089	4.027	0.960
15-Feb-94	56.11	9	0.1561	-1.011	4.027	0.961
14-Dec-94	56.79	10	0.1742	-0.938	4.039	0.962
16-Aug-94	58.89	11	0.1923	-0.869	4.076	0.962
9-Sep-94	59.6	12	0.2104	-0.805	4.088	0.961
2-Dec-93	61.06	13	0.2285	-0.744	4.112	0.960
17-Nov-98	68	14	0.2466	-0.685	4.220	0.959
26-Jul-95	68.1	15	0.2647	-0.629	4.221	0.957
14-Sep-95	68.1	16	0.2828	-0.575	4.221	0.955
19-Jan-94	68.93	17	0.3009	-0.522	4.233	0.953
15-Aug-95	69.77	18	0.3190	-0.470	4.245	0.950
23-Jul-94	75.06	19	0.3371	-0.420	4.318	0.947
19-Jan-94	76.14	20	0.3552	-0.371	4.333	0.944
1-Sep-99	77	21	0.3733	-0.323	4.344	0.941
10-Dec-98	81	22	0.3914	-0.276	4.394	0.939
12-Jul-95	83.78	23	0.4095	-0.229	4.428	0.937
7-Mar-94	116.89	24	0.4276	-0.182	4.761	0.937
7-Nov-97	118	25	0.4457	-0.137	4.771	0.933
24-Jun-94	125.94	26	0.4638	-0.091	4.836	0.929
29-Dec-98	129	27	0.4819	-0.045	4.860	0.926
5-Aug-99	133	28	0.5000	0.000	4.890	0.923
23-Mar-94	165.89	29	0.5181	0.045	5.111	0.921
28-Jun-95	178.93	30	0.5362	0.091	5.187	0.917
8-Mar-95	190.62	31	0.5543	0.137	5.250	0.911
8-Jun-94	210.99	32	0.5724	0.182	5.352	0.906
13-Jun-95	213.69	33	0.5905	0.229	5.365	0.899
11-Jan-95	249.07	34	0.6086	0.276	5.518	0.894
9-Feb-95	258.83	35	0.6267	0.323	5.556	0.886
6-Apr-94	262.17	36	0.6448	0.371	5.569	0.878
15-Jul-99	282	37	0.6629	0.420	5.642	0.872
25-Apr-95	313.97	38	0.6810	0.470	5.749	0.868
13-Apr-95	357.43	39	0.6991	0.522	5.879	0.864
20-May-94	391.53	40	0.7172	0.575	5.970	0.858
3-May-94	396.68	41	0.7353	0.629	5.983	0.852
5-May-99	479	42	0.7534	0.685	6.172	0.866
24-Mar-99	525	43	0.7715	0.744	6.263	0.874
15-May-91	626	44	0.7896	0.805	6.439	0.901
19-Apr-99	731	45	0.8077	0.869	6.594	0.921

22-Mar-95	821.97	46	0.8258	0.938	6.712	0.926
13-May-98	865	47	0.8439	1.011	6.763	0.919
18-Apr-94	927.99	48	0.8620	1.089	6.833	0.916
1-Jun-99	1040	49	0.8801	1.175	6.947	0.918
16-Jun-99	1180	50	0.8982	1.271	7.073	0.898
24-May-99	1220	51	0.9163	1.381	7.107	0.894
27-May-99	1230	52	0.9344	1.509	7.115	
23-May-95	1234.55	53	0.9525	1.669	7.118	
26-May-99	1570	54	0.9706	1.890	7.359	
10-May-95	1741.79	55	0.9887	2.280	7.463	

Secondary Scale For LN graph			
u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF239	**Date:**	19-Jun-00
Chemical:	tPb	**Analyst:**	J.MacLachlan
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	35,078	355	46	205	0.00	0.00	0.00
SD:	832	430	86	697	1.00	1.00	1.00
CV:	0.02	1.21	1.87	3.40			
Min:	33,373	43	13	4.4	-0.72	-0.38	-0.29
Max:	36,404	1,742	540	4,561	3.22	5.73	6.25
Median:	34,791	131	22	21	-0.52	-0.28	-0.26

tPb	SF239		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.344)		update r2	**0.34**	0.344	r2:	0.117	0.121
r2 Q,[COC]:	0.34	[tCd]	Q		m:	0.1770	0.00047
slope, m:	0.1	9	43.0		b:	-5855	-11.32
intercept, b:	4.3	46	354.6				
N: 56		209	1742				
LnConc. = mLn(Q)+b (r2=0.292)		update r2	0.29	0.292			
r2 lnQ,ln[COC]:	0.29	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	0.35	2.84	3.76	17	43		
intercept, b:	1.53	3.57	5.87	36	355		
N: 56		4.13	7.46	62	1,742		

N= 56

	Sampling Date	Q Discharge	tPb Concentration	tPb Load	Ln Q	Ln tPb Conc.	Ln tPb Load	tPb SF239 Standardized Values = (x - Avg)/SD	for graph 0	
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	626	19	64.0	6.44	2.94	4.16	0.63	-0.31	-0.20
MFG	3-Oct-91	56.1	19	5.7	4.03	2.94	1.75	-0.69	-0.31	-0.29
IDEQ	29-Oct-93	54.12	19	5.5	3.99	2.94	1.71	-0.70	-0.31	-0.29
IDEQ	2-Dec-93	61.06	33	10.8	4.11	3.50	2.38	-0.68	-0.15	-0.28
IDEQ	20-Dec-93	49.76	20	5.4	3.91	3.00	1.68	-0.71	-0.30	-0.29
IDEQ	20-Dec-93	54.85	20	5.9	4.00	3.00	1.78	-0.70	-0.30	-0.29
IDEQ	19-Jan-94	68.93	22	8.2	4.23	3.09	2.10	-0.66	-0.28	-0.28
IDEQ	19-Jan-94	76.14	22	9.0	4.33	3.09	2.20	-0.65	-0.28	-0.28
IDEQ	15-Feb-94	56.11	16	4.8	4.03	2.77	1.57	-0.69	-0.35	-0.29
IDEQ	15-Feb-94	55.57	16	4.8	4.02	2.77	1.57	-0.70	-0.35	-0.29
IDEQ	7-Mar-94	116.89	25	15.7	4.76	3.22	2.76	-0.55	-0.24	-0.27
IDEQ	23-Mar-94	165.89	20	17.8	5.11	3.00	2.88	-0.44	-0.30	-0.27
IDEQ	6-Apr-94	262.17	22	31.0	5.57	3.09	3.43	-0.21	-0.28	-0.25
IDEQ	18-Apr-94	927.99	182	908.7	6.83	5.20	6.81	1.33	1.58	1.01
IDEQ	3-May-94	396.68	16	34.1	5.98	2.77	3.53	0.10	-0.35	-0.25
IDEQ	20-May-94	391.53	20	42.1	5.97	3.00	3.74	0.09	-0.30	-0.23
IDEQ	8-Jun-94	210.99	21	23.8	5.35	3.04	3.17	-0.33	-0.29	-0.26
IDEQ	24-Jun-94	125.94	24	16.3	4.84	3.18	2.79	-0.53	-0.26	-0.27
IDEQ	23-Jul-94	75.06	20	8.1	4.32	3.00	2.09	-0.65	-0.30	-0.28
IDEQ	16-Aug-94	58.89	20	6.3	4.08	3.00	1.85	-0.69	-0.30	-0.28
IDEQ	9-Sep-94	59.6	20	6.4	4.09	3.00	1.86	-0.69	-0.30	-0.28
IDEQ	5-Oct-94	45.76	18	4.4	3.82	2.89	1.49	-0.72	-0.32	-0.29
IDEQ	15-Nov-94	51.58	28	7.8	3.94	3.33	2.05	-0.70	-0.21	-0.28
IDEQ	14-Dec-94	56.79	20	6.1	4.04	3.00	1.81	-0.69	-0.30	-0.29
IDEQ	11-Jan-95	249.07	42	56.3	5.52	3.74	4.03	-0.25	-0.05	-0.21
IDEQ	9-Feb-95	258.83	26	36.2	5.56	3.26	3.59	-0.22	-0.23	-0.24
IDEQ	8-Mar-95	190.62	20	20.5	5.25	3.00	3.02	-0.38	-0.30	-0.26
IDEQ	22-Mar-95	821.97	22	97.3	6.71	3.09	4.58	1.09	-0.28	-0.15
IDEQ	13-Apr-95	357.43	31	59.6	5.88	3.43	4.09	0.01	-0.17	-0.21
IDEQ	25-Apr-95	313.97	22	37.2	5.75	3.09	3.62	-0.09	-0.28	-0.24
IDEQ	10-May-95	1741.79	46	431.1	7.46	3.83	6.07	3.22	0.00	0.32
IDEQ	23-May-95	1234.55	22	146.1	7.12	3.09	4.98	2.05	-0.28	-0.08
IDEQ	13-Jun-95	213.69	40	46.0	5.36	3.69	3.83	-0.33	-0.07	-0.23
IDEQ	28-Jun-95	178.93	21	20.2	5.19	3.04	3.01	-0.41	-0.29	-0.27
IDEQ	12-Jul-95	83.78	17	7.7	4.43	2.83	2.04	-0.63	-0.34	-0.28
IDEQ	26-Jul-95	68.1	21	7.7	4.22	3.04	2.04	-0.67	-0.29	-0.28
IDEQ	15-Aug-95	69.77	25	9.4	4.25	3.22	2.24	-0.66	-0.24	-0.28
IDEQ	14-Sep-95	68.1	22	8.1	4.22	3.09	2.09	-0.67	-0.28	-0.28
URS	7-Nov-97	118	43.3	27.5	4.77	3.77	3.31	-0.55	-0.03	-0.25
URS	13-May-98	865	18.2	84.7	6.76	2.90	4.44	1.19	-0.32	-0.17
USGS	22-Oct-98	43	19	4.4	3.76	2.94	1.48	-0.72	-0.31	-0.29
USGS	17-Nov-98	68	23	8.4	4.22	3.14	2.13	-0.67	-0.27	-0.28
USGS	10-Dec-98	81	24	10.5	4.39	3.18	2.35	-0.64	-0.26	-0.28
USGS	29-Dec-98	129	32	22.2	4.86	3.47	3.10	-0.52	-0.16	-0.26
USGS	29-Dec-98	129	33	22.9	4.86	3.50	3.13	-0.52	-0.15	-0.26

USGS	24-Mar-99	525	49	138.4	6.26	3.89	4.93	0.40	0.03	-0.10
USGS	19-Apr-99	731	13	51.1	6.59	2.56	3.93	0.88	-0.38	-0.22
USGS	5-May-99	479	17	43.8	6.17	2.83	3.78	0.29	-0.34	-0.23
USGS	24-May-99	1220	390	2559.8	7.11	5.97	7.85	2.01	3.99	3.38
USGS	26-May-99	1570	540	4561.2	7.36	6.29	8.43	2.83	5.73	6.25
USGS	27-May-99	1230	110	727.9	7.11	4.70	6.59	2.04	0.74	0.75
USGS	1-Jun-99	1040	37	207.0	6.95	3.61	5.33	1.59	-0.10	0.00
USGS	16-Jun-99	1180	110	698.3	7.07	4.70	6.55	1.92	0.74	0.71
USGS	15-Jul-99	282	18.9	28.7	5.64	2.94	3.36	-0.17	-0.31	-0.25
USGS	5-Aug-99	133	42.4	30.3	4.89	3.75	3.41	-0.52	-0.04	-0.25
USGS	1-Sep-99	77	18.6	7.7	4.34	2.92	2.04	-0.65	-0.32	-0.28

tPb

Concentration over time analysis

	tPb	SF239		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.146**	**0.00033**
	Time	**Ln[COC]**	**[COC]**		
first:	15-May-91	2.78	16		
mid:	2-Apr-95	3.25	26		
last:	1-Sep-99	3.79	44		
	LnConc.=mTime+b >'96 r2, m:			**0.499**	**-0.02197**
	26-May-99	4.91	135		
	1-Sep-99	2.75	16		

Load over time analysis

	tPb	SF239		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.167**	**0.00080**
	Time	**LnLoad**	**Load**		
first:	15-May-91	1.96	7		
mid:	2-Apr-95	3.10	22		
last:	1-Sep-99	4.40	81		
	LnLoad=mTime+b >'96 r2, m:			**0.821**	**-0.05318**
	26-May-99	6.98	1,072		
	1-Sep-99	1.77	6		

	max r2: 0.558			max r2: 0.856		
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.146	0.00033	-8.35	0.167	0.00080	-24.90
	0.143	0.00034	-8.64	0.199	0.00091	-28.68
	0.139	0.00035	-8.88	0.186	0.00091	-28.48
	0.134	0.00035	-8.77	0.175	0.00088	-27.65
	0.140	0.00036	-9.18	0.170	0.00088	-27.41
	0.136	0.00035	-9.12	0.159	0.00085	-26.44
	0.132	0.00035	-9.04	0.149	0.00082	-25.48
	0.129	0.00035	-9.06	0.140	0.00080	-24.78
	0.126	0.00035	-9.07	0.132	0.00078	-24.12
	0.118	0.00034	-8.72	0.119	0.00074	-22.69
	0.109	0.00033	-8.33	0.106	0.00070	-21.10
	0.108	0.00034	-8.44	0.101	0.00069	-20.82
	0.103	0.00033	-8.28	0.097	0.00069	-20.66
	0.099	0.00033	-8.22	0.098	0.00070	-21.20
	0.166	0.00041	-11.05	0.151	0.00085	-26.43
	0.155	0.00040	-10.68	0.156	0.00088	-27.48
	0.149	0.00040	-10.60	0.165	0.00092	-28.94
	0.143	0.00040	-10.57	0.165	0.00094	-29.64
	0.141	0.00040	-10.75	0.161	0.00094	-29.77
	0.134	0.00040	-10.61	0.147	0.00091	-28.67
	0.126	0.00039	-10.45	0.130	0.00086	-26.96
	0.118	0.00039	-10.24	0.113	0.00081	-25.01
	0.107	0.00037	-9.77	0.091	0.00073	-22.02
	0.107	0.00038	-10.13	0.075	0.00066	-19.77
	0.098	0.00037	-9.78	0.056	0.00058	-16.63
	0.111	0.00041	-11.07	0.061	0.00062	-18.08
	0.109	0.00042	-11.35	0.060	0.00063	-18.65
	0.099	0.00041	-10.97	0.053	0.00061	-17.78
	0.090	0.00040	-10.77	0.066	0.00070	-21.16
	0.093	0.00042	-11.58	0.074	0.00077	-23.69
	0.084	0.00042	-11.36	0.075	0.00081	-25.17
	0.105	0.00049	-14.00	0.139	0.00113	-36.78
	0.095	0.00049	-14.08	0.197	0.00142	-47.22
	0.116	0.00058	-17.40	0.228	0.00164	-55.23
	0.104	0.00060	-17.94	0.234	0.00181	-61.44
	0.077	0.00057	-16.90	0.202	0.00185	-62.86
	0.059	0.00059	-17.47	0.164	0.00192	-65.30
	0.054	0.00073	-22.60	0.130	0.00219	-75.19
	0.051	0.00142	-47.63	0.096	0.00371	-130.07
	0.106	0.00286	-99.80	0.106	0.00539	-191.09
	0.071	0.00302	-105.64	0.196	0.00964	-345.38
	0.040	0.00251	-87.06	0.115	0.00778	-277.75
	0.019	0.00192	-65.83	0.051	0.00563	-199.68
	0.003	0.00091	-29.11	0.006	0.00214	-72.75
	0.000	-0.00020	11.29	0.006	-0.00242	92.94

0.020	-0.00386	144.07	0.174	-0.01811	662.64
0.035	-0.00596	220.44	0.259	-0.02591	946.46
0.202	-0.01485	543.63	0.478	-0.03897	1421.19
0.558	-0.02524	921.59	0.841	-0.05564	2027.13
0.499	-0.02197	802.41	0.821	-0.05318	1937.58
0.482	-0.01431	523.97	0.856	-0.04518	1646.72
0.326	-0.01121	411.06	0.806	-0.04319	1574.14

update for EV, CV:

tPb **SF239**
LN Analysis **tPb**
Load **Load Data, EV=205 lbs/day CV=3.4**
Load Data-based LN

		u	ln tCd Load	tCd Load
Avg:	**205**	3	8.8	6832
SD:	**697**	0	4.06	58
CV:	**3.40**	-3	-0.72	0.5
Min:	**4.4**			
Max:	**4,561**			
Median:	**21**			

205 205
3.40 3.4

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.877, EV=140lbs/day CV=4.91; max r2=0.98**

r2 u,lnLoad:	0.877	u	lnLoad	Load		
slope, m:	0.557	3	8.72	6094		
intercept, b:	-1.855	0	3.33	28		
N:	56	-3	-2.05	0.1		
E[Load]:	139.9	Parameter Estimates			0.877	0.877
SD[Load]:	687	from LN regression			139.9	140
CV[Load]:	4.91	update graph label			4.9	4.91
					max r2	
	tPb	N: 56			0.977	

Date	Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
22-Oct-98	4.4	1	0.0111	-2.287	1.481	0.877
5-Oct-94	4.4	2	0.0289	-1.897	1.489	0.897
15-Feb-94	4.8	3	0.0467	-1.678	1.565	0.909
15-Feb-94	4.8	4	0.0644	-1.518	1.575	0.917
20-Dec-93	5.4	5	0.0822	-1.390	1.678	0.924
29-Oct-93	5.5	6	0.1000	-1.282	1.711	0.930
3-Oct-91	5.7	7	0.1178	-1.186	1.747	0.935
20-Dec-93	5.9	8	0.1356	-1.101	1.775	0.939
14-Dec-94	6.1	9	0.1533	-1.022	1.810	0.943
16-Aug-94	6.3	10	0.1711	-0.950	1.846	0.946
9-Sep-94	6.4	11	0.1889	-0.882	1.858	0.949
12-Jul-95	7.7	12	0.2067	-0.818	2.036	0.951
26-Jul-95	7.7	13	0.2244	-0.757	2.040	0.954
1-Sep-99	7.7	14	0.2422	-0.699	2.042	0.957
15-Nov-94	7.8	15	0.2600	-0.643	2.050	0.958
14-Sep-95	8.1	16	0.2778	-0.589	2.087	0.960
23-Jul-94	8.1	17	0.2956	-0.537	2.089	0.960
19-Jan-94	8.2	18	0.3133	-0.486	2.099	0.961
17-Nov-98	8.4	19	0.3311	-0.437	2.130	0.960
19-Jan-94	9.0	20	0.3489	-0.388	2.199	0.959
15-Aug-95	9.4	21	0.3667	-0.341	2.239	0.958
10-Dec-98	10.5	22	0.3844	-0.294	2.347	0.956
2-Dec-93	10.8	23	0.4022	-0.248	2.383	0.955
7-Mar-94	15.7	24	0.4200	-0.202	2.755	0.953
24-Jun-94	16.3	25	0.4378	-0.157	2.789	0.954
23-Mar-94	17.8	26	0.4556	-0.112	2.882	0.954
28-Jun-95	20.2	27	0.4733	-0.067	3.006	0.955
8-Mar-95	20.5	28	0.4911	-0.022	3.021	0.958
29-Dec-98	22.2	29	0.5089	0.022	3.100	0.959
29-Dec-98	22.9	30	0.5267	0.067	3.131	0.961
8-Jun-94	23.8	31	0.5444	0.112	3.171	0.963
7-Nov-97	27.5	32	0.5622	0.157	3.314	0.964
15-Jul-99	28.7	33	0.5800	0.202	3.356	0.966
5-Aug-99	30.3	34	0.5978	0.248	3.412	0.969
6-Apr-94	31.0	35	0.6156	0.294	3.435	0.971
3-May-94	34.1	36	0.6333	0.341	3.531	0.972
9-Feb-95	36.2	37	0.6511	0.388	3.589	0.974
25-Apr-95	37.2	38	0.6689	0.437	3.615	0.976
20-May-94	42.1	39	0.6867	0.486	3.741	0.976
5-May-99	43.8	40	0.7044	0.537	3.780	0.977
13-Jun-95	46.0	41	0.7222	0.589	3.828	0.977
19-Apr-99	51.1	42	0.7400	0.643	3.934	0.976
11-Jan-95	56.3	43	0.7578	0.699	4.030	0.974
13-Apr-95	59.6	44	0.7756	0.757	4.088	0.972
15-May-91	64.0	45	0.7933	0.818	4.159	0.968

13-May-98	**84.7**	46	0.8111	0.882	4.439	0.963
22-Mar-95	**97.3**	47	0.8289	0.950	4.578	0.957
24-Mar-99	**138.4**	48	0.8467	1.022	4.930	0.951
23-May-95	**146.1**	49	0.8644	1.101	4.984	0.941
1-Jun-99	**207.0**	50	0.8822	1.186	5.333	0.941
10-May-95	**431.1**	51	0.9000	1.282	6.066	0.955
16-Jun-99	**698.3**	52	0.9178	1.390	6.549	0.939
27-May-99	**727.9**	53	0.9356	1.518	6.590	
18-Apr-94	**908.7**	54	0.9533	1.678	6.812	
24-May-99	**2559.8**	55	0.9711	1.897	7.848	
26-May-99	**4561.2**	56	0.9889	2.287	8.425	

update for EV, CV:

tPb		**SF239**	46	46
LN Analysis		**tPb**	1.87	1.87

Concentration

Conc. Data, EV=46 ug/L CV=1.87

		Data-based LN		
Avg:	**46**	u	ln[tCd]	[tCd]
SD:	**86**	3	6.8	861
CV:	**1.87**	0	3.08	22
Min:	**13**	-3	-0.61	1
Max:	**540**			
Median:	**22**			

u=mLn(Conc.)+b: 0.673 0.673
42.8 42.8
update for r2, EV, CV: **r2=0.673, EV=42.8 ug/L CV=1.13; max r2=0.95** 1.130 1.13

r2 u,lnConc:	0.673	u	lnConc.	Conc.
slope, m:	1.102	3	6.07	431
intercept, b:	-3.686	0	3.34	28
N:	56	-3	0.62	2
E[Conc]:	42.8	Parameter Estimates		
SD[Conc]:	48	from LN regression		
CV[Conc]:	1.13	update graph label		

tPb N: 56 max r2 0.950

Date	**Concentration ug/L Ranked**	**i rank**	**i-3/8 / N+1/4 plotting points**	**u y-axis**	**Ln x-axis**	**r2 forward**
update and rank for new data						
19-Apr-99	13	1	0.0111	-2.287	2.565	0.673
15-Feb-94	16	2	0.0289	-1.897	2.773	0.681
15-Feb-94	16	3	0.0467	-1.678	2.773	0.693
3-May-94	16	4	0.0644	-1.518	2.773	0.703
12-Jul-95	17	5	0.0822	-1.390	2.833	0.709
5-May-99	17	6	0.1000	-1.282	2.833	0.718
5-Oct-94	18	7	0.1178	-1.186	2.890	0.725
13-May-98	18.2	8	0.1356	-1.101	2.901	0.733
1-Sep-99	18.6	9	0.1533	-1.022	2.923	0.742
15-Jul-99	18.9	10	0.1711	-0.950	2.939	0.751
15-May-91	19	11	0.1889	-0.882	2.944	0.759
3-Oct-91	19	12	0.2067	-0.818	2.944	0.768
29-Oct-93	19	13	0.2244	-0.757	2.944	0.776
22-Oct-98	19	14	0.2422	-0.699	2.944	0.784
20-Dec-93	20	15	0.2600	-0.643	2.996	0.791
20-Dec-93	20	16	0.2778	-0.589	2.996	0.800
23-Mar-94	20	17	0.2956	-0.537	2.996	0.808
20-May-94	20	18	0.3133	-0.486	2.996	0.816
23-Jul-94	20	19	0.3311	-0.437	2.996	0.824
16-Aug-94	20	20	0.3489	-0.388	2.996	0.831
9-Sep-94	20	21	0.3667	-0.341	2.996	0.838
14-Dec-94	20	22	0.3844	-0.294	2.996	0.845
8-Mar-95	20	23	0.4022	-0.248	2.996	0.850
8-Jun-94	21	24	0.4200	-0.202	3.045	0.856
28-Jun-95	21	25	0.4378	-0.157	3.045	0.862
26-Jul-95	21	26	0.4556	-0.112	3.045	0.869
19-Jan-94	22	27	0.4733	-0.067	3.091	0.875
19-Jan-94	22	28	0.4911	-0.022	3.091	0.882
6-Apr-94	22	29	0.5089	0.022	3.091	0.889
22-Mar-95	22	30	0.5267	0.067	3.091	0.895
25-Apr-95	22	31	0.5444	0.112	3.091	0.900
23-May-95	22	32	0.5622	0.157	3.091	0.905
14-Sep-95	22	33	0.5800	0.202	3.091	0.908
17-Nov-98	23	34	0.5978	0.248	3.135	0.911
24-Jun-94	24	35	0.6156	0.294	3.178	0.914
10-Dec-98	24	36	0.6333	0.341	3.178	0.917
7-Mar-94	25	37	0.6511	0.388	3.219	0.920
15-Aug-95	25	38	0.6689	0.437	3.219	0.922
9-Feb-95	26	39	0.6867	0.486	3.258	0.923
15-Nov-94	28	40	0.7044	0.537	3.332	0.923
13-Apr-95	31	41	0.7222	0.589	3.434	0.925
29-Dec-98	32	42	0.7400	0.643	3.466	0.930
2-Dec-93	33	43	0.7578	0.699	3.497	0.934
29-Dec-98	33	44	0.7756	0.757	3.497	0.938
1-Jun-99	37	45	0.7933	0.818	3.611	0.939

13-Jun-95	40	46	0.8111	0.882	3.689	0.942
11-Jan-95	42	47	0.8289	0.950	3.738	0.947
5-Aug-99	42.4	48	0.8467	1.022	3.747	0.950
7-Nov-97	43.3	49	0.8644	1.101	3.768	0.946
10-May-95	46	50	0.8822	1.186	3.829	0.934
24-Mar-99	49	51	0.9000	1.282	3.892	0.915
27-May-99	110	52	0.9178	1.390	4.700	0.925
16-Jun-99	110	53	0.9356	1.518	4.700	
18-Apr-94	182	54	0.9533	1.678	5.204	
24-May-99	390	55	0.9711	1.897	5.966	
26-May-99	540	56	0.9889	2.287	6.292	

update for EV, CV:

tPb		**SF239**			355	355
LN Analysis		**tPb**			1.21	1.21
Discharge, Q		**Q Data, EV=355 cfs CV=1.21**				
Avg:	**355**	**Q Data-based LN**				
SD:	**430**	u	lnQ	Q		
CV:	**1.21**	3	8.3	3914		
Min:	**43**	0	5.42	226		
Max:	**1,742**	-3	2.56	13		
Median:	**131**					

					0.912	0.912
					382.3	382
	u=mLn(Q)+b:				1.83	1.83
update for r2, EV, CV:	**r2=0.912, EV=382 cfs CV=1.83; max r2=0.96**					
	r2 u,lnQ:	0.912	u	lnQ	Q	
	slope, m:	0.825	3	8.85	6962	
	intercept, b:	-4.299	0	5.21	183	
	N:	56	-3	1.57	5	
	E[Q]:	382.3	Parameter Estimates			
	SD[Q]:	700	from LN regression			
	CV[Q]:	1.83	update graph label			

	Q	N: 56				max r2 0.964
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
22-Oct-98	43	1	0.0111	-2.287	3.761	0.912
5-Oct-94	45.76	2	0.0289	-1.897	3.823	0.928
20-Dec-93	49.76	3	0.0467	-1.678	3.907	0.937
15-Nov-94	51.58	4	0.0644	-1.518	3.943	0.945
29-Oct-93	54.12	5	0.0822	-1.390	3.991	0.950
20-Dec-93	54.85	6	0.1000	-1.282	4.005	0.955
15-Feb-94	55.57	7	0.1178	-1.186	4.018	0.959
3-Oct-91	56.1	8	0.1356	-1.101	4.027	0.962
15-Feb-94	56.11	9	0.1533	-1.022	4.027	0.963
14-Dec-94	56.79	10	0.1711	-0.950	4.039	0.964
16-Aug-94	58.89	11	0.1889	-0.882	4.076	0.964
9-Sep-94	59.6	12	0.2067	-0.818	4.088	0.964
2-Dec-93	61.06	13	0.2244	-0.757	4.112	0.963
17-Nov-98	68	14	0.2422	-0.699	4.220	0.961
26-Jul-95	68.1	15	0.2600	-0.643	4.221	0.960
14-Sep-95	68.1	16	0.2778	-0.589	4.221	0.959
19-Jan-94	68.93	17	0.2956	-0.537	4.233	0.956
15-Aug-95	69.77	18	0.3133	-0.486	4.245	0.954
23-Jul-94	75.06	19	0.3311	-0.437	4.318	0.951
19-Jan-94	76.14	20	0.3489	-0.388	4.333	0.949
1-Sep-99	77	21	0.3667	-0.341	4.344	0.946
10-Dec-98	81	22	0.3844	-0.294	4.394	0.943
12-Jul-95	83.78	23	0.4022	-0.248	4.428	0.941
7-Mar-94	116.89	24	0.4200	-0.202	4.761	0.940
7-Nov-97	118	25	0.4378	-0.157	4.771	0.937
24-Jun-94	125.94	26	0.4556	-0.112	4.836	0.933
29-Dec-98	129	27	0.4733	-0.067	4.860	0.929
29-Dec-98	129	28	0.4911	-0.022	4.860	0.925
5-Aug-99	133	29	0.5089	0.022	4.890	0.922
23-Mar-94	165.89	30	0.5267	0.067	5.111	0.920
28-Jun-95	178.93	31	0.5444	0.112	5.187	0.916
8-Mar-95	190.62	32	0.5622	0.157	5.250	0.911
8-Jun-94	210.99	33	0.5800	0.202	5.352	0.905
13-Jun-95	213.69	34	0.5978	0.248	5.365	0.899
11-Jan-95	249.07	35	0.6156	0.294	5.518	0.893
9-Feb-95	258.83	36	0.6333	0.341	5.556	0.885
6-Apr-94	262.17	37	0.6511	0.388	5.569	0.877
15-Jul-99	282	38	0.6689	0.437	5.642	0.871
25-Apr-95	313.97	39	0.6867	0.486	5.749	0.867
13-Apr-95	357.43	40	0.7044	0.537	5.879	0.863
20-May-94	391.53	41	0.7222	0.589	5.970	0.857
3-May-94	396.68	42	0.7400	0.643	5.983	0.851
5-May-99	479	43	0.7578	0.699	6.172	0.866
24-Mar-99	525	44	0.7756	0.757	6.263	0.874
15-May-91	626	45	0.7933	0.818	6.439	0.901

19-Apr-99	731	46	0.8111	0.882	6.594	0.920
22-Mar-95	821.97	47	0.8289	0.950	6.712	0.925
13-May-98	865	48	0.8467	1.022	6.763	0.918
18-Apr-94	927.99	49	0.8644	1.101	6.833	0.916
1-Jun-99	1040	50	0.8822	1.186	6.947	0.919
16-Jun-99	1180	51	0.9000	1.282	7.073	0.898
24-May-99	1220	52	0.9178	1.390	7.107	0.894
27-May-99	1230	53	0.9356	1.518	7.115	
23-May-95	1234.55	54	0.9533	1.678	7.118	
26-May-99	1570	55	0.9711	1.897	7.359	
10-May-95	1741.79	56	0.9889	2.287	7.463	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SF239 **Date:** 19-Jun-00

Chemical: tZn **Analyst:** J.MacLachlan

Notes:

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	35,058	359	1,034	1,248	0.00	0.00	0.00
SD:	827	433	495	1,160	1.00	1.00	1.00
CV:	0.02	1.21	0.48	0.93			
Min:	33,373	43	220	254.5	-0.73	-1.64	-0.86
Max:	36,404	1,742	2,320	5,174	3.19	2.60	3.39
Median:	34,780	133	1,030	741	-0.52	-0.01	-0.44

tZn	SF239		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.42)		update r2	0.42	0.42	r2:	0.131	0.130
r2 Q,[COC]:	0.42	[tCd]	Q		m:	0.1892	0.00050
slope, m:	-0.7	1,268	43.0		b:	-6275	-12.19
intercept, b:	1300.3	1,034	358.7				
N:	55	8	1742				
LnConc. = mLn(Q)+b (r2=0.623)		update r2		0.62	0.623		
r2 lnQ,ln[COC]:	0.62	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.38	7.37	3.76	1,581	43		
intercept, b:	8.81	6.55	5.88	699	359		
N:	55	5.94	7.46	381	1,742		

N= 55

update for new data	Sampling Date	Q Discharge cfs	tZn Concentration ug/L	tZn Load lbs/day	Ln Q	Ln tZn Conc.	Ln tZn Load	tZn SF239 Standardized Values = (x - Avg)/SD for graph 0 Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	626	411	1384.2	6.44	6.02	7.23	0.62	-1.26	0.12
MFG	3-Oct-91	56.1	1490	449.7	4.03	7.31	6.11	-0.70	0.92	-0.69
IDEQ	29-Oct-93	54.12	1590	463.0	3.99	7.37	6.14	-0.70	1.12	-0.68
IDEQ	2-Dec-93	61.06	1540	505.9	4.11	7.34	6.23	-0.69	1.02	-0.64
IDEQ	20-Dec-93	49.76	1760	471.2	3.91	7.47	6.16	-0.71	1.46	-0.67
IDEQ	20-Dec-93	54.85	1760	519.4	4.00	7.47	6.25	-0.70	1.46	-0.63
IDEQ	19-Jan-94	68.93	1380	511.8	4.23	7.23	6.24	-0.67	0.70	-0.63
IDEQ	19-Jan-94	76.14	1380	565.3	4.33	7.23	6.34	-0.65	0.70	-0.59
IDEQ	15-Feb-94	56.11	1560	470.9	4.03	7.35	6.15	-0.70	1.06	-0.67
IDEQ	15-Feb-94	55.57	1560	466.4	4.02	7.35	6.15	-0.70	1.06	-0.67
IDEQ	7-Mar-94	116.89	1410	886.7	4.76	7.25	6.79	-0.56	0.76	-0.31
IDEQ	23-Mar-94	165.89	1430	1276.3	5.11	7.27	7.15	-0.45	0.80	0.02
IDEQ	6-Apr-94	262.17	897	1265.2	5.57	6.80	7.14	-0.22	-0.28	0.02
IDEQ	18-Apr-94	927.99	772	3854.3	6.83	6.65	8.26	1.31	-0.53	2.25
IDEQ	3-May-94	396.68	512	1092.7	5.98	6.24	7.00	0.09	-1.05	-0.13
IDEQ	20-May-94	391.53	509	1072.2	5.97	6.23	6.98	0.08	-1.06	-0.15
IDEQ	8-Jun-94	210.99	821	931.9	5.35	6.71	6.84	-0.34	-0.43	-0.27
IDEQ	24-Jun-94	125.94	838	567.8	4.84	6.73	6.34	-0.54	-0.40	-0.59
IDEQ	23-Jul-94	75.06	900	363.4	4.32	6.80	5.90	-0.65	-0.27	-0.76
IDEQ	16-Aug-94	58.89	1030	326.3	4.08	6.94	5.79	-0.69	-0.01	-0.79
IDEQ	9-Sep-94	59.6	1490	477.8	4.09	7.31	6.17	-0.69	0.92	-0.66
IDEQ	5-Oct-94	45.76	1100	270.8	3.82	7.00	5.60	-0.72	0.13	-0.84
IDEQ	15-Nov-94	51.58	2210	613.3	3.94	7.70	6.42	-0.71	2.37	-0.55
IDEQ	14-Dec-94	56.79	2320	708.8	4.04	7.75	6.56	-0.70	2.60	-0.46
IDEQ	11-Jan-95	249.07	1300	1742.0	5.52	7.17	7.46	-0.25	0.54	0.43
IDEQ	9-Feb-95	258.83	1160	1615.3	5.56	7.06	7.39	-0.23	0.25	0.32
IDEQ	8-Mar-95	190.62	1040	1066.6	5.25	6.95	6.97	-0.39	0.01	-0.16
IDEQ	22-Mar-95	821.97	1170	5174.0	6.71	7.06	8.55	1.07	0.27	3.39
IDEQ	13-Apr-95	357.43	975	1874.9	5.88	6.88	7.54	0.00	-0.12	0.54
IDEQ	25-Apr-95	313.97	824	1391.9	5.75	6.71	7.24	-0.10	-0.42	0.12
IDEQ	10-May-95	1741.79	502	4704.2	7.46	6.22	8.46	3.19	-1.07	2.98
IDEQ	23-May-95	1234.55	419	2782.9	7.12	6.04	7.93	2.02	-1.24	1.32
IDEQ	13-Jun-95	213.69	510	586.3	5.36	6.23	6.37	-0.33	-1.06	-0.57
IDEQ	28-Jun-95	178.93	697	671.0	5.19	6.55	6.51	-0.42	-0.68	-0.50
IDEQ	12-Jul-95	83.78	806	363.3	4.43	6.69	5.90	-0.63	-0.46	-0.76
IDEQ	26-Jul-95	68.1	1000	366.4	4.22	6.91	5.90	-0.67	-0.07	-0.76
IDEQ	15-Aug-95	69.77	1180	442.9	4.25	7.07	6.09	-0.67	0.29	-0.69
IDEQ	14-Sep-95	68.1	1330	487.3	4.22	7.19	6.19	-0.67	0.60	-0.66
URS	7-Nov-97	118	1200	761.8	4.77	7.09	6.64	-0.56	0.33	-0.42
URS	13-May-98	865	415	1931.3	6.76	6.03	7.57	1.17	-1.25	0.59
USGS	22-Oct-98	43	1100	254.5	3.76	7.00	5.54	-0.73	0.13	-0.86
USGS	17-Nov-98	68	1700	621.9	4.22	7.44	6.43	-0.67	1.34	-0.54
USGS	10-Dec-98	81	1700	740.8	4.39	7.44	6.61	-0.64	1.34	-0.44
USGS	29-Dec-98	129	1300	902.2	4.86	7.17	6.80	-0.53	0.54	-0.30
USGS	24-Mar-99	525	1100	3107.0	6.26	7.00	8.04	0.38	0.13	1.60

USGS	19-Apr-99	731	690	2713.6	6.59	6.54	7.91	0.86	-0.69	1.26
USGS	5-May-99	479	500	1288.5	6.17	6.21	7.16	0.28	-1.08	0.04
USGS	24-May-99	1220	450	2953.6	7.11	6.11	7.99	1.99	-1.18	1.47
USGS	26-May-99	1570	520	4392.2	7.36	6.25	8.39	2.80	-1.04	2.71
USGS	27-May-99	1230	290	1919.0	7.11	5.67	7.56	2.01	-1.50	0.58
USGS	1-Jun-99	1040	260	1454.8	6.95	5.56	7.28	1.57	-1.56	0.18
USGS	16-Jun-99	1180	220	1396.6	7.07	5.39	7.24	1.90	-1.64	0.13
USGS	15-Jul-99	282	417	632.7	5.64	6.03	6.45	-0.18	-1.25	-0.53
USGS	5-Aug-99	133	539	385.7	4.89	6.29	5.95	-0.52	-1.00	-0.74
USGS	1-Sep-99	77	901	373.2	4.34	6.80	5.92	-0.65	-0.27	-0.75

tZn

Concentration over time analysis

	tZn	SF239		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.181**	**-0.00029**
	Time	**Ln[COC]**	**[COC]**		
first:	15-May-91	7.29	1,460		
mid:	22-Mar-95	6.88	977		
last:	1-Sep-99	6.42	615		
	LnConc.=mTime+b >'96 r2, m:			**0.881**	**0.01282**
	27-May-99	5.44	231		
	1-Sep-99	6.69	802		

Load over time analysis

	tZn	SF239		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.050**	**0.00021**
	Time	**LnLoad**	**Load**		
first:	15-May-91	6.44	628		
mid:	22-Mar-95	6.74	845		
last:	1-Sep-99	7.08	1,191		
	LnLoad=mTime+b >'96 r2, m:			**0.939**	**-0.01805**
	27-May-99	7.46	1,738		
	1-Sep-99	5.71	302		

	max r2: 0.936			max r2: 0.939		
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.181	-0.00029	16.80	0.050	0.00021	-0.61
	0.258	-0.00035	19.03	0.066	0.00025	-2.00
	0.247	-0.00035	19.14	0.055	0.00024	-1.49
	0.237	-0.00034	18.88	0.049	0.00022	-1.03
	0.226	-0.00034	18.63	0.044	0.00021	-0.63
	0.213	-0.00033	18.22	0.038	0.00020	-0.13
	0.199	-0.00031	17.77	0.033	0.00019	0.31
	0.189	-0.00031	17.55	0.028	0.00017	0.80
	0.179	-0.00030	17.31	0.024	0.00016	1.23
	0.166	-0.00029	16.90	0.018	0.00014	1.90
	0.152	-0.00028	16.45	0.013	0.00012	2.65
	0.140	-0.00027	16.08	0.013	0.00012	2.67
	0.128	-0.00025	15.65	0.015	0.00013	2.23
	0.128	-0.00026	15.80	0.018	0.00015	1.76
	0.134	-0.00027	16.17	0.035	0.00020	-0.29
	0.159	-0.00030	17.16	0.038	0.00021	-0.73
	0.191	-0.00033	18.26	0.041	0.00023	-1.19
	0.198	-0.00034	18.72	0.043	0.00024	-1.48
	0.205	-0.00035	19.19	0.037	0.00022	-0.96
	0.209	-0.00036	19.57	0.025	0.00018	0.38
	0.206	-0.00037	19.74	0.014	0.00014	2.10
	0.188	-0.00035	19.22	0.008	0.00010	3.32
	0.180	-0.00035	19.22	0.001	0.00003	5.83
	0.148	-0.00031	17.74	0.000	0.00000	6.97
	0.113	-0.00026	15.93	0.000	-0.00003	7.95
	0.094	-0.00024	15.17	0.000	0.00000	7.01
	0.078	-0.00022	14.54	0.000	0.00003	6.11
	0.066	-0.00021	14.08	0.000	0.00002	6.14
	0.050	-0.00019	13.17	0.014	0.00015	1.66
	0.039	-0.00017	12.63	0.027	0.00021	-0.60
	0.035	-0.00017	12.53	0.037	0.00026	-2.38
	0.054	-0.00022	14.36	0.120	0.00046	-9.49
	0.099	-0.00031	17.61	0.236	0.00065	-16.55
	0.149	-0.00040	21.02	0.230	0.00069	-17.79
	0.181	-0.00048	23.95	0.239	0.00076	-20.47
	0.206	-0.00058	27.39	0.187	0.00073	-19.39
	0.210	-0.00068	31.15	0.124	0.00067	-17.30
	0.194	-0.00084	36.89	0.068	0.00063	-15.84
	0.201	-0.00168	67.35	0.012	0.00052	-11.81
	0.161	-0.00206	81.11	0.001	0.00021	-0.67
	0.490	-0.00477	179.44	0.036	0.00170	-54.56
	0.484	-0.00534	200.13	0.004	-0.00055	27.25
	0.369	-0.00497	186.85	0.058	-0.00250	97.99
	0.186	-0.00375	142.29	0.222	-0.00597	223.95
	0.010	-0.00107	45.06	0.729	-0.01532	563.63

0.072	0.00279	-95.35	0.732	-0.01716	630.67
0.278	0.00579	-204.44	0.719	-0.01833	673.12
0.446	0.00806	-286.76	0.865	-0.02234	818.79
0.555	0.00956	-341.26	0.848	-0.02165	793.92
0.881	0.01282	-459.86	0.939	-0.01805	662.89
0.936	0.01479	-531.73	0.920	-0.01719	631.35

update for EV, CV:

tZn
LN Analysis

Load

Avg:	**1,248**
SD:	**1,160**
CV:	**0.93**
Min:	**254.5**
Max:	**5,174**
Median:	**741**

SF239
tZn

Load Data, EV=1250 lbs/day CV=0.93
Load Data-based LN

u	ln tCd Load	tCd Load
3	9.2	9749
0	6.82	914
-3	4.45	85.6

1,248	1250
0.93	0.93

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.952, EV=1250lbs/day CV=0.977; max r2=0.99**

r2 u,lnLoad:	0.952	u	lnLoad	Load
slope, m:	1.222	3	9.25	10438
intercept, b:	-8.307	0	6.80	896
N:	55	-3	4.34	77.0
E[Load]:	1252.7	Parameter Estimates		
SD[Load]:	1223	from LN regression		
CV[Load]:	0.98	update graph label		

	0.952
	1252.7
	1.0
	max r2
	0.985

0.952	
1250	
0.977	

N: 55

Date	tZn Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
22-Oct-98	254.5	1	0.0113	-2.280	5.539	0.952
5-Oct-94	270.8	2	0.0294	-1.890	5.601	0.960
16-Aug-94	326.3	3	0.0475	-1.669	5.788	0.962
12-Jul-95	363.3	4	0.0656	-1.509	5.895	0.966
23-Jul-94	363.4	5	0.0837	-1.381	5.896	0.970
26-Jul-95	366.4	6	0.1018	-1.271	5.904	0.973
1-Sep-99	373.2	7	0.1199	-1.175	5.922	0.975
5-Aug-99	385.7	8	0.1380	-1.089	5.955	0.976
15-Aug-95	442.9	9	0.1561	-1.011	6.093	0.976
3-Oct-91	449.7	10	0.1742	-0.938	6.109	0.979
29-Oct-93	463.0	11	0.1923	-0.869	6.138	0.981
15-Feb-94	466.4	12	0.2104	-0.805	6.145	0.983
15-Feb-94	470.9	13	0.2285	-0.744	6.155	0.984
20-Dec-93	471.2	14	0.2466	-0.685	6.155	0.985
9-Sep-94	477.8	15	0.2647	-0.629	6.169	0.985
14-Sep-95	487.3	16	0.2828	-0.575	6.189	0.985
2-Dec-93	505.9	17	0.3009	-0.522	6.226	0.984
19-Jan-94	511.8	18	0.3190	-0.470	6.238	0.984
20-Dec-93	519.4	19	0.3371	-0.420	6.253	0.983
19-Jan-94	565.3	20	0.3552	-0.371	6.337	0.982
24-Jun-94	567.8	21	0.3733	-0.323	6.342	0.981
13-Jun-95	586.3	22	0.3914	-0.276	6.374	0.980
15-Nov-94	613.3	23	0.4095	-0.229	6.419	0.979
17-Nov-98	621.9	24	0.4276	-0.182	6.433	0.977
15-Jul-99	632.7	25	0.4457	-0.137	6.450	0.976
28-Jun-95	671.0	26	0.4638	-0.091	6.509	0.975
14-Dec-94	708.8	27	0.4819	-0.045	6.564	0.974
10-Dec-98	740.8	28	0.5000	0.000	6.608	0.973
7-Nov-97	761.8	29	0.5181	0.045	6.636	0.972
7-Mar-94	886.7	30	0.5362	0.091	6.788	0.972
29-Dec-98	902.2	31	0.5543	0.137	6.805	0.970
8-Jun-94	931.9	32	0.5724	0.182	6.837	0.968
8-Mar-95	1066.6	33	0.5905	0.229	6.972	0.966
20-May-94	1072.2	34	0.6086	0.276	6.977	0.963
3-May-94	1092.7	35	0.6267	0.323	6.996	0.960
6-Apr-94	1265.2	36	0.6448	0.371	7.143	0.956
23-Mar-94	1276.3	37	0.6629	0.420	7.152	0.954
5-May-99	1288.5	38	0.6810	0.470	7.161	0.950
15-May-91	1384.2	39	0.6991	0.522	7.233	0.945
25-Apr-95	1391.9	40	0.7172	0.575	7.238	0.939
16-Jun-99	1396.6	41	0.7353	0.629	7.242	0.932
1-Jun-99	1454.8	42	0.7534	0.685	7.283	0.925
9-Feb-95	1615.3	43	0.7715	0.744	7.387	0.919
11-Jan-95	1742.0	44	0.7896	0.805	7.463	0.909
13-Apr-95	1874.9	45	0.8077	0.869	7.536	0.897

27-May-99	1919.0	46	0.8258	0.938	7.560	0.881
13-May-98	1931.3	47	0.8439	1.011	7.566	0.868
19-Apr-99	2713.6	48	0.8620	1.089	7.906	0.918
23-May-95	2782.9	49	0.8801	1.175	7.931	0.897
24-May-99	2953.6	50	0.8982	1.271	7.991	0.868
24-Mar-99	3107.0	51	0.9163	1.381	8.041	0.827
18-Apr-94	3854.3	52	0.9344	1.509	8.257	
26-May-99	4392.2	53	0.9525	1.669	8.388	
10-May-95	4704.2	54	0.9706	1.890	8.456	
22-Mar-95	5174.0	55	0.9887	2.280	8.551	

update for EV, CV:

tZn		**SF239**	1,034	1030
LN Analysis		**tZn**	0.48	0.479

Concentration — **Conc. Data, EV=1030 ug/L CV=0.479**

		Data-based LN		
Avg:	**1,034**	u	ln[tCd]	[tCd]
SD:	**495**	3	8.2	3647
CV:	**0.48**	0	6.84	933
Min:	**220**	-3	5.47	239
Max:	**2,320**			
Median:	**1,030**			

u=mLn(Conc.)+b: — 0.953 0.953; 1070.0 1070; 0.636 0.636

update for r2, EV, CV: **r2=0.953, EV=1070 ug/L CV=0.636; max r2=0.97**

r2 u,lnConc:	0.953	u	lnConc.	Conc.
slope, m:	1.715	3	8.55	5191
intercept, b:	-11.671	0	6.81	903
N: 55		-3	5.06	157
E[Conc]:	1070.0	Parameter Estimates		
SD[Conc]:	681	from LN regression		
CV[Conc]:	0.64	update graph label		

N: 55 — max r2 0.971

Date	tZn Concentration ug/L Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
16-Jun-99	220	1	0.0113	-2.280	5.394	0.953
1-Jun-99	260	2	0.0294	-1.890	5.561	0.948
27-May-99	290	3	0.0475	-1.669	5.670	0.945
15-May-91	411	4	0.0656	-1.509	6.019	0.944
13-May-98	415	5	0.0837	-1.381	6.028	0.940
15-Jul-99	417	6	0.1018	-1.271	6.033	0.936
23-May-95	419	7	0.1199	-1.175	6.038	0.933
24-May-99	450	8	0.1380	-1.089	6.109	0.930
5-May-99	500	9	0.1561	-1.011	6.215	0.927
10-May-95	502	10	0.1742	-0.938	6.219	0.924
20-May-94	509	11	0.1923	-0.869	6.232	0.921
13-Jun-95	510	12	0.2104	-0.805	6.234	0.919
3-May-94	512	13	0.2285	-0.744	6.238	0.920
26-May-99	520	14	0.2466	-0.685	6.254	0.926
5-Aug-99	539	15	0.2647	-0.629	6.290	0.939
19-Apr-99	690	16	0.2828	-0.575	6.537	0.960
28-Jun-95	697	17	0.3009	-0.522	6.547	0.961
18-Apr-94	772	18	0.3190	-0.470	6.649	0.965
12-Jul-95	806	19	0.3371	-0.420	6.692	0.965
8-Jun-94	821	20	0.3552	-0.371	6.711	0.964
25-Apr-95	824	21	0.3733	-0.323	6.714	0.963
24-Jun-94	838	22	0.3914	-0.276	6.731	0.964
6-Apr-94	897	23	0.4095	-0.229	6.799	0.966
23-Jul-94	900	24	0.4276	-0.182	6.802	0.966
1-Sep-99	901	25	0.4457	-0.137	6.804	0.967
13-Apr-95	975	26	0.4638	-0.091	6.882	0.971
26-Jul-95	1000	27	0.4819	-0.045	6.908	0.971
16-Aug-94	1030	28	0.5000	0.000	6.937	0.971
8-Mar-95	1040	29	0.5181	0.045	6.947	0.970
5-Oct-94	1100	30	0.5362	0.091	7.003	0.970
22-Oct-98	1100	31	0.5543	0.137	7.003	0.968
24-Mar-99	1100	32	0.5724	0.182	7.003	0.966
9-Feb-95	1160	33	0.5905	0.229	7.056	0.967
22-Mar-95	1170	34	0.6086	0.276	7.065	0.965
15-Aug-95	1180	35	0.6267	0.323	7.073	0.963
7-Nov-97	1200	36	0.6448	0.371	7.090	0.963
11-Jan-95	1300	37	0.6629	0.420	7.170	0.964
29-Dec-98	1300	38	0.6810	0.470	7.170	0.961
14-Sep-95	1330	39	0.6991	0.522	7.193	0.957
19-Jan-94	1380	40	0.7172	0.575	7.230	0.953
19-Jan-94	1380	41	0.7353	0.629	7.230	0.950
7-Mar-94	1410	42	0.7534	0.685	7.251	0.944
23-Mar-94	1430	43	0.7715	0.744	7.265	0.938
3-Oct-91	1490	44	0.7896	0.805	7.307	0.931
9-Sep-94	1490	45	0.8077	0.869	7.307	0.929

2-Dec-93	1540	46	0.8258	0.938	7.340	0.921
15-Feb-94	1560	47	0.8439	1.011	7.352	0.918
15-Feb-94	1560	48	0.8620	1.089	7.352	0.914
29-Oct-93	1590	49	0.8801	1.175	7.371	0.898
17-Nov-98	1700	50	0.8982	1.271	7.438	0.871
10-Dec-98	1700	51	0.9163	1.381	7.438	0.871
20-Dec-93	1760	52	0.9344	1.509	7.473	
20-Dec-93	1760	53	0.9525	1.669	7.473	
15-Nov-94	2210	54	0.9706	1.890	7.701	
14-Dec-94	2320	55	0.9887	2.280	7.749	

update for EV, CV:

tZn		**SF239**			359	359
LN Analysis		**tZn**			1.21	1.21
Discharge, Q		**Q Data, EV=359 cfs CV=1.21**				
Avg:	**359**	**Q Data-based LN**				
SD:	**433**	u	lnQ	Q		
CV:	**1.21**	3	8.3	3934		
Min:	**43**	0	5.43	229		
Max:	**1,742**	-3	2.59	13		
Median:	**133**					
					0.910	0.91
					390.2	390
	u=mLn(Q)+b:				1.86	1.86

update for r2, EV, CV: **r2=0.91, EV=390 cfs CV=1.86; max r2=0.98**

r2 u,lnQ:	0.910	u	lnQ	Q
slope, m:	0.817	3	8.89	7253
intercept, b:	-4.264	0	5.22	185
N:	55	-3	1.55	5
E[Q]:	390.2	Parameter Estimates		
SD[Q]:	727	from LN regression		
CV[Q]:	1.86	update graph label		

N: 55

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.962 r2 forward
update and rank for new data						
22-Oct-98	43	1	0.0113	-2.280	3.761	0.910
5-Oct-94	45.76	2	0.0294	-1.890	3.823	0.926
20-Dec-93	49.76	3	0.0475	-1.669	3.907	0.936
15-Nov-94	51.58	4	0.0656	-1.509	3.943	0.943
29-Oct-93	54.12	5	0.0837	-1.381	3.991	0.949
20-Dec-93	54.85	6	0.1018	-1.271	4.005	0.954
15-Feb-94	55.57	7	0.1199	-1.175	4.018	0.957
3-Oct-91	56.1	8	0.1380	-1.089	4.027	0.960
15-Feb-94	56.11	9	0.1561	-1.011	4.027	0.961
14-Dec-94	56.79	10	0.1742	-0.938	4.039	0.962
16-Aug-94	58.89	11	0.1923	-0.869	4.076	0.962
9-Sep-94	59.6	12	0.2104	-0.805	4.088	0.961
2-Dec-93	61.06	13	0.2285	-0.744	4.112	0.960
17-Nov-98	68	14	0.2466	-0.685	4.220	0.959
26-Jul-95	68.1	15	0.2647	-0.629	4.221	0.957
14-Sep-95	68.1	16	0.2828	-0.575	4.221	0.955
19-Jan-94	68.93	17	0.3009	-0.522	4.233	0.953
15-Aug-95	69.77	18	0.3190	-0.470	4.245	0.950
23-Jul-94	75.06	19	0.3371	-0.420	4.318	0.947
19-Jan-94	76.14	20	0.3552	-0.371	4.333	0.944
1-Sep-99	77	21	0.3733	-0.323	4.344	0.941
10-Dec-98	81	22	0.3914	-0.276	4.394	0.939
12-Jul-95	83.78	23	0.4095	-0.229	4.428	0.937
7-Mar-94	116.89	24	0.4276	-0.182	4.761	0.937
7-Nov-97	118	25	0.4457	-0.137	4.771	0.933
24-Jun-94	125.94	26	0.4638	-0.091	4.836	0.929
29-Dec-98	129	27	0.4819	-0.045	4.860	0.926
5-Aug-99	133	28	0.5000	0.000	4.890	0.923
23-Mar-94	165.89	29	0.5181	0.045	5.111	0.921
28-Jun-95	178.93	30	0.5362	0.091	5.187	0.917
8-Mar-95	190.62	31	0.5543	0.137	5.250	0.911
8-Jun-94	210.99	32	0.5724	0.182	5.352	0.906
13-Jun-95	213.69	33	0.5905	0.229	5.365	0.899
11-Jan-95	249.07	34	0.6086	0.276	5.518	0.894
9-Feb-95	258.83	35	0.6267	0.323	5.556	0.886
6-Apr-94	262.17	36	0.6448	0.371	5.569	0.878
15-Jul-99	282	37	0.6629	0.420	5.642	0.872
25-Apr-95	313.97	38	0.6810	0.470	5.749	0.868
13-Apr-95	357.43	39	0.6991	0.522	5.879	0.864
20-May-94	391.53	40	0.7172	0.575	5.970	0.858
3-May-94	396.68	41	0.7353	0.629	5.983	0.852
5-May-99	479	42	0.7534	0.685	6.172	0.866
24-Mar-99	525	43	0.7715	0.744	6.263	0.874
15-May-91	626	44	0.7896	0.805	6.439	0.901
19-Apr-99	731	45	0.8077	0.869	6.594	0.921

22-Mar-95	821.97	46	0.8258	0.938	6.712	0.926
13-May-98	865	47	0.8439	1.011	6.763	0.919
18-Apr-94	927.99	48	0.8620	1.089	6.833	0.916
1-Jun-99	1040	49	0.8801	1.175	6.947	0.918
16-Jun-99	1180	50	0.8982	1.271	7.073	0.898
24-May-99	1220	51	0.9163	1.381	7.107	0.894
27-May-99	1230	52	0.9344	1.509	7.115	
23-May-95	1234.55	53	0.9525	1.669	7.118	
26-May-99	1570	54	0.9706	1.890	7.359	
10-May-95	1741.79	55	0.9887	2.280	7.463	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.		see comment
Station:	**SF249**	**Date:** 19-Jun-00
Chemical:	**dCd**	**Analyst:** J.MacLachlan
Notes:		
Input Discharge and Concentration Data below (in red)		

	Date	Discharge	Concentration	Load			
Avg:	34,626	207	7	6	0.00	0.00	0.00
SD:	440	208	3	4	1.00	1.00	1.00
CV:	0.01	1.00	0.41	0.73			
Min:	33,372	26	2	1.4	-0.87	-1.72	-1.05
Max:	35,927	791	15	22	2.81	2.57	3.88
Median:	34,612	121	7	5	-0.41	-0.11	-0.17

dCd SF249			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.469)		update r2	0.47	0.469	r2:	0.039	0.035
r2 Q,[COC]:	0.47	[tCd]	Q		m:	0.0927	0.00040
slope, m:	-0.01	9	25.7		b:	-3003	-9.12
intercept, b:	9.4	7	206.8				
N: 37		2	791				
LnConc. = mLn(Q)+b (r2=0.693)		update r2	0.69	0.693			
r2 lnQ,ln[COC]:	0.69	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.38	2.52	3.24	12	26		
intercept, b:	3.75	1.73	5.33	6	207		
N: 37		1.22	6.67	3	791		

N= 37

	Sampling Date	Q Discharge cfs	dCd Concentration ug/L	dCd Load lbs/day	Ln Q	Ln dCd Conc.	Ln dCd Load	dCd SF249 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data									for graph 0	
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	14-May-91	513.3	2.2	6.1	6.24	0.79	1.80	1.48	-1.72	0.05
MFG	3-Oct-91	51.7	14	3.9	3.95	2.64	1.36	-0.75	2.23	-0.46
IDEQ	29-Oct-93	48.65	8.7	2.3	3.88	2.16	0.82	-0.76	0.46	-0.84
IDEQ	2-Dec-93	59.86	8.4	2.7	4.09	2.13	1.00	-0.71	0.36	-0.74
IDEQ	20-Dec-93	46.55	12.1	3.0	3.84	2.49	1.11	-0.77	1.60	-0.66
IDEQ	19-Jan-94	66.45	9.6	3.4	4.20	2.26	1.23	-0.68	0.76	-0.57
IDEQ	17-Feb-94	50.11	8.4	2.3	3.91	2.13	0.82	-0.75	0.36	-0.84
IDEQ	7-Mar-94	131.53	7.7	5.4	4.88	2.04	1.70	-0.36	0.12	-0.10
IDEQ	23-Mar-94	131.53	7.7	5.4	4.88	2.04	1.70	-0.36	0.12	-0.10
IDEQ	6-Apr-94	197.02	5.6	5.9	5.28	1.72	1.78	-0.05	-0.58	0.02
IDEQ	18-Apr-94	680.99	3.8	13.9	6.52	1.34	2.63	2.28	-1.18	1.88
IDEQ	3-May-94	302.04	4.2	6.8	5.71	1.44	1.92	0.46	-1.05	0.22
IDEQ	20-May-94	311.85	4	6.7	5.74	1.39	1.90	0.51	-1.11	0.20
IDEQ	8-Jun-94	176.59	5.4	5.1	5.17	1.69	1.64	-0.15	-0.65	-0.17
IDEQ	24-Jun-94	96.86	6.8	3.5	4.57	1.92	1.27	-0.53	-0.18	-0.54
IDEQ	23-Jul-94	54.76	7	2.1	4.00	1.95	0.72	-0.73	-0.11	-0.89
IDEQ	16-Aug-94	50.11	9.1	2.5	3.91	2.21	0.90	-0.75	0.59	-0.80
IDEQ	9-Sep-94	25.66	9.8	1.4	3.24	2.28	0.30	-0.87	0.83	-1.05
IDEQ	5-Oct-94	41.39	9.1	2.0	3.72	2.21	0.71	-0.80	0.59	-0.90
IDEQ	15-Nov-94	49.37	14	3.7	3.90	2.64	1.31	-0.76	2.23	-0.50
IDEQ	14-Dec-94	55.58	15	4.5	4.02	2.71	1.50	-0.73	2.57	-0.32
IDEQ	11-Jan-95	234.25	6.7	8.4	5.46	1.90	2.13	0.13	-0.21	0.60
IDEQ	9-Feb-95	234.25	6.4	8.1	5.46	1.86	2.09	0.13	-0.31	0.51
IDEQ	8-Mar-95	203.3	6.7	7.3	5.31	1.90	1.99	-0.02	-0.21	0.34
IDEQ	22-Mar-95	549.7	7.6	22.5	6.31	2.03	3.11	1.65	0.09	3.88
IDEQ	13-Apr-95	322	5.3	9.2	5.77	1.67	2.22	0.55	-0.68	0.77
IDEQ	25-Apr-95	216.49	6.2	7.2	5.38	1.82	1.98	0.05	-0.38	0.32
IDEQ	11-May-95	790.77	3.7	15.7	6.67	1.31	2.76	2.81	-1.21	2.30
IDEQ	23-May-95	451.89	3.8	9.2	6.11	1.34	2.22	1.18	-1.18	0.79
IDEQ	13-Jun-95	253.54	4.4	6.0	5.54	1.48	1.79	0.22	-0.98	0.03
IDEQ	28-Jun-95	119.95	5.6	3.6	4.79	1.72	1.28	-0.42	-0.58	-0.53
IDEQ	12-Jul-95	78.37	6.5	2.7	4.36	1.87	1.01	-0.62	-0.28	-0.73
IDEQ	26-Jul-95	60.76	7.4	2.4	4.11	2.00	0.88	-0.70	0.02	-0.80
IDEQ	15-Aug-95	58.11	8	2.5	4.06	2.08	0.92	-0.72	0.22	-0.79
IDEQ	14-Sep-95	58.11	9.2	2.9	4.06	2.22	1.06	-0.72	0.63	-0.70
URS	6-Nov-97	121	8.38	5.5	4.80	2.13	1.70	-0.41	0.35	-0.10
URS	12-May-98	758	2.7	11.0	6.63	0.99	2.40	2.65	-1.55	1.20

dCd

Concentration over time analysis

				r2	Slope, m
	dCd	SF249		Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.014	-0.00011
	Time	Ln[COC]	[COC]		
first:	14-May-91	2.05	8		
mid:	5-Oct-94	1.91	7		
last:	12-May-98	1.76	6		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

Load over time analysis

	dCd	SF249		Load over time	
	LnLoad=mTime+b All data r2, m:			0.040	0.00029
	Time	LnLoad	Load		
first:	14-May-91	1.20	3		
mid:	5-Oct-94	1.55	5		
last:	12-May-98	1.93	7		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

	max r2: 0.464			max r2: 0.930		
	Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.014	-0.00011	5.88	0.040	0.00029	-8.46
	0.165	-0.00041	16.08	0.069	0.00043	-13.39
	0.096	-0.00034	13.77	0.075	0.00052	-16.35
	0.087	-0.00033	13.38	0.060	0.00046	-14.39
	0.080	-0.00032	13.05	0.048	0.00042	-12.89
	0.058	-0.00027	11.25	0.039	0.00038	-11.64
	0.045	-0.00024	10.18	0.033	0.00036	-10.73
	0.038	-0.00022	9.52	0.021	0.00028	-8.13
	0.033	-0.00021	9.13	0.023	0.00030	-8.70
	0.028	-0.00020	8.68	0.024	0.00032	-9.31
	0.034	-0.00022	9.50	0.028	0.00034	-10.34
	0.062	-0.00029	12.14	0.058	0.00048	-15.25
	0.097	-0.00037	14.64	0.071	0.00055	-17.49
	0.152	-0.00045	17.67	0.087	0.00062	-19.90
	0.184	-0.00051	19.56	0.093	0.00065	-21.23
	0.194	-0.00053	20.49	0.086	0.00064	-20.76
	0.201	-0.00056	21.29	0.063	0.00054	-17.30
	0.185	-0.00054	20.69	0.045	0.00046	-14.27
	0.163	-0.00051	19.54	0.018	0.00026	-7.50
	0.144	-0.00048	18.59	0.004	0.00011	-2.13
	0.109	-0.00038	15.14	0.001	0.00004	0.33
	0.074	-0.00026	10.92	0.000	0.00000	2.02
	0.066	-0.00025	10.56	0.000	0.00004	0.48
	0.062	-0.00025	10.37	0.002	0.00008	-0.96
	0.054	-0.00023	9.89	0.003	0.00011	-2.03
	0.039	-0.00020	8.58	0.036	0.00032	-9.61
	0.044	-0.00021	9.15	0.064	0.00042	-13.15
	0.039	-0.00020	8.83	0.089	0.00050	-15.97
	0.087	-0.00029	12.00	0.297	0.00075	-24.88
	0.185	-0.00040	15.98	0.604	0.00096	-32.40
	0.315	-0.00051	19.96	0.866	0.00113	-38.50
	0.405	-0.00060	23.12	0.929	0.00122	-41.78
	0.464	-0.00069	26.13	0.930	0.00126	-43.05

update for EV, CV:

dCd
LN Analysis

Load

SF249
dCd

Load Data, EV=5.87 lbs/day CV=0.73

Load Data-based LN

		u	ln tCd Load	tCd Load
Avg:	**6**			
SD:	**4**	3	3.5	34
CV:	**0.73**	0	1.56	5
Min:	**1.4**	-3	-0.41	0.7
Max:	**22**			
Median:	**5**			

6	5.87
0.73	0.73

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.979, EV=5.93lbs/day CV=0.746; max r2=0.99**

r2 u,lnLoad:	0.979	u	lnLoad	Load	
slope, m:	1.504	3	3.55	35	
intercept, b:	-2.343	0	1.56	5	
N:	37	-3	-0.44	0.6	
E[Load]:	5.9	Parameter Estimates			0.979 0.979
SD[Load]:	4	from LN regression			5.9 5.93
CV[Load]:	0.75	update graph label			0.7 0.746

N: 37

max r2 0.990

Date	dCd Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
9-Sep-94	1.4	1	0.0168	-2.125	0.302	0.979
5-Oct-94	2.0	2	0.0436	-1.710	0.706	0.978
23-Jul-94	2.1	3	0.0705	-1.472	0.724	0.984
17-Feb-94	2.3	4	0.0973	-1.297	0.817	0.986
29-Oct-93	2.3	5	0.1242	-1.154	0.823	0.989
26-Jul-95	2.4	6	0.1510	-1.032	0.883	0.989
16-Aug-94	2.5	7	0.1779	-0.924	0.897	0.990
15-Aug-95	2.5	8	0.2047	-0.825	0.917	0.989
2-Dec-93	2.7	9	0.2315	-0.734	0.995	0.988
12-Jul-95	2.7	10	0.2584	-0.648	1.008	0.987
14-Sep-95	2.9	11	0.2852	-0.567	1.056	0.986
20-Dec-93	3.0	12	0.3121	-0.490	1.109	0.985
19-Jan-94	3.4	13	0.3389	-0.415	1.233	0.984
24-Jun-94	3.5	14	0.3658	-0.343	1.265	0.983
28-Jun-95	3.6	15	0.3926	-0.273	1.285	0.982
15-Nov-94	3.7	16	0.4195	-0.203	1.313	0.980
3-Oct-91	3.9	17	0.4463	-0.135	1.359	0.980
14-Dec-94	4.5	18	0.4732	-0.067	1.501	0.980
8-Jun-94	5.1	19	0.5000	0.000	1.635	0.978
7-Mar-94	5.4	20	0.5268	0.067	1.695	0.979
23-Mar-94	5.4	21	0.5537	0.135	1.695	0.982
6-Nov-97	5.5	22	0.5805	0.203	1.697	0.983
6-Apr-94	5.9	23	0.6074	0.273	1.781	0.982
13-Jun-95	6.0	24	0.6342	0.343	1.792	0.984
14-May-91	6.1	25	0.6611	0.415	1.804	0.984
20-May-94	6.7	26	0.6879	0.490	1.904	0.982
3-May-94	6.8	27	0.7148	0.567	1.921	0.985
25-Apr-95	7.2	28	0.7416	0.648	1.977	0.985
8-Mar-95	7.3	29	0.7685	0.734	1.992	0.986
9-Feb-95	8.1	30	0.7953	0.825	2.088	0.984
11-Jan-95	8.4	31	0.8221	0.924	2.133	0.984
13-Apr-95	9.2	32	0.8490	1.032	2.217	0.982
23-May-95	9.2	33	0.8758	1.154	2.223	0.980
12-May-98	11.0	34	0.9027	1.297	2.399	
18-Apr-94	13.9	35	0.9295	1.472	2.633	
11-May-95	15.7	36	0.9564	1.710	2.756	
22-Mar-95	22.5	37	0.9832	2.125	3.112	

update for EV, CV:

dCd		SF249	7	7.33
LN Analysis		dCd	0.41	0.408

Concentration — **Conc. Data, EV=7.33 ug/L CV=0.408**

		Data-based LN		
Avg:	7	u	ln[tCd]	[tCd]
SD:	3	3	3.1	22
CV:	0.41	2	1.91	7
Min:	2	0	0.74	2
Max:	15	-3		
Median:	7			

0.969 0.969

u=mLn(Conc.)+b: 7.4 7.45

update for r2, EV, CV: **r2=0.969, EV=7.45 ug/L CV=0.479; max r2=0.97** 0.479 0.479

r2 u,lnConc:	0.969	u	lnConc.	Conc.
slope, m:	2.202	3	3.27	26
intercept, b:	-4.194	0	1.90	7
N:	37	-3	0.54	2
E[Conc]:	7.4	Parameter Estimates		
SD[Conc]:	4	from LN regression		
CV[Conc]:	0.48	update graph label		

max r2 0.972

Date	dCd Concentration ug/L Ranked	N: 37 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
14-May-91	2.2	1	0.0168	-2.125	0.788	0.969
12-May-98	2.7	2	0.0436	-1.710	0.993	0.968
11-May-95	3.7	3	0.0705	-1.472	1.308	0.971
18-Apr-94	3.8	4	0.0973	-1.297	1.335	0.968
23-May-95	3.8	5	0.1242	-1.154	1.335	0.965
20-May-94	4	6	0.1510	-1.032	1.386	0.964
3-May-94	4.2	7	0.1779	-0.924	1.435	0.965
13-Jun-95	4.4	8	0.2047	-0.825	1.482	0.967
13-Apr-95	5.3	9	0.2315	-0.734	1.668	0.972
8-Jun-94	5.4	10	0.2584	-0.648	1.686	0.970
6-Apr-94	5.6	11	0.2852	-0.567	1.723	0.967
28-Jun-95	5.6	12	0.3121	-0.490	1.723	0.964
25-Apr-95	6.2	13	0.3389	-0.415	1.825	0.962
9-Feb-95	6.4	14	0.3658	-0.343	1.856	0.959
12-Jul-95	6.5	15	0.3926	-0.273	1.872	0.957
8-Mar-95	6.7	16	0.4195	-0.203	1.902	0.954
11-Jan-95	6.7	17	0.4463	-0.135	1.902	0.952
24-Jun-94	6.8	18	0.4732	-0.067	1.917	0.948
23-Jul-94	7	19	0.5000	0.000	1.946	0.943
26-Jul-95	7.4	20	0.5268	0.067	2.001	0.937
22-Mar-95	7.6	21	0.5537	0.135	2.028	0.934
7-Mar-94	7.7	22	0.5805	0.203	2.041	0.931
23-Mar-94	7.7	23	0.6074	0.273	2.041	0.928
15-Aug-95	8	24	0.6342	0.343	2.079	0.921
6-Nov-97	8.38	25	0.6611	0.415	2.126	0.914
2-Dec-93	8.4	26	0.6879	0.490	2.128	0.914
17-Feb-94	8.4	27	0.7148	0.567	2.128	0.908
29-Oct-93	8.7	28	0.7416	0.648	2.163	0.896
5-Oct-94	9.1	29	0.7685	0.734	2.208	0.881
16-Aug-94	9.1	30	0.7953	0.825	2.208	0.868
14-Sep-95	9.2	31	0.8221	0.924	2.219	0.839
19-Jan-94	9.6	32	0.8490	1.032	2.262	0.789
9-Sep-94	9.8	33	0.8758	1.154	2.282	0.708
20-Dec-93	12.1	34	0.9027	1.297	2.493	
3-Oct-91	14	35	0.9295	1.472	2.639	
15-Nov-94	14	36	0.9564	1.710	2.639	
14-Dec-94	15	37	0.9832	2.125	2.708	

update for EV, CV:

dCd		**SF249**			207	207
LN Analysis		**dCd**			1.00	1
Discharge, Q		**Q Data, EV=207 cfs CV=1**				
Avg:	207	**Q Data-based LN**				
SD:	208	u	lnQ	Q		
CV:	1.00	3	7.5	1787		
Min:	26	0	4.98	146		
Max:	791	-3	2.48	12		
Median:	121					
					0.940	0.94
					219.4	219
		u=mLn(Q)+b:			1.34	1.34

update for r2, EV, CV: **r2=0.94, EV=219 cfs CV=1.34; max r2=0.97**

r2 u,lnQ:	0.940	u	lnQ	Q
slope, m:	0.987	3	7.92	2742
intercept, b:	-4.817	0	4.88	131
N:	37	-3	1.84	6
E[Q]:	219.4	Parameter Estimates		
SD[Q]:	293	from LN regression		
CV[Q]:	1.34	update graph label		

	Q	N: 37				max r2 0.967
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
9-Sep-94	25.66	1	0.0168	-2.125	3.245	0.940
5-Oct-94	41.39	2	0.0436	-1.710	3.723	0.941
20-Dec-93	46.55	3	0.0705	-1.472	3.841	0.949
29-Oct-93	48.65	4	0.0973	-1.297	3.885	0.957
15-Nov-94	49.37	5	0.1242	-1.154	3.899	0.962
16-Aug-94	50.11	6	0.1510	-1.032	3.914	0.965
17-Feb-94	50.11	7	0.1779	-0.924	3.914	0.967
3-Oct-91	51.7	8	0.2047	-0.825	3.945	0.966
23-Jul-94	54.76	9	0.2315	-0.734	4.003	0.964
14-Dec-94	55.58	10	0.2584	-0.648	4.018	0.962
14-Sep-95	58.11	11	0.2852	-0.567	4.062	0.959
15-Aug-95	58.11	12	0.3121	-0.490	4.062	0.955
2-Dec-93	59.86	13	0.3389	-0.415	4.092	0.951
26-Jul-95	60.76	14	0.3658	-0.343	4.107	0.949
19-Jan-94	66.45	15	0.3926	-0.273	4.196	0.950
12-Jul-95	78.37	16	0.4195	-0.203	4.361	0.954
24-Jun-94	96.86	17	0.4463	-0.135	4.573	0.958
28-Jun-95	119.95	18	0.4732	-0.067	4.787	0.957
6-Nov-97	121	19	0.5000	0.000	4.796	0.952
7-Mar-94	131.53	20	0.5268	0.067	4.879	0.949
23-Mar-94	131.53	21	0.5537	0.135	4.879	0.946
8-Jun-94	176.59	22	0.5805	0.203	5.174	0.950
6-Apr-94	197.02	23	0.6074	0.273	5.283	0.944
8-Mar-95	203.3	24	0.6342	0.343	5.315	0.937
25-Apr-95	216.49	25	0.6611	0.415	5.378	0.928
9-Feb-95	234.25	26	0.6879	0.490	5.456	0.917
11-Jan-95	234.25	27	0.7148	0.567	5.456	0.903
13-Jun-95	253.54	28	0.7416	0.648	5.536	0.888
3-May-94	302.04	29	0.7685	0.734	5.711	0.872
20-May-94	311.85	30	0.7953	0.825	5.743	0.844
13-Apr-95	322	31	0.8221	0.924	5.775	0.812
23-May-95	451.89	32	0.8490	1.032	6.113	0.874
14-May-91	513.3	33	0.8758	1.154	6.241	0.842
22-Mar-95	549.7	34	0.9027	1.297	6.309	
18-Apr-94	680.99	35	0.9295	1.472	6.524	
12-May-98	758	36	0.9564	1.710	6.631	
11-May-95	790.77	37	0.9832	2.125	6.673	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.	see comment
Station: SF249	Date: 19-Jun-00
Chemical: dPb	Analyst: JMacLachlan
Notes:	
Input Discharge and Concentration Data below (in red)	

	Date	Discharge	Concentration	Load			
Avg:	34,626	207	10	11		0.00	0.00	0.00
SD:	440	208	3	11		1.00	1.00	1.00
CV:	0.01	1.00	0.30	1.02				
Min:	33,372	26	3	1.5		-0.87	-2.40	-0.84
Max:	35,927	791	20	50		2.81	2.98	3.71
Median:	34,612	121	10	7		-0.41	-0.13	-0.32

dPb SF249			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.095)		update r2	0.10	0.095	r2:	0.039	0.035
r2 Q,[COC]:	0.10	[tCd]	Q		m:	0.0927	0.00040
slope, m:	-0.005	11	25.7		b:	-3003	-9.12
intercept, b:	11.3	10	206.8				
N: 37		8	791				
LnConc. = mLn(Q)+b (r2=0.137)		update r2	0.14	0.137			
r2 lnQ,ln[COC]:	0.14	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.13	2.50	3.24	12	26		
intercept, b:	2.91	2.24	5.33	9	207		
N: 37		2.07	6.67	8	791		

N= 37

	Sampling Date	Q Discharge	dPb Concentration	dPb Load	Ln Q	Ln dPb Conc.	Ln dPb Load	for graph 0 dPb SF249 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	14-May-91	513.3	3	8.3	6.24	1.10	2.11	1.48	-2.40	-0.21
MFG	3-Oct-91	51.7	8	2.2	3.95	2.08	0.80	-0.75	-0.78	-0.77
IDEQ	29-Oct-93	48.65	12	3.1	3.88	2.48	1.14	-0.76	0.52	-0.69
IDEQ	2-Dec-93	59.86	10	3.2	4.09	2.30	1.17	-0.71	-0.13	-0.68
IDEQ	20-Dec-93	46.55	10	2.5	3.84	2.30	0.92	-0.77	-0.13	-0.75
IDEQ	19-Jan-94	66.45	10	3.6	4.20	2.30	1.27	-0.68	-0.13	-0.65
IDEQ	17-Feb-94	50.11	9	2.4	3.91	2.20	0.89	-0.75	-0.45	-0.75
IDEQ	7-Mar-94	131.53	10	7.1	4.88	2.30	1.96	-0.36	-0.13	-0.32
IDEQ	23-Mar-94	131.53	11	7.8	4.88	2.40	2.05	-0.36	0.19	-0.25
IDEQ	6-Apr-94	197.02	8	8.5	5.28	2.08	2.14	-0.05	-0.78	-0.19
IDEQ	18-Apr-94	680.99	6	22.0	6.52	1.79	3.09	2.28	-1.43	1.07
IDEQ	3-May-94	302.04	9	14.6	5.71	2.20	2.68	0.46	-0.45	0.38
IDEQ	20-May-94	311.85	7	11.7	5.74	1.95	2.46	0.51	-1.10	0.12
IDEQ	8-Jun-94	176.59	11	10.5	5.17	2.40	2.35	-0.15	0.19	-0.01
IDEQ	24-Jun-94	96.86	10	5.2	4.57	2.30	1.65	-0.53	-0.13	-0.49
IDEQ	23-Jul-94	54.76	12	3.5	4.00	2.48	1.26	-0.73	0.52	-0.65
IDEQ	16-Aug-94	50.11	11	3.0	3.91	2.40	1.09	-0.75	0.19	-0.70
IDEQ	9-Sep-94	25.66	11	1.5	3.24	2.40	0.42	-0.87	0.19	-0.84
IDEQ	5-Oct-94	41.39	8	1.8	3.72	2.08	0.58	-0.80	-0.78	-0.81
IDEQ	15-Nov-94	49.37	16	4.2	3.90	2.77	1.45	-0.76	1.81	-0.58
IDEQ	14-Dec-94	55.58	11	3.3	4.02	2.40	1.19	-0.73	0.19	-0.67
IDEQ	11-Jan-95	234.25	6	7.6	5.46	1.79	2.02	0.13	-1.43	-0.28
IDEQ	9-Feb-95	234.25	9	11.3	5.46	2.20	2.43	0.13	-0.45	0.08
IDEQ	8-Mar-95	203.3	10	10.9	5.31	2.30	2.39	-0.02	-0.13	0.04
IDEQ	22-Mar-95	549.7	17	50.3	6.31	2.83	3.92	1.65	2.14	3.71
IDEQ	13-Apr-95	322	9	15.6	5.77	2.20	2.75	0.55	-0.45	0.47
IDEQ	25-Apr-95	216.49	11	12.8	5.38	2.40	2.55	0.05	0.19	0.22
IDEQ	11-May-95	790.77	9	38.3	6.67	2.20	3.65	2.81	-0.45	2.59
IDEQ	23-May-95	451.89	9	21.9	6.11	2.20	3.09	1.18	-0.45	1.06
IDEQ	13-Jun-95	253.54	15	20.5	5.54	2.71	3.02	0.22	1.49	0.93
IDEQ	28-Jun-95	119.95	11	7.1	4.79	2.40	1.96	-0.42	0.19	-0.32
IDEQ	12-Jul-95	78.37	10	4.2	4.36	2.30	1.44	-0.62	-0.13	-0.59
IDEQ	26-Jul-95	60.76	15	4.9	4.11	2.71	1.59	-0.70	1.49	-0.52
IDEQ	15-Aug-95	58.11	11	3.4	4.06	2.40	1.24	-0.72	0.19	-0.66
IDEQ	14-Sep-95	58.11	12	3.8	4.06	2.48	1.32	-0.72	0.52	-0.63
URS	6-Nov-97	121	19.6	12.8	4.80	2.98	2.55	-0.41	2.98	0.21
URS	12-May-98	758	8.2	33.4	6.63	2.10	3.51	2.65	-0.71	2.14

dPb

Concentration over time analysis r2 Slope, m

dPb	SF249		Concentration over time	
LnConc.=mTime+b All data r2, m:			0.265	0.00038
	Time	Ln[COC]	[COC]	
first:	14-May-91	1.82	6	
mid:	5-Oct-94	2.29	10	
last:	12-May-98	2.78	16	
LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1	
	12-May-98	0.00	1	

Load over time analysis

dPb	SF249		Load over time	
LnLoad=mTime+b All data r2, m:			0.152	0.00078
	Time	LnLoad	Load	
first:	14-May-91	0.97	3	
mid:	5-Oct-94	1.94	7	
last:	12-May-98	2.96	19	
LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1	
	12-May-98	0.00	1	

max r2: 0.265 max r2: 0.926

Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.265	0.00038	-10.72	0.152	0.00078	-25.06
0.101	0.00021	-4.85	0.212	0.00105	-34.32
0.076	0.00020	-4.73	0.173	0.00106	-34.86
0.094	0.00023	-5.63	0.157	0.00102	-33.40
0.095	0.00024	-5.87	0.141	0.00097	-31.81
0.097	0.00024	-6.12	0.120	0.00089	-29.01
0.098	0.00025	-6.36	0.105	0.00085	-27.27
0.091	0.00025	-6.18	0.084	0.00075	-23.83
0.092	0.00025	-6.38	0.084	0.00076	-24.21
0.101	0.00027	-6.98	0.085	0.00078	-24.96
0.086	0.00025	-6.29	0.089	0.00081	-26.12
0.056	0.00019	-4.22	0.126	0.00097	-31.61
0.047	0.00018	-3.73	0.155	0.00109	-35.86
0.026	0.00013	-1.97	0.179	0.00119	-39.54
0.027	0.00013	-2.20	0.201	0.00129	-42.99
0.023	0.00013	-1.97	0.195	0.00130	-43.22
0.030	0.00014	-2.65	0.176	0.00124	-41.24
0.032	0.00015	-2.93	0.151	0.00115	-37.89
0.034	0.00016	-3.22	0.114	0.00093	-30.26
0.019	0.00012	-1.73	0.078	0.00071	-22.45
0.045	0.00018	-3.88	0.058	0.00060	-18.69
0.048	0.00019	-4.18	0.034	0.00044	-13.08
0.020	0.00010	-1.23	0.027	0.00039	-11.32
0.010	0.00007	-0.14	0.026	0.00040	-11.48
0.006	0.00006	0.51	0.025	0.00040	-11.40
0.029	0.00012	-1.70	0.079	0.00064	-19.89
0.016	0.00009	-0.54	0.099	0.00072	-22.84
0.014	0.00008	-0.38	0.114	0.00078	-25.18
0.003	0.00004	1.22	0.271	0.00108	-35.66
0.001	-0.00002	3.36	0.466	0.00134	-45.03
0.001	0.00002	1.63	0.844	0.00167	-56.82
0.000	0.00000	2.47	0.926	0.00183	-62.44
0.013	-0.00008	5.22	0.924	0.00187	-63.95

update for EV, CV:

dPb		**SF249**		
LN Analysis		**dPb**		
Load		**Load Data, EV=10.5 lbs/day CV=1.02**		
Avg:	**11**	**Load Data-based LN**		
SD:	**11**	u	ln tCd Load	tCd Load
CV:	**1.02**	3	4.5	93
Min:	**1.5**	0	2.00	7
Max:	**50**	-3	-0.54	0.6
Median:	**7**			
		11	10.5	
		1.02	1.02	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.975, EV=10.8lbs/day CV=1.16; max r2=0.99**

r2 u,lnLoad:	0.975	u	lnLoad	Load		
slope, m:	1.082	3	4.72	112		
intercept, b:	-2.108	0	1.95	7		
N:	37	-3	-0.82	0.4		
E[Load]:	10.8	Parameter Estimates			0.975	0.975
SD[Load]:	12	from LN regression			10.8	10.8
CV[Load]:	1.16	update graph label			1.2	1.16
					max r2	
	dPb	N: 37			0.987	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
9-Sep-94	**1.5**	1	0.0168	-2.125	0.418	0.975
5-Oct-94	**1.8**	2	0.0436	-1.710	0.577	0.980
3-Oct-91	**2.2**	3	0.0705	-1.472	0.800	0.981
17-Feb-94	**2.4**	4	0.0973	-1.297	0.886	0.983
20-Dec-93	**2.5**	5	0.1242	-1.154	0.918	0.984
16-Aug-94	**3.0**	6	0.1510	-1.032	1.087	0.984
29-Oct-93	**3.1**	7	0.1779	-0.924	1.144	0.986
2-Dec-93	**3.2**	8	0.2047	-0.825	1.170	0.987
14-Dec-94	**3.3**	9	0.2315	-0.734	1.191	0.987
15-Aug-95	**3.4**	10	0.2584	-0.648	1.235	0.987
23-Jul-94	**3.5**	11	0.2852	-0.567	1.263	0.986
19-Jan-94	**3.6**	12	0.3121	-0.490	1.274	0.985
14-Sep-95	**3.8**	13	0.3389	-0.415	1.322	0.984
12-Jul-95	**4.2**	14	0.3658	-0.343	1.439	0.983
15-Nov-94	**4.2**	15	0.3926	-0.273	1.447	0.982
26-Jul-95	**4.9**	16	0.4195	-0.203	1.590	0.984
24-Jun-94	**5.2**	17	0.4463	-0.135	1.651	0.984
7-Mar-94	**7.1**	18	0.4732	-0.067	1.957	0.986
28-Jun-95	**7.1**	19	0.5000	0.000	1.960	0.986
11-Jan-95	**7.6**	20	0.5268	0.067	2.023	0.985
23-Mar-94	**7.8**	21	0.5537	0.135	2.052	0.983
14-May-91	**8.3**	22	0.5805	0.203	2.114	0.981
6-Apr-94	**8.5**	23	0.6074	0.273	2.138	0.979
8-Jun-94	**10.5**	24	0.6342	0.343	2.347	0.977
8-Mar-95	**10.9**	25	0.6611	0.415	2.392	0.976
9-Feb-95	**11.3**	26	0.6879	0.490	2.429	0.975
20-May-94	**11.7**	27	0.7148	0.567	2.463	0.973
6-Nov-97	**12.8**	28	0.7416	0.648	2.546	0.968
25-Apr-95	**12.8**	29	0.7685	0.734	2.550	0.963
3-May-94	**14.6**	30	0.7953	0.825	2.683	0.956
13-Apr-95	**15.6**	31	0.8221	0.924	2.747	0.946
13-Jun-95	**20.5**	32	0.8490	1.032	3.019	0.940
23-May-95	**21.9**	33	0.8758	1.154	3.086	0.925
18-Apr-94	**22.0**	34	0.9027	1.297	3.090	
12-May-98	**33.4**	35	0.9295	1.472	3.510	
11-May-95	**38.3**	36	0.9564	1.710	3.645	
22-Mar-95	**50.3**	37	0.9832	2.125	3.918	

update for EV, CV:

dPb		SF249	10	10.4
LN Analysis		dPb	0.30	0.297

Concentration

Conc. Data, EV=10.4 ug/L CV=0.297

Avg:	10
SD:	3
CV:	0.30
Min:	3
Max:	20
Median:	10

Data-based LN

u	ln[tCd]	[tCd]
3	3.2	24
0	2.30	10
-3	1.43	4

			0.879	0.879
u=mLn(Conc.)+b:			10.6	10.6
update for r2, EV, CV:	r2=0.879, EV=10.6 ug/L CV=0.367; max r2=0.98		0.367	0.367

r2 u,lnConc:	0.879	u	lnConc.	Conc.
slope, m:	2.816	3	3.36	29
intercept, b:	-6.461	0	2.29	10
N:	37	-3	1.23	3
E[Conc]:	10.6	Parameter Estimates		
SD[Conc]:	4	from LN regression		
CV[Conc]:	0.37	update graph label		

Date	dPb Concentration ug/L Ranked	N: 37 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.977 r2 forward
update and rank for new data						
14-May-91	3	1	0.0168	-2.125	1.099	0.879
11-Jan-95	6	2	0.0436	-1.710	1.792	0.947
18-Apr-94	6	3	0.0705	-1.472	1.792	0.941
20-May-94	7	4	0.0973	-1.297	1.946	0.941
3-Oct-91	8	5	0.1242	-1.154	2.079	0.935
5-Oct-94	8	6	0.1510	-1.032	2.079	0.934
6-Apr-94	8	7	0.1779	-0.924	2.079	0.930
12-May-98	8.2	8	0.2047	-0.825	2.104	0.924
3-May-94	9	9	0.2315	-0.734	2.197	0.919
9-Feb-95	9	10	0.2584	-0.648	2.197	0.921
11-May-95	9	11	0.2852	-0.567	2.197	0.922
13-Apr-95	9	12	0.3121	-0.490	2.197	0.920
17-Feb-94	9	13	0.3389	-0.415	2.197	0.917
23-May-95	9	14	0.3658	-0.343	2.197	0.911
2-Dec-93	10	15	0.3926	-0.273	2.303	0.904
7-Mar-94	10	16	0.4195	-0.203	2.303	0.911
8-Mar-95	10	17	0.4463	-0.135	2.303	0.916
12-Jul-95	10	18	0.4732	-0.067	2.303	0.919
19-Jan-94	10	19	0.5000	0.000	2.303	0.920
20-Dec-93	10	20	0.5268	0.067	2.303	0.918
24-Jun-94	10	21	0.5537	0.135	2.303	0.914
8-Jun-94	11	22	0.5805	0.203	2.398	0.906
9-Sep-94	11	23	0.6074	0.273	2.398	0.919
14-Dec-94	11	24	0.6342	0.343	2.398	0.930
15-Aug-95	11	25	0.6611	0.415	2.398	0.939
16-Aug-94	11	26	0.6879	0.490	2.398	0.945
23-Mar-94	11	27	0.7148	0.567	2.398	0.946
25-Apr-95	11	28	0.7416	0.648	2.398	0.941
28-Jun-95	11	29	0.7685	0.734	2.398	0.930
14-Sep-95	12	30	0.7953	0.825	2.485	0.916
23-Jul-94	12	31	0.8221	0.924	2.485	0.897
29-Oct-93	12	32	0.8490	1.032	2.485	0.868
13-Jun-95	15	33	0.8758	1.154	2.708	0.977
26-Jul-95	15	34	0.9027	1.297	2.708	
15-Nov-94	16	35	0.9295	1.472	2.773	
22-Mar-95	17	36	0.9564	1.710	2.833	
6-Nov-97	19.6	37	0.9832	2.125	2.976	

update for EV, CV:

dPb		**SF249**			207	207
LN Analysis		**dPb**			1.00	1
Discharge, Q		**Q Data, EV=207 cfs CV=1**				
Avg:	**207**	**Q Data-based LN**				
SD:	**208**	u	lnQ	Q		
CV:	**1.00**	3	7.5	1787		
Min:	**26**	0	4.98	146		
Max:	**791**	-3	2.48	12		
Median:	**121**					
					0.940	0.94
					219.4	219
	u=mLn(Q)+b:				1.34	1.34

update for r2, EV, CV: **r2=0.94, EV=219 cfs CV=1.34; max r2=0.97**

r2 u,lnQ:	0.940	u	lnQ	Q
slope, m:	0.987	3	7.92	2742
intercept, b:	-4.817	0	4.88	131
N: 37		-3	1.84	6
E[Q]:	219.4	Parameter Estimates		
SD[Q]:	293	from LN regression		
CV[Q]:	1.34	update graph label		

	Q	N: 37				max r2 0.967
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
9-Sep-94	25.66	1	0.0168	-2.125	3.245	0.940
5-Oct-94	41.39	2	0.0436	-1.710	3.723	0.941
20-Dec-93	46.55	3	0.0705	-1.472	3.841	0.949
29-Oct-93	48.65	4	0.0973	-1.297	3.885	0.957
15-Nov-94	49.37	5	0.1242	-1.154	3.899	0.962
16-Aug-94	50.11	6	0.1510	-1.032	3.914	0.965
17-Feb-94	50.11	7	0.1779	-0.924	3.914	0.967
3-Oct-91	51.7	8	0.2047	-0.825	3.945	0.966
23-Jul-94	54.76	9	0.2315	-0.734	4.003	0.964
14-Dec-94	55.58	10	0.2584	-0.648	4.018	0.962
14-Sep-95	58.11	11	0.2852	-0.567	4.062	0.959
15-Aug-95	58.11	12	0.3121	-0.490	4.062	0.955
2-Dec-93	59.86	13	0.3389	-0.415	4.092	0.951
26-Jul-95	60.76	14	0.3658	-0.343	4.107	0.949
19-Jan-94	66.45	15	0.3926	-0.273	4.196	0.950
12-Jul-95	78.37	16	0.4195	-0.203	4.361	0.954
24-Jun-94	96.86	17	0.4463	-0.135	4.573	0.958
28-Jun-95	119.95	18	0.4732	-0.067	4.787	0.957
6-Nov-97	121	19	0.5000	0.000	4.796	0.952
7-Mar-94	131.53	20	0.5268	0.067	4.879	0.949
23-Mar-94	131.53	21	0.5537	0.135	4.879	0.946
8-Jun-94	176.59	22	0.5805	0.203	5.174	0.950
6-Apr-94	197.02	23	0.6074	0.273	5.283	0.944
8-Mar-95	203.3	24	0.6342	0.343	5.315	0.937
25-Apr-95	216.49	25	0.6611	0.415	5.378	0.928
9-Feb-95	234.25	26	0.6879	0.490	5.456	0.917
11-Jan-95	234.25	27	0.7148	0.567	5.456	0.903
13-Jun-95	253.54	28	0.7416	0.648	5.536	0.888
3-May-94	302.04	29	0.7685	0.734	5.711	0.872
20-May-94	311.85	30	0.7953	0.825	5.743	0.844
13-Apr-95	322	31	0.8221	0.924	5.775	0.812
23-May-95	451.89	32	0.8490	1.032	6.113	0.874
14-May-91	513.3	33	0.8758	1.154	6.241	0.842
22-Mar-95	549.7	34	0.9027	1.297	6.309	
18-Apr-94	680.99	35	0.9295	1.472	6.524	
12-May-98	758	36	0.9564	1.710	6.631	
11-May-95	790.77	37	0.9832	2.125	6.673	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.	see comment
Station: SF249	**Date:** 19-Jun-00
Chemical: dZn	**Analyst:** JMacLachlan
Notes:	

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,626	207	1,088	866	0.00	0.00	0.00
SD:	440	208	465	642	1.00	1.00	1.00
CV:	0.01	1.00	0.43	0.74			
Min:	33,372	26	371	197.4	-0.87	-1.54	-1.04
Max:	35,927	791	2,200	3,431	2.81	2.39	4.00
Median:	34,612	121	1,020	722	-0.41	-0.15	-0.23

dZn	SF249		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.438)		update r2	0.44	0.438	r2:	0.039	0.035
r2 Q,[COC]:	0.44	[tCd]	Q		m:	0.0927	0.00040
slope, m:	-1.5	1,356	25.7		b:	-3003	-9.12
intercept, b:	1394.5	1,088	206.8				
N: 37		222	791				
LnConc. = mLn(Q)+b (r2=0.614)		update r2	0.61	0.614			
r2 lnQ,ln[COC]:	0.61	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.38	7.52	3.24	1,846	26		
intercept, b:	8.77	6.72	5.33	827	207		
N: 37		6.20	6.67	493	791		

N= 37

	Sampling Date	Q Discharge cfs	dZn Concentration ug/L	dZn Load lbs/day	Ln Q	Ln dZn Conc.	Ln dZn Load	dZn SF249 Standardized Values = (x - Avg)/SD		for graph 0
update for new data								Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	14-May-91	513.3	372	1027.3	6.24	5.92	6.93	1.48	-1.54	0.25
MFG	3-Oct-91	51.7	1510	420.0	3.95	7.32	6.04	-0.75	0.91	-0.70
IDEQ	29-Oct-93	48.65	1570	410.9	3.88	7.36	6.02	-0.76	1.04	-0.71
IDEQ	2-Dec-93	59.86	1660	534.6	4.09	7.41	6.28	-0.71	1.23	-0.52
IDEQ	20-Dec-93	46.55	1930	483.3	3.84	7.57	6.18	-0.77	1.81	-0.60
IDEQ	19-Jan-94	66.45	1380	493.4	4.20	7.23	6.20	-0.68	0.63	-0.58
IDEQ	17-Feb-94	50.11	1540	415.2	3.91	7.34	6.03	-0.75	0.97	-0.70
IDEQ	7-Mar-94	131.53	1370	969.5	4.88	7.22	6.88	-0.36	0.61	0.16
IDEQ	23-Mar-94	131.53	1400	990.7	4.88	7.24	6.90	-0.36	0.67	0.19
IDEQ	6-Apr-94	197.02	874	926.4	5.28	6.77	6.83	-0.05	-0.46	0.09
IDEQ	18-Apr-94	680.99	599	2194.6	6.52	6.40	7.69	2.28	-1.05	2.07
IDEQ	3-May-94	302.04	569	924.6	5.71	6.34	6.83	0.46	-1.11	0.09
IDEQ	20-May-94	311.85	548	919.4	5.74	6.31	6.82	0.51	-1.16	0.08
IDEQ	8-Jun-94	176.59	812	771.4	5.17	6.70	6.65	-0.15	-0.59	-0.15
IDEQ	24-Jun-94	96.86	883	460.1	4.57	6.78	6.13	-0.53	-0.44	-0.63
IDEQ	23-Jul-94	54.76	857	252.5	4.00	6.75	5.53	-0.73	-0.50	-0.96
IDEQ	16-Aug-94	50.11	1040	280.4	3.91	6.95	5.64	-0.75	-0.10	-0.91
IDEQ	9-Sep-94	25.66	1430	197.4	3.24	7.27	5.29	-0.87	0.74	-1.04
IDEQ	5-Oct-94	41.39	1320	293.9	3.72	7.19	5.68	-0.80	0.50	-0.89
IDEQ	15-Nov-94	49.37	2200	584.3	3.90	7.70	6.37	-0.76	2.39	-0.44
IDEQ	14-Dec-94	55.58	2160	645.9	4.02	7.68	6.47	-0.73	2.30	-0.34
IDEQ	11-Jan-95	234.25	1200	1512.3	5.46	7.09	7.32	0.13	0.24	1.01
IDEQ	9-Feb-95	234.25	1020	1285.5	5.46	6.93	7.16	0.13	-0.15	0.65
IDEQ	8-Mar-95	203.3	997	1090.5	5.31	6.90	6.99	-0.02	-0.20	0.35
IDEQ	22-Mar-95	549.7	1160	3430.6	6.31	7.06	8.14	1.65	0.16	4.00
IDEQ	13-Apr-95	322	871	1508.9	5.77	6.77	7.32	0.55	-0.47	1.00
IDEQ	25-Apr-95	216.49	849	988.8	5.38	6.74	6.90	0.05	-0.51	0.19
IDEQ	11-May-95	790.77	476	2025.1	6.67	6.17	7.61	2.81	-1.31	1.81
IDEQ	23-May-95	451.89	432	1050.3	6.11	6.07	6.96	1.18	-1.41	0.29
IDEQ	13-Jun-95	253.54	529	721.6	5.54	6.27	6.58	0.22	-1.20	-0.23
IDEQ	28-Jun-95	119.95	743	479.5	4.79	6.61	6.17	-0.42	-0.74	-0.60
IDEQ	12-Jul-95	78.37	858	361.8	4.36	6.75	5.89	-0.62	-0.49	-0.79
IDEQ	26-Jul-95	60.76	1020	333.4	4.11	6.93	5.81	-0.70	-0.15	-0.83
IDEQ	15-Aug-95	58.11	1210	378.3	4.06	7.10	5.94	-0.72	0.26	-0.76
IDEQ	14-Sep-95	58.11	1300	406.4	4.06	7.17	6.01	-0.72	0.46	-0.72
URS	6-Nov-97	121	1190	774.7	4.80	7.08	6.65	-0.41	0.22	-0.14
URS	12-May-98	758	371	1513.0	6.63	5.92	7.32	2.65	-1.54	1.01

dZn

Concentration over time analysis

	dZn	SF249		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.026**	**-0.00017**
	Time	**Ln[COC]**	**[COC]**		
first:	14-May-91	7.11	1,221		
mid:	5-Oct-94	6.89	986		
last:	12-May-98	6.67	787		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

Load over time analysis

	dZn	SF249		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.025**	**0.00023**
	Time	**LnLoad**	**Load**		
first:	14-May-91	6.25	520		
mid:	5-Oct-94	6.54	694		
last:	12-May-98	6.85	941		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

max r2:	0.470		max r2:	0.939	
Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.026	-0.00017	12.85	0.025	0.00023	-1.49
0.159	-0.00045	22.47	0.055	0.00039	-7.00
0.141	-0.00048	23.58	0.039	0.00038	-6.55
0.124	-0.00045	22.63	0.031	0.00034	-5.14
0.105	-0.00042	21.36	0.027	0.00032	-4.59
0.081	-0.00036	19.33	0.021	0.00029	-3.56
0.068	-0.00033	18.41	0.017	0.00026	-2.50
0.053	-0.00029	16.97	0.011	0.00021	-0.68
0.041	-0.00026	15.83	0.014	0.00025	-2.00
0.030	-0.00022	14.45	0.019	0.00029	-3.53
0.032	-0.00023	14.89	0.024	0.00033	-4.95
0.050	-0.00029	17.04	0.054	0.00049	-10.35
0.080	-0.00037	19.69	0.065	0.00055	-12.44
0.125	-0.00046	22.84	0.078	0.00061	-14.73
0.144	-0.00050	24.39	0.087	0.00066	-16.40
0.159	-0.00054	25.70	0.078	0.00063	-15.55
0.177	-0.00058	27.23	0.053	0.00051	-11.36
0.179	-0.00060	27.83	0.033	0.00039	-7.14
0.159	-0.00057	26.67	0.010	0.00020	-0.38
0.141	-0.00054	25.72	0.001	0.00005	5.00
0.107	-0.00043	21.84	0.000	-0.00001	7.02
0.072	-0.00031	17.59	0.001	-0.00005	8.69
0.055	-0.00027	16.03	0.000	0.00002	5.95
0.044	-0.00024	15.15	0.002	0.00008	3.81
0.035	-0.00022	14.25	0.004	0.00013	2.33
0.021	-0.00016	12.32	0.046	0.00036	-5.87
0.016	-0.00015	11.74	0.095	0.00049	-10.56
0.012	-0.00013	11.16	0.131	0.00057	-13.63
0.039	-0.00022	14.46	0.413	0.00082	-22.43
0.128	-0.00037	19.59	0.697	0.00100	-28.80
0.278	-0.00051	24.62	0.893	0.00114	-33.83
0.381	-0.00061	28.28	0.939	0.00122	-36.63
0.470	-0.00072	32.17	0.933	0.00123	-37.00

update for EV, CV:

dZn		**SF249**		
LN Analysis		**dZn**		
Load		**Load Data, EV=866 lbs/day CV=0.741**		
Avg:	**866**	**Load Data-based LN**		
SD:	**642**	u	ln tCd Load	tCd Load
CV:	**0.74**	3	8.5	5063
Min:	**197.4**	0	6.55	696
Max:	**3,431**	-3	4.56	95.7
Median:	**722**			
		866	866	
		0.74	0.741	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.982, EV=877lbs/day CV=0.767; max r2=0.98**

r2 u,lnLoad:	0.982	u	lnLoad	Load		
slope, m:	1.470	3	8.59	5355		
intercept, b:	-9.622	0	6.55	696		
N:	37	-3	4.50	90.4		
E[Load]:	876.9	Parameter Estimates			0.982	0.982
SD[Load]:	673	from LN regression			876.9	877
CV[Load]:	0.77	update graph label			0.8	0.767
					max r2	

	dZn	N: 37				0.983
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
9-Sep-94	**197.4**	1	0.0168	-2.125	5.285	0.982
23-Jul-94	**252.5**	2	0.0436	-1.710	5.531	0.983
16-Aug-94	**280.4**	3	0.0705	-1.472	5.636	0.983
5-Oct-94	**293.9**	4	0.0973	-1.297	5.683	0.983
26-Jul-95	**333.4**	5	0.1242	-1.154	5.809	0.982
12-Jul-95	**361.8**	6	0.1510	-1.032	5.891	0.982
15-Aug-95	**378.3**	7	0.1779	-0.924	5.936	0.982
14-Sep-95	**406.4**	8	0.2047	-0.825	6.007	0.981
29-Oct-93	**410.9**	9	0.2315	-0.734	6.018	0.981
17-Feb-94	**415.2**	10	0.2584	-0.648	6.029	0.980
3-Oct-91	**420.0**	11	0.2852	-0.567	6.040	0.978
24-Jun-94	**460.1**	12	0.3121	-0.490	6.132	0.976
28-Jun-95	**479.5**	13	0.3389	-0.415	6.173	0.974
20-Dec-93	**483.3**	14	0.3658	-0.343	6.181	0.972
19-Jan-94	**493.4**	15	0.3926	-0.273	6.201	0.970
2-Dec-93	**534.6**	16	0.4195	-0.203	6.282	0.970
15-Nov-94	**584.3**	17	0.4463	-0.135	6.370	0.970
14-Dec-94	**645.9**	18	0.4732	-0.067	6.471	0.968
13-Jun-95	**721.6**	19	0.5000	0.000	6.581	0.965
8-Jun-94	**771.4**	20	0.5268	0.067	6.648	0.962
6-Nov-97	**774.7**	21	0.5537	0.135	6.652	0.959
20-May-94	**919.4**	22	0.5805	0.203	6.824	0.955
3-May-94	**924.6**	23	0.6074	0.273	6.829	0.961
6-Apr-94	**926.4**	24	0.6342	0.343	6.831	0.966
7-Mar-94	**969.5**	25	0.6611	0.415	6.877	0.968
25-Apr-95	**988.8**	26	0.6879	0.490	6.897	0.972
23-Mar-94	**990.7**	27	0.7148	0.567	6.898	0.974
14-May-91	**1027.3**	28	0.7416	0.648	6.935	0.973
23-May-95	**1050.3**	29	0.7685	0.734	6.957	0.969
8-Mar-95	**1090.5**	30	0.7953	0.825	6.994	0.962
9-Feb-95	**1285.5**	31	0.8221	0.924	7.159	0.955
13-Apr-95	**1508.9**	32	0.8490	1.032	7.319	0.943
11-Jan-95	**1512.3**	33	0.8758	1.154	7.321	0.964
12-May-98	**1513.0**	34	0.9027	1.297	7.322	
11-May-95	**2025.1**	35	0.9295	1.472	7.613	
18-Apr-94	**2194.6**	36	0.9564	1.710	7.694	
22-Mar-95	**3430.6**	37	0.9832	2.125	8.140	

update for EV, CV:

dZn		SF249	1,088	1090
LN Analysis		dZn	0.43	0.428

Concentration

Avg:	1,088
SD:	465
CV:	0.43
Min:	371
Max:	2,200
Median:	1,020

Conc. Data, EV=1090 ug/L CV=0.428

Data-based LN

u	ln[tCd]	[tCd]
3	8.1	3422
0	6.91	1000
-3	5.68	292

	0.968	0.968
u=mLn(Conc.)+b:	1109.8	1110
update for r2, EV, CV: r2=0.968, EV=1110 ug/L CV=0.521; max r2=0.98	0.521	0.521

r2 u,lnConc:	0.968	u	lnConc.	Conc.
slope, m:	2.040	3	8.36	4283
intercept, b:	-14.060	0	6.89	984
N:	37	-3	5.42	226
E[Conc]:	1109.8	Parameter Estimates		
SD[Conc]:	578	from LN regression		
CV[Conc]:	0.52	update graph label		

Date	dZn Concentration ug/L Ranked	N: 37 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.979 r2 forward
update and rank for new data						
12-May-98	371	1	0.0168	-2.125	5.916	0.968
14-May-91	372	2	0.0436	-1.710	5.919	0.964
23-May-95	432	3	0.0705	-1.472	6.068	0.963
11-May-95	476	4	0.0973	-1.297	6.165	0.961
13-Jun-95	529	5	0.1242	-1.154	6.271	0.961
20-May-94	548	6	0.1510	-1.032	6.306	0.960
3-May-94	569	7	0.1779	-0.924	6.344	0.961
18-Apr-94	599	8	0.2047	-0.825	6.395	0.968
28-Jun-95	743	9	0.2315	-0.734	6.611	0.979
8-Jun-94	812	10	0.2584	-0.648	6.700	0.978
25-Apr-95	849	11	0.2852	-0.567	6.744	0.976
23-Jul-94	857	12	0.3121	-0.490	6.753	0.975
12-Jul-95	858	13	0.3389	-0.415	6.755	0.972
13-Apr-95	871	14	0.3658	-0.343	6.770	0.970
6-Apr-94	874	15	0.3926	-0.273	6.773	0.968
24-Jun-94	883	16	0.4195	-0.203	6.783	0.969
8-Mar-95	997	17	0.4463	-0.135	6.905	0.974
9-Feb-95	1020	18	0.4732	-0.067	6.928	0.972
26-Jul-95	1020	19	0.5000	0.000	6.928	0.969
16-Aug-94	1040	20	0.5268	0.067	6.947	0.969
22-Mar-95	1160	21	0.5537	0.135	7.056	0.971
6-Nov-97	1190	22	0.5805	0.203	7.082	0.968
11-Jan-95	1200	23	0.6074	0.273	7.090	0.965
15-Aug-95	1210	24	0.6342	0.343	7.098	0.961
14-Sep-95	1300	25	0.6611	0.415	7.170	0.956
5-Oct-94	1320	26	0.6879	0.490	7.185	0.952
7-Mar-94	1370	27	0.7148	0.567	7.223	0.947
19-Jan-94	1380	28	0.7416	0.648	7.230	0.945
23-Mar-94	1400	29	0.7685	0.734	7.244	0.938
9-Sep-94	1430	30	0.7953	0.825	7.265	0.925
3-Oct-91	1510	31	0.8221	0.924	7.320	0.907
17-Feb-94	1540	32	0.8490	1.032	7.340	0.885
29-Oct-93	1570	33	0.8758	1.154	7.359	0.843
2-Dec-93	1660	34	0.9027	1.297	7.415	
20-Dec-93	1930	35	0.9295	1.472	7.565	
14-Dec-94	2160	36	0.9564	1.710	7.678	
15-Nov-94	2200	37	0.9832	2.125	7.696	

update for EV, CV:

dZn		**SF249**			207	207
LN Analysis		**dZn**			1.00	1
Discharge, Q		**Q Data, EV=207 cfs CV=1**				
Avg:	**207**	**Q Data-based LN**				
SD:	**208**	u	lnQ	Q		
CV:	**1.00**	3	7.5	1787		
Min:	**26**	0	4.98	146		
Max:	**791**	-3	2.48	12		
Median:	**121**					
					0.940	0.94
					219.4	219
	u=mLn(Q)+b:				1.34	1.34

update for r2, EV, CV: **r2=0.94, EV=219 cfs CV=1.3**

r2 u,lnQ:	0.940	u	lnQ	Q
slope, m:	0.987	3	7.92	2742
intercept, b:	-4.817	0	4.88	131
N: 37		-3	1.84	6
E[Q]:	219.4	Parameter Estimates		
SD[Q]:	293	from LN regression		
CV[Q]:	1.34	update graph label		

N: 37 — max r2 0.967

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
9-Sep-94	25.66	1	0.0168	-2.125	3.245	0.940
5-Oct-94	41.39	2	0.0436	-1.710	3.723	0.941
20-Dec-93	46.55	3	0.0705	-1.472	3.841	0.949
29-Oct-93	48.65	4	0.0973	-1.297	3.885	0.957
15-Nov-94	49.37	5	0.1242	-1.154	3.899	0.962
16-Aug-94	50.11	6	0.1510	-1.032	3.914	0.965
17-Feb-94	50.11	7	0.1779	-0.924	3.914	0.967
3-Oct-91	51.7	8	0.2047	-0.825	3.945	0.966
23-Jul-94	54.76	9	0.2315	-0.734	4.003	0.964
14-Dec-94	55.58	10	0.2584	-0.648	4.018	0.962
14-Sep-95	58.11	11	0.2852	-0.567	4.062	0.959
15-Aug-95	58.11	12	0.3121	-0.490	4.062	0.955
2-Dec-93	59.86	13	0.3389	-0.415	4.092	0.951
26-Jul-95	60.76	14	0.3658	-0.343	4.107	0.949
19-Jan-94	66.45	15	0.3926	-0.273	4.196	0.950
12-Jul-95	78.37	16	0.4195	-0.203	4.361	0.954
24-Jun-94	96.86	17	0.4463	-0.135	4.573	0.958
28-Jun-95	119.95	18	0.4732	-0.067	4.787	0.957
6-Nov-97	121	19	0.5000	0.000	4.796	0.952
7-Mar-94	131.53	20	0.5268	0.067	4.879	0.949
23-Mar-94	131.53	21	0.5537	0.135	4.879	0.946
8-Jun-94	176.59	22	0.5805	0.203	5.174	0.950
6-Apr-94	197.02	23	0.6074	0.273	5.283	0.944
8-Mar-95	203.3	24	0.6342	0.343	5.315	0.937
25-Apr-95	216.49	25	0.6611	0.415	5.378	0.928
9-Feb-95	234.25	26	0.6879	0.490	5.456	0.917
11-Jan-95	234.25	27	0.7148	0.567	5.456	0.903
13-Jun-95	253.54	28	0.7416	0.648	5.536	0.888
3-May-94	302.04	29	0.7685	0.734	5.711	0.872
20-May-94	311.85	30	0.7953	0.825	5.743	0.844
13-Apr-95	322	31	0.8221	0.924	5.775	0.812
23-May-95	451.89	32	0.8490	1.032	6.113	0.874
14-May-91	513.3	33	0.8758	1.154	6.241	0.842
22-Mar-95	549.7	34	0.9027	1.297	6.309	
18-Apr-94	680.99	35	0.9295	1.472	6.524	
12-May-98	758	36	0.9564	1.710	6.631	
11-May-95	790.77	37	0.9832	2.125	6.673	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.		see comment
Station:	SF249	**Date:** 19-Jun-00
Chemical:	tCd	**Analyst:** J.MacLachlan
Notes:		

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,626	207	7	6	0.00	0.00	0.00
SD:	440	208	2	4	1.00	1.00	1.00
CV:	0.01	1.00	0.35	0.75			
Min:	33,372	26	2	1.3	-0.87	-1.95	-1.06
Max:	35,927	791	14	19	2.81	2.75	2.84
Median:	34,612	121	7	5	-0.41	-0.06	-0.28

tCd SF249 : Concentration v. Discharge, Q — Q = mTime +b — LnQ = mTime +b

Conc. = mQ+b (r2=0.496)	update r2	0.50	0.496	r2:	0.039	0.035	
r2 Q,[COC]:	0.50	[tCd]	Q	m:	0.0927	0.00040	
slope, m:	-0.01	9	25.7	b:	-3003	-9.12	
intercept, b:	8.9	7	206.8				
N: 37		2	791				
LnConc. = mLn(Q)+b (r2=0.675)	update r2	0.68	0.675				
r2 lnQ,ln[COC]:	0.68	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.32	2.43	3.24	11	26		
intercept, b:	3.49	1.75	5.33	6	207		
N: 37		1.32	6.67	4	791		

N= 37

	Sampling Date	Q Discharge	tCd Concentration	tCd Load	Ln Q	Ln tCd Conc.	Ln tCd Load	tCd SF249 for graph 0 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	14-May-91	513.3	2.3	6.4	6.24	0.83	1.85	1.48	-1.95	0.08
MFG	3-Oct-91	51.7	9	2.5	3.95	2.20	0.92	-0.75	0.74	-0.78
IDEQ	29-Oct-93	48.65	8.2	2.1	3.88	2.10	0.76	-0.76	0.42	-0.86
IDEQ	2-Dec-93	59.86	8.4	2.7	4.09	2.13	1.00	-0.71	0.50	-0.74
IDEQ	20-Dec-93	46.55	11.5	2.9	3.84	2.44	1.06	-0.77	1.74	-0.70
IDEQ	19-Jan-94	66.45	9.4	3.4	4.20	2.24	1.21	-0.68	0.90	-0.59
IDEQ	17-Feb-94	50.11	8.8	2.4	3.91	2.17	0.86	-0.75	0.66	-0.81
IDEQ	7-Mar-94	131.53	7	5.0	4.88	1.95	1.60	-0.36	-0.06	-0.23
IDEQ	23-Mar-94	131.53	8	5.7	4.88	2.08	1.73	-0.36	0.34	-0.08
IDEQ	6-Apr-94	197.02	6	6.4	5.28	1.79	1.85	-0.05	-0.46	0.08
IDEQ	18-Apr-94	680.99	5.1	18.7	6.52	1.63	2.93	2.28	-0.82	2.84
IDEQ	3-May-94	302.04	4.2	6.8	5.71	1.44	1.92	0.46	-1.18	0.19
IDEQ	20-May-94	311.85	4.2	7.0	5.74	1.44	1.95	0.51	-1.18	0.23
IDEQ	8-Jun-94	176.59	5	4.8	5.17	1.61	1.56	-0.15	-0.86	-0.28
IDEQ	24-Jun-94	96.86	6.7	3.5	4.57	1.90	1.25	-0.53	-0.18	-0.56
IDEQ	23-Jul-94	54.76	6.9	2.0	4.00	1.93	0.71	-0.73	-0.10	-0.89
IDEQ	16-Aug-94	50.11	8.6	2.3	3.91	2.15	0.84	-0.75	0.58	-0.82
IDEQ	9-Sep-94	25.66	9.2	1.3	3.24	2.22	0.24	-0.87	0.82	-1.06
IDEQ	5-Oct-94	41.39	9.2	2.0	3.72	2.22	0.72	-0.80	0.82	-0.88
IDEQ	15-Nov-94	49.37	13	3.5	3.90	2.56	1.24	-0.76	2.35	-0.57
IDEQ	14-Dec-94	55.58	14	4.2	4.02	2.64	1.43	-0.73	2.75	-0.41
IDEQ	11-Jan-95	234.25	7.5	9.5	5.46	2.01	2.25	0.13	0.14	0.77
IDEQ	9-Feb-95	234.25	6.6	8.3	5.46	1.89	2.12	0.13	-0.22	0.52
IDEQ	8-Mar-95	203.3	6	6.6	5.31	1.79	1.88	-0.02	-0.46	0.13
IDEQ	22-Mar-95	549.7	5.9	17.4	6.31	1.77	2.86	1.65	-0.50	2.56
IDEQ	13-Apr-95	322	6.2	10.7	5.77	1.82	2.37	0.55	-0.38	1.06
IDEQ	25-Apr-95	216.49	7	8.2	5.38	1.95	2.10	0.05	-0.06	0.48
IDEQ	11-May-95	790.77	4.2	17.9	6.67	1.44	2.88	2.81	-1.18	2.66
IDEQ	23-May-95	451.89	4.3	10.5	6.11	1.46	2.35	1.18	-1.14	1.00
IDEQ	13-Jun-95	253.54	4.8	6.5	5.54	1.57	1.88	0.22	-0.94	0.12
IDEQ	28-Jun-95	119.95	5.6	3.6	4.79	1.72	1.28	-0.42	-0.62	-0.53
IDEQ	12-Jul-95	78.37	6.3	2.7	4.36	1.84	0.98	-0.62	-0.34	-0.75
IDEQ	26-Jul-95	60.76	7.7	2.5	4.11	2.04	0.92	-0.70	0.22	-0.78
IDEQ	15-Aug-95	58.11	8.3	2.6	4.06	2.12	0.95	-0.72	0.46	-0.76
IDEQ	14-Sep-95	58.11	9.1	2.8	4.06	2.21	1.05	-0.72	0.78	-0.71
URS	6-Nov-97	121	7.5	4.9	4.80	2.01	1.59	-0.41	0.14	-0.25
URS	12-May-98	758	2.9	11.8	6.63	1.06	2.47	2.65	-1.71	1.30

tCd

Concentration over time analysis

	tCd	SF249		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.003**	**-0.00005**
	Time	**Ln[COC]**	**[COC]**		
first:	14-May-91	1.96	7		
mid:	5-Oct-94	1.90	7		
last:	12-May-98	1.84	6		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

Load over time analysis

	tCd	SF249			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.054**	**0.00036**
	Time	**LnLoad**	**Load**		
first:	14-May-91	1.11	3		
mid:	5-Oct-94	1.55	5		
last:	12-May-98	2.02	8		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

	max r2:	0.588		max r2:	0.881	
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.003	-0.00005	3.55	0.054	0.00036	-10.79
	0.133	-0.00031	12.69	0.093	0.00053	-16.78
	0.120	-0.00034	13.58	0.070	0.00052	-16.54
	0.113	-0.00033	13.44	0.054	0.00046	-14.33
	0.104	-0.00032	13.15	0.043	0.00041	-12.79
	0.080	-0.00028	11.60	0.034	0.00037	-11.29
	0.066	-0.00025	10.67	0.028	0.00034	-10.24
	0.054	-0.00023	9.91	0.018	0.00027	-7.74
	0.053	-0.00023	9.95	0.017	0.00027	-7.87
	0.045	-0.00022	9.45	0.019	0.00029	-8.54
	0.051	-0.00024	10.08	0.023	0.00033	-9.76
	0.068	-0.00028	11.50	0.059	0.00050	-15.89
	0.110	-0.00035	13.99	0.072	0.00057	-18.15
	0.170	-0.00043	16.77	0.089	0.00064	-20.80
	0.222	-0.00049	19.01	0.093	0.00067	-21.78
	0.237	-0.00052	20.01	0.085	0.00066	-21.25
	0.248	-0.00054	20.89	0.062	0.00055	-17.70
	0.234	-0.00054	20.61	0.043	0.00046	-14.35
	0.214	-0.00051	19.86	0.016	0.00026	-7.18
	0.192	-0.00049	18.94	0.003	0.00010	-1.78
	0.158	-0.00040	15.98	0.000	0.00002	1.16
	0.126	-0.00030	12.26	0.000	-0.00004	3.36
	0.109	-0.00028	11.48	0.000	0.00001	1.40
	0.101	-0.00027	11.26	0.001	0.00005	-0.07
	0.103	-0.00028	11.49	0.001	0.00006	-0.43
	0.106	-0.00029	11.82	0.016	0.00023	-6.37
	0.104	-0.00029	11.89	0.037	0.00034	-10.41
	0.089	-0.00027	11.18	0.059	0.00043	-13.62
	0.151	-0.00034	13.81	0.231	0.00070	-23.07
	0.257	-0.00043	17.09	0.530	0.00093	-31.29
	0.386	-0.00053	20.45	0.821	0.00112	-38.00
	0.495	-0.00062	23.66	0.881	0.00121	-41.24
	0.588	-0.00072	27.17	0.873	0.00123	-42.00

update for EV, CV:

tCd		**SF249**		
LN Analysis		**tCd**		
Load		**Load Data, EV=6 lbs/day CV=0.745**		
Avg:	**6**	**Load Data-based LN**		
SD:	**4**	u	ln tCd Load	tCd Load
CV:	**0.75**	3	3.6	35
Min:	**1.3**	0	1.57	5
Max:	**19**	-3	-0.42	0.7
Median:	**5**			
		6	6	
		0.75	0.745	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.967, EV=6.1lbs/day CV=0.811; max r2=0.98**

r2 u,lnLoad:	0.967	u	lnLoad	Load	
slope, m:	1.407	3	3.69	40	
intercept, b:	-2.189	0	1.56	5	
N:	37	-3	-0.58	0.6	
E[Load]:	6.1	Parameter Estimates			0.967 0.967
SD[Load]:	5	from LN regression			6.1 6.1
CV[Load]:	0.81	update graph label			0.8 0.811
					max r2
	tCd	N: 37			0.981

Date	Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
9-Sep-94	1.3	1	0.0168	-2.125	0.239	0.967
23-Jul-94	2.0	2	0.0436	-1.710	0.709	0.964
5-Oct-94	2.0	3	0.0705	-1.472	0.717	0.973
29-Oct-93	2.1	4	0.0973	-1.297	0.764	0.976
16-Aug-94	2.3	5	0.1242	-1.154	0.841	0.978
17-Feb-94	2.4	6	0.1510	-1.032	0.864	0.980
3-Oct-91	2.5	7	0.1779	-0.924	0.918	0.980
26-Jul-95	2.5	8	0.2047	-0.825	0.923	0.981
15-Aug-95	2.6	9	0.2315	-0.734	0.954	0.980
12-Jul-95	2.7	10	0.2584	-0.648	0.977	0.979
2-Dec-93	2.7	11	0.2852	-0.567	0.995	0.977
14-Sep-95	2.8	12	0.3121	-0.490	1.046	0.975
20-Dec-93	2.9	13	0.3389	-0.415	1.058	0.973
19-Jan-94	3.4	14	0.3658	-0.343	1.212	0.972
15-Nov-94	3.5	15	0.3926	-0.273	1.239	0.970
24-Jun-94	3.5	16	0.4195	-0.203	1.250	0.967
28-Jun-95	3.6	17	0.4463	-0.135	1.285	0.966
14-Dec-94	4.2	18	0.4732	-0.067	1.432	0.967
8-Jun-94	4.8	19	0.5000	0.000	1.558	0.965
6-Nov-97	4.9	20	0.5268	0.067	1.586	0.961
7-Mar-94	5.0	21	0.5537	0.135	1.600	0.956
23-Mar-94	5.7	22	0.5805	0.203	1.734	0.952
14-May-91	6.4	23	0.6074	0.273	1.849	0.947
6-Apr-94	6.4	24	0.6342	0.343	1.850	0.946
13-Jun-95	6.5	25	0.6611	0.415	1.879	0.941
8-Mar-95	6.6	26	0.6879	0.490	1.881	0.934
3-May-94	6.8	27	0.7148	0.567	1.921	0.923
20-May-94	7.0	28	0.7416	0.648	1.953	0.909
25-Apr-95	8.2	29	0.7685	0.734	2.098	0.894
9-Feb-95	8.3	30	0.7953	0.825	2.118	0.871
11-Jan-95	9.5	31	0.8221	0.924	2.246	0.839
23-May-95	10.5	32	0.8490	1.032	2.347	0.789
13-Apr-95	10.7	33	0.8758	1.154	2.374	0.713
12-May-98	11.8	34	0.9027	1.297	2.470	
22-Mar-95	17.4	35	0.9295	1.472	2.859	
11-May-95	17.9	36	0.9564	1.710	2.883	
18-Apr-94	18.7	37	0.9832	2.125	2.928	

		update for EV, CV:			
tCd		SF249		7	7.15
LN Analysis		tCd		0.35	0.349
Concentration		Conc. Data, EV=7.15 ug/L CV=0.349			
Avg:	7	Data-based LN			
SD:	2	u	ln[tCd]	[tCd]	
CV:	0.35	3	2.9	19	
Min:	2	0	1.91	7	
Max:	14	-3	0.89	2	
Median:	7				

					0.958	0.958
u=mLn{Conc.}+b:					7.2	7.25
update for r2, EV, CV:	r2=0.958, EV=7.25 ug/L CV=0.413; max r2=0.98				0.413	0.413
	r2 u,lnConc:	0.958	u	lnConc.	Conc.	
	slope, m:	2.521	3	3.09	22	
	intercept, b:	-4.796	0	1.90	7	
	N:	37	-3	0.71	2	
	E[Conc]:	7.2	Parameter Estimates			
	SD[Conc]:	3	from LN regression			
	CV[Conc]:	0.41	update graph label			

	tCd	N: 37				max r2 0.977
	Concentration	i	i-3/8 / N+1/4	u	La	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
14-May-91	2.3	1	0.0168	-2.125	0.833	0.958
12-May-98	2.9	2	0.0436	-1.710	1.065	0.966
3-May-94	4.2	3	0.0705	-1.472	1.435	0.977
11-May-95	4.2	4	0.0973	-1.297	1.435	0.975
20-May-94	4.2	5	0.1242	-1.154	1.435	0.972
23-May-95	4.3	6	0.1510	-1.032	1.459	0.972
13-Jun-95	4.8	7	0.1779	-0.924	1.569	0.976
8-Jun-94	5	8	0.2047	-0.825	1.609	0.975
18-Apr-94	5.1	9	0.2315	-0.734	1.629	0.974
28-Jun-95	5.6	10	0.2584	-0.648	1.723	0.974
22-Mar-95	5.9	11	0.2852	-0.567	1.775	0.972
6-Apr-94	6	12	0.3121	-0.490	1.792	0.970
8-Mar-95	6	13	0.3389	-0.415	1.792	0.967
13-Apr-95	6.2	14	0.3658	-0.343	1.825	0.965
12-Jul-95	6.3	15	0.3926	-0.273	1.841	0.961
9-Feb-95	6.6	16	0.4195	-0.203	1.887	0.958
24-Jun-94	6.7	17	0.4463	-0.135	1.902	0.954
23-Jul-94	6.9	18	0.4732	-0.067	1.932	0.949
7-Mar-94	7	19	0.5000	0.000	1.946	0.945
25-Apr-95	7	20	0.5268	0.067	1.946	0.939
6-Nov-97	7.5	21	0.5537	0.135	2.015	0.933
11-Jan-95	7.5	22	0.5805	0.203	2.015	0.928
26-Jul-95	7.7	23	0.6074	0.273	2.041	0.921
23-Mar-94	8	24	0.6342	0.343	2.079	0.914
29-Oct-93	8.2	25	0.6611	0.415	2.104	0.910
15-Aug-95	8.3	26	0.6879	0.490	2.116	0.909
2-Dec-93	8.4	27	0.7148	0.567	2.128	0.908
16-Aug-94	8.6	28	0.7416	0.648	2.152	0.904
17-Feb-94	8.8	29	0.7685	0.734	2.175	0.902
3-Oct-91	9	30	0.7953	0.825	2.197	0.904
14-Sep-95	9.1	31	0.8221	0.924	2.208	0.910
5-Oct-94	9.2	32	0.8490	1.032	2.219	0.910
9-Sep-94	9.2	33	0.8758	1.154	2.219	0.896
19-Jan-94	9.4	34	0.9027	1.297	2.241	
20-Dec-93	11.5	35	0.9295	1.472	2.442	
15-Nov-94	13	36	0.9564	1.710	2.565	
14-Dec-94	14	37	0.9832	2.125	2.639	

update for EV, CV:

tCd		**SF249**			207	207
LN Analysis		**tCd**			1.00	1
Discharge, Q		**Q Data, EV=207 cfs CV=1**				
Avg:	207	**Q Data-based LN**				
SD:	208	u	lnQ	Q		
CV:	1.00	3	7.5	1787		
Min:	26	0	4.98	146		
Max:	791	-3	2.48	12		
Median:	121					

					0.940	0.94
					219.4	219
u=mLn(Q)+b:					1.34	1.34

update for r2, EV, CV: **r2=0.94, EV=219 cfs CV=1.34; max r2=0.97**

r2 u,lnQ:	0.940	u	lnQ	Q
slope, m:	0.987	3	7.92	2742
intercept, b:	-4.817	0	4.88	131
N:	37	-3	1.84	6
E[Q]:	219.4	Parameter Estimates		
SD[Q]:	293	from LN regression		
CV[Q]:	1.34	update graph label		

N: 37

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.967 r2 forward
update and rank for new data						
9-Sep-94	25.66	1	0.0168	-2.125	3.245	0.940
5-Oct-94	41.39	2	0.0436	-1.710	3.723	0.941
20-Dec-93	46.55	3	0.0705	-1.472	3.841	0.949
29-Oct-93	48.65	4	0.0973	-1.297	3.885	0.957
15-Nov-94	49.37	5	0.1242	-1.154	3.899	0.962
16-Aug-94	50.11	6	0.1510	-1.032	3.914	0.965
17-Feb-94	50.11	7	0.1779	-0.924	3.914	0.967
3-Oct-91	51.7	8	0.2047	-0.825	3.945	0.966
23-Jul-94	54.76	9	0.2315	-0.734	4.003	0.964
14-Dec-94	55.58	10	0.2584	-0.648	4.018	0.962
14-Sep-95	58.11	11	0.2852	-0.567	4.062	0.959
15-Aug-95	58.11	12	0.3121	-0.490	4.062	0.955
2-Dec-93	59.86	13	0.3389	-0.415	4.092	0.951
26-Jul-95	60.76	14	0.3658	-0.343	4.107	0.949
19-Jan-94	66.45	15	0.3926	-0.273	4.196	0.950
12-Jul-95	78.37	16	0.4195	-0.203	4.361	0.954
24-Jun-94	96.86	17	0.4463	-0.135	4.573	0.958
28-Jun-95	119.95	18	0.4732	-0.067	4.787	0.957
6-Nov-97	121	19	0.5000	0.000	4.796	0.952
7-Mar-94	131.53	20	0.5268	0.067	4.879	0.949
23-Mar-94	131.53	21	0.5537	0.135	4.879	0.946
8-Jun-94	176.59	22	0.5805	0.203	5.174	0.950
6-Apr-94	197.02	23	0.6074	0.273	5.283	0.944
8-Mar-95	203.3	24	0.6342	0.343	5.315	0.937
25-Apr-95	216.49	25	0.6611	0.415	5.378	0.928
9-Feb-95	234.25	26	0.6879	0.490	5.456	0.917
11-Jan-95	234.25	27	0.7148	0.567	5.456	0.903
13-Jun-95	253.54	28	0.7416	0.648	5.536	0.888
3-May-94	302.04	29	0.7685	0.734	5.711	0.872
20-May-94	311.85	30	0.7953	0.825	5.743	0.844
13-Apr-95	322	31	0.8221	0.924	5.775	0.812
23-May-95	451.89	32	0.8490	1.032	6.113	0.874
14-May-91	513.3	33	0.8758	1.154	6.241	0.842
22-Mar-95	549.7	34	0.9027	1.297	6.309	
18-Apr-94	680.99	35	0.9295	1.472	6.524	
12-May-98	758	36	0.9564	1.710	6.631	
11-May-95	790.77	37	0.9832	2.125	6.673	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SF249 **Date:** 19-Jun-00
Chemical: tPb **Analyst:** JMacLachlan
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,626	207	27	45	0.00	0.00	0.00
SD:	440	208	27	110	1.00	1.00	1.00
CV:	0.01	1.00	1.01	2.43			
Min:	33,372	26	13	2.2	-0.87	-0.52	-0.39
Max:	35,927	791	178	652	2.81	5.50	5.53
Median:	34,612	121	19	16	-0.41	-0.30	-0.27

tPb SF249 : Concentration v. Discharge, Q

					Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.237)	update r2	0.24	0.237		r2:	0.039	0.035
r2 Q,[COC]:	0.24	[tCd]	Q		m:	0.0927	0.00040
slope, m:	0.1	16	25.7		b:	-3003	-9.12
intercept, b:	13.9	27	206.8				
N: 37		65	791				
LnConc. = mLn{Q}+b (r2=0.197)	update r2	0.20	0.197				
r2 lnQ,ln[COC]:	0.20	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	0.23	2.75	3.24	16	26		
intercept, b:	2.01	3.22	5.33	25	207		
N: 37		3.53	6.67	34	791		

N= 37

update for new data	Sampling Date	Q Discharge cfs	tPb Concentration ug/L	tPb Load lbs/day	Ln Q	Ln tPb Conc.	Ln tPb Load	for graph 0 tPb SF249 Standardized Values = (x - Avg)/SD Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	14-May-91	513.3	31	85.6	6.24	3.43	4.45	1.48	0.14	0.37
MFG	3-Oct-91	51.7	17	4.7	3.95	2.83	1.55	-0.75	-0.37	-0.37
IDEQ	29-Oct-93	48.65	20	5.2	3.88	3.00	1.66	-0.76	-0.26	-0.36
IDEQ	2-Dec-93	59.86	30	9.7	4.09	3.40	2.27	-0.71	0.10	-0.32
IDEQ	20-Dec-93	46.55	22	5.5	3.84	3.09	1.71	-0.77	-0.19	-0.36
IDEQ	19-Jan-94	66.45	19	6.8	4.20	2.94	1.92	-0.68	-0.30	-0.35
IDEQ	17-Feb-94	50.11	19	5.1	3.91	2.94	1.63	-0.75	-0.30	-0.37
IDEQ	7-Mar-94	131.53	22	15.6	4.88	3.09	2.75	-0.36	-0.19	-0.27
IDEQ	23-Mar-94	131.53	22	15.6	4.88	3.09	2.75	-0.36	-0.19	-0.27
IDEQ	6-Apr-94	197.02	24	25.4	5.28	3.18	3.24	-0.05	-0.12	-0.18
IDEQ	18-Apr-94	680.99	178	652.1	6.52	5.18	6.48	2.28	5.50	5.53
IDEQ	3-May-94	302.04	13	21.1	5.71	2.56	3.05	0.46	-0.52	-0.22
IDEQ	20-May-94	311.85	18	30.2	5.74	2.89	3.41	0.51	-0.34	-0.14
IDEQ	8-Jun-94	176.59	19	18.1	5.17	2.94	2.89	-0.15	-0.30	-0.25
IDEQ	24-Jun-94	96.86	18	9.4	4.57	2.89	2.24	-0.53	-0.34	-0.33
IDEQ	23-Jul-94	54.76	20	5.9	4.00	3.00	1.77	-0.73	-0.26	-0.36
IDEQ	16-Aug-94	50.11	22	5.9	3.91	3.09	1.78	-0.75	-0.19	-0.36
IDEQ	9-Sep-94	25.66	16	2.2	3.24	2.77	0.79	-0.87	-0.41	-0.39
IDEQ	5-Oct-94	41.39	17	3.8	3.72	2.83	1.33	-0.80	-0.37	-0.38
IDEQ	15-Nov-94	49.37	23	6.1	3.90	3.14	1.81	-0.76	-0.15	-0.36
IDEQ	14-Dec-94	55.58	16	4.8	4.02	2.77	1.57	-0.73	-0.41	-0.37
IDEQ	11-Jan-95	234.25	45	56.7	5.46	3.81	4.04	0.13	0.65	0.10
IDEQ	9-Feb-95	234.25	16	20.2	5.46	2.77	3.00	0.13	-0.41	-0.23
IDEQ	8-Mar-95	203.3	16	17.5	5.31	2.77	2.86	-0.02	-0.41	-0.25
IDEQ	22-Mar-95	549.7	20	59.1	6.31	3.00	4.08	1.65	-0.26	0.13
IDEQ	13-Apr-95	322	22	38.1	5.77	3.09	3.64	0.55	-0.19	-0.06
IDEQ	25-Apr-95	216.49	19	22.1	5.38	2.94	3.10	0.05	-0.30	-0.21
IDEQ	11-May-95	790.77	56	238.2	6.67	4.03	5.47	2.81	1.05	1.76
IDEQ	23-May-95	451.89	19	46.2	6.11	2.94	3.83	1.18	-0.30	0.01
IDEQ	13-Jun-95	253.54	68	92.8	5.54	4.22	4.53	0.22	1.49	0.43
IDEQ	28-Jun-95	119.95	18	11.6	4.79	2.89	2.45	-0.42	-0.34	-0.31
IDEQ	12-Jul-95	78.37	15	6.3	4.36	2.71	1.84	-0.62	-0.45	-0.35
IDEQ	26-Jul-95	60.76	18	5.9	4.11	2.89	1.77	-0.70	-0.34	-0.36
IDEQ	15-Aug-95	58.11	19	5.9	4.06	2.94	1.78	-0.72	-0.30	-0.36
IDEQ	14-Sep-95	58.11	18	5.6	4.06	2.89	1.73	-0.72	-0.34	-0.36
URS	6-Nov-97	121	30.8	20.1	4.80	3.43	3.00	-0.41	0.13	-0.23
URS	12-May-98	758	21.4	87.3	6.63	3.06	4.47	2.65	-0.21	0.38

tPb

Concentration over time analysis

				r2	Slope, m
	tPb	SF249		Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.00001	0.000003
	Time	Ln[COC]	[COC]		
first:	14-May-91	3.12	23		
mid:	5-Oct-94	3.12	23		
last:	12-May-98	3.12	23		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

Load over time analysis

	tPb	SF249		Load over time	
	LnLoad=mTime+b All data r2, m:			0.021	0.00041
	Time	LnLoad	Load		
first:	14-May-91	2.26	10		
mid:	5-Oct-94	2.77	16		
last:	12-May-98	3.30	27		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

max r2:	0.588		max r2:	0.903	
Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.000	0.00000	3.03	0.021	0.00041	-11.32
0.004	0.00008	0.46	0.086	0.00092	-29.01
0.000	0.00002	2.33	0.062	0.00088	-27.79
0.000	0.00001	2.77	0.050	0.00080	-25.00
0.001	0.00004	1.71	0.046	0.00078	-24.23
0.001	0.00004	1.74	0.035	0.00069	-21.15
0.000	0.00002	2.35	0.028	0.00062	-18.57
0.000	0.00000	2.99	0.018	0.00051	-14.66
0.000	0.00000	3.13	0.018	0.00051	-14.69
0.000	0.00000	3.28	0.017	0.00051	-14.70
0.000	0.00000	3.09	0.020	0.00057	-16.75
0.050	0.00026	-6.00	0.092	0.00104	-33.39
0.032	0.00021	-4.18	0.103	0.00112	-36.31
0.027	0.00019	-3.67	0.126	0.00126	-41.24
0.024	0.00018	-3.34	0.136	0.00134	-44.13
0.018	0.00017	-2.67	0.130	0.00134	-43.93
0.016	0.00016	-2.46	0.112	0.00126	-41.05
0.017	0.00017	-2.71	0.095	0.00116	-37.68
0.009	0.00012	-1.21	0.063	0.00089	-28.26
0.004	0.00009	0.15	0.038	0.00068	-20.57
0.005	0.00009	-0.02	0.023	0.00051	-14.84
0.001	0.00004	1.76	0.008	0.00030	-7.14
0.012	0.00014	-1.83	0.017	0.00043	-11.91
0.006	0.00010	-0.23	0.016	0.00042	-11.57
0.001	0.00005	1.55	0.013	0.00039	-10.37
0.000	0.00002	2.39	0.026	0.00054	-15.80
0.000	0.00001	2.83	0.036	0.00064	-19.47
0.001	-0.00003	4.29	0.038	0.00067	-20.50
0.014	0.00013	-1.41	0.172	0.00117	-38.30
0.008	0.00010	-0.37	0.283	0.00146	-48.76
0.588	0.00038	-10.46	0.824	0.00203	-68.91
0.581	0.00039	-10.79	0.903	0.00222	-75.69
0.537	0.00033	-8.66	0.901	0.00228	-77.83

update for EV, CV:

tPb		**SF249**		
LN Analysis		**tPb**		
Load		**Load Data, EV=45.2 lbs/day CV=2.43**		
Avg:	**45**	**Load Data-based LN**		
SD:	**110**	u	ln tCd Load	tCd Load
CV:	**2.43**	3	7.0	1112
Min:	**2.2**	0	2.85	17
Max:	**652**	-3	-1.32	0.3
Median:	**16**			
		45	45.2	
		2.43	2.43	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.918, EV=39.4lbs/day CV=2.25; max r2=0.98**

r2 u,lnLoad:	0.918	u	lnLoad	Load			
slope, m:	0.745	3	6.80	898			
intercept, b:	-2.067	0	2.77	16			
N:	37	-3	-1.25	0.3			
E[Load]:	39.4	Parameter Estimates				0.918	0.918
SD[Load]:	89	from LN regression				39.4	39.4
CV[Load]:	2.25	update graph label				2.2	2.25
						max r2	
	tPb	**N: 37**				0.978	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**	
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward	
	Ranked						

update and rank for new data

9-Sep-94	**2.2**	1	0.0168	-2.125	0.792	0.918
5-Oct-94	**3.8**	2	0.0436	-1.710	1.331	0.921
3-Oct-91	**4.7**	3	0.0705	-1.472	1.554	0.930
14-Dec-94	**4.8**	4	0.0973	-1.297	1.565	0.942
17-Feb-94	**5.1**	5	0.1242	-1.154	1.634	0.951
29-Oct-93	**5.2**	6	0.1510	-1.032	1.655	0.958
20-Dec-93	**5.5**	7	0.1779	-0.924	1.707	0.964
14-Sep-95	**5.6**	8	0.2047	-0.825	1.728	0.970
26-Jul-95	**5.9**	9	0.2315	-0.734	1.772	0.973
23-Jul-94	**5.9**	10	0.2584	-0.648	1.774	0.976
16-Aug-94	**5.9**	11	0.2852	-0.567	1.780	0.978
15-Aug-95	**5.9**	12	0.3121	-0.490	1.782	0.978
15-Nov-94	**6.1**	13	0.3389	-0.415	1.810	0.977
12-Jul-95	**6.3**	14	0.3658	-0.343	1.844	0.975
19-Jan-94	**6.8**	15	0.3926	-0.273	1.916	0.972
24-Jun-94	**9.4**	16	0.4195	-0.203	2.239	0.970
2-Dec-93	**9.7**	17	0.4463	-0.135	2.268	0.968
28-Jun-95	**11.6**	18	0.4732	-0.067	2.452	0.965
7-Mar-94	**15.6**	19	0.5000	0.000	2.745	0.962
23-Mar-94	**15.6**	20	0.5268	0.067	2.745	0.965
8-Mar-95	**17.5**	21	0.5537	0.135	2.862	0.966
8-Jun-94	**18.1**	22	0.5805	0.203	2.893	0.968
6-Nov-97	**20.1**	23	0.6074	0.273	2.998	0.969
9-Feb-95	**20.2**	24	0.6342	0.343	3.004	0.971
3-May-94	**21.1**	25	0.6611	0.415	3.050	0.971
25-Apr-95	**22.1**	26	0.6879	0.490	3.097	0.968
6-Apr-94	**25.4**	27	0.7148	0.567	3.236	0.963
20-May-94	**30.2**	28	0.7416	0.648	3.408	0.956
13-Apr-95	**38.1**	29	0.7685	0.734	3.641	0.948
23-May-95	**46.2**	30	0.7953	0.825	3.833	0.941
11-Jan-95	**56.7**	31	0.8221	0.924	4.038	0.936
22-Mar-95	**59.1**	32	0.8490	1.032	4.080	0.940
14-May-91	**85.6**	33	0.8758	1.154	4.450	0.930
12-May-98	**87.3**	34	0.9027	1.297	4.469	
13-Jun-95	**92.8**	35	0.9295	1.472	4.530	
11-May-95	**238.2**	36	0.9564	1.710	5.473	
18-Apr-94	**652.1**	37	0.9832	2.125	6.480	

update for EV, CV:

tPb		SF249	27	27.2
LN Analysis		tPb	1.01	1.01

Concentration

		Conc. Data, EV=27.2 ug/L CV=1.01		
Avg:	27	Data-based LN		
SD:	27	u	ln[tCd]	[tCd]
CV:	1.01	3	5.5	236
Min:	13	0	2.95	19
Max:	178	-3	0.44	2
Median:	19			

				0.687	0.687
u=mLn(Conc.)+b:				27.2	27.2
update for r2, EV, CV:	r2=0.687, EV=27.2 ug/L CV=0.666; max r2=0.97			0.666	0.666
	r2 u,lnConc:	0.687	u	lnConc.	Conc.
	slope, m:	1.651	3	4.94	139
	intercept, b:	-5.153	0	3.12	23
	N:	37	-3	1.30	4
	E[Conc]:	27.2	Parameter Estimates		
	SD[Conc]:	18	from LN regression		
	CV[Conc]:	0.67	update graph label		

	tPb	N: 37				max r2 0.970
	Concentration	i	i-3/8 / N+1/4	u	La	r2
Date	ug/L Ranked	rank	plotting point	y-axis	x-axis	forward
update and rank for new data						
3-May-94	13	1	0.0168	-2.125	2.565	0.687
12-Jul-95	15	2	0.0436	-1.710	2.708	0.690
8-Mar-95	16	3	0.0705	-1.472	2.773	0.701
9-Feb-95	16	4	0.0973	-1.297	2.773	0.714
9-Sep-94	16	5	0.1242	-1.154	2.773	0.723
14-Dec-94	16	6	0.1510	-1.032	2.773	0.730
3-Oct-91	17	7	0.1779	-0.924	2.833	0.734
5-Oct-94	17	8	0.2047	-0.825	2.833	0.743
14-Sep-95	18	9	0.2315	-0.734	2.890	0.751
20-May-94	18	10	0.2584	-0.648	2.890	0.763
24-Jun-94	18	11	0.2852	-0.567	2.890	0.775
26-Jul-95	18	12	0.3121	-0.490	2.890	0.785
28-Jun-95	18	13	0.3389	-0.415	2.890	0.794
8-Jun-94	19	14	0.3658	-0.343	2.944	0.802
15-Aug-95	19	15	0.3926	-0.273	2.944	0.815
17-Feb-94	19	16	0.4195	-0.203	2.944	0.827
19-Jan-94	19	17	0.4463	-0.135	2.944	0.838
23-May-95	19	18	0.4732	-0.067	2.944	0.848
25-Apr-95	19	19	0.5000	0.000	2.944	0.857
22-Mar-95	20	20	0.5268	0.067	2.996	0.864
23-Jul-94	20	21	0.5537	0.135	2.996	0.875
29-Oct-93	20	22	0.5805	0.203	2.996	0.885
12-May-98	21.4	23	0.6074	0.273	3.063	0.892
7-Mar-94	22	24	0.6342	0.343	3.091	0.906
13-Apr-95	22	25	0.6611	0.415	3.091	0.923
16-Aug-94	22	26	0.6879	0.490	3.091	0.938
20-Dec-93	22	27	0.7148	0.567	3.091	0.950
23-Mar-94	22	28	0.7416	0.648	3.091	0.958
15-Nov-94	23	29	0.7685	0.734	3.135	0.961
6-Apr-94	24	30	0.7953	0.825	3.178	0.961
2-Dec-93	30	31	0.8221	0.924	3.401	0.955
6-Nov-97	30.8	32	0.8490	1.032	3.428	0.968
14-May-91	31	33	0.8758	1.154	3.434	0.970
11-Jan-95	45	34	0.9027	1.297	3.807	
11-May-95	56	35	0.9295	1.472	4.025	
13-Jun-95	68	36	0.9564	1.710	4.220	
18-Apr-94	178	37	0.9832	2.125	5.182	

update for EV, CV:

tPb		*SF249*			207	207
LN Analysis		**tPb**			1.00	1
Discharge, Q		**Q Data, EV=207 cfs CV=1**				
Avg:	**207**	**Q Data-based LN**				
SD:	**208**	u	lnQ	Q		
CV:	**1.00**	3	7.5	1787		
Min:	**26**	0	4.98	146		
Max:	**791**	-3	2.48	12		
Median:	**121**					
					0.940	0.94
					219.4	219
	u=mLn(Q)+b:				1.34	1.34

update for r2, EV, CV: **r2=0.94, EV=219 cfs CV=1.34; max r2=0.97**

r2 u,lnQ:	0.940	u	lnQ	Q
slope, m:	0.987	3	7.92	2742
intercept, b:	-4.817	0	4.88	131
N:	37	-3	1.84	6
E[Q]:	219.4	Parameter Estimates		
SD[Q]:	293	from LN regression		
CV[Q]:	1.34	update graph label		

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.967 r2 forward
		N: 37				
update and rank for new data						
9-Sep-94	25.66	1	0.0168	-2.125	3.245	0.940
5-Oct-94	41.39	2	0.0436	-1.710	3.723	0.941
20-Dec-93	46.55	3	0.0705	-1.472	3.841	0.949
29-Oct-93	48.65	4	0.0973	-1.297	3.885	0.957
15-Nov-94	49.37	5	0.1242	-1.154	3.899	0.962
16-Aug-94	50.11	6	0.1510	-1.032	3.914	0.965
17-Feb-94	50.11	7	0.1779	-0.924	3.914	0.967
3-Oct-91	51.7	8	0.2047	-0.825	3.945	0.966
23-Jul-94	54.76	9	0.2315	-0.734	4.003	0.964
14-Dec-94	55.58	10	0.2584	-0.648	4.018	0.962
14-Sep-95	58.11	11	0.2852	-0.567	4.062	0.959
15-Aug-95	58.11	12	0.3121	-0.490	4.062	0.955
2-Dec-93	59.86	13	0.3389	-0.415	4.092	0.951
26-Jul-95	60.76	14	0.3658	-0.343	4.107	0.949
19-Jan-94	66.45	15	0.3926	-0.273	4.196	0.950
12-Jul-95	78.37	16	0.4195	-0.203	4.361	0.954
24-Jun-94	96.86	17	0.4463	-0.135	4.573	0.958
28-Jun-95	119.95	18	0.4732	-0.067	4.787	0.957
6-Nov-97	121	19	0.5000	0.000	4.796	0.952
7-Mar-94	131.53	20	0.5268	0.067	4.879	0.949
23-Mar-94	131.53	21	0.5537	0.135	4.879	0.946
8-Jun-94	176.59	22	0.5805	0.203	5.174	0.950
6-Apr-94	197.02	23	0.6074	0.273	5.283	0.944
8-Mar-95	203.3	24	0.6342	0.343	5.315	0.937
25-Apr-95	216.49	25	0.6611	0.415	5.378	0.928
9-Feb-95	234.25	26	0.6879	0.490	5.456	0.917
11-Jan-95	234.25	27	0.7148	0.567	5.456	0.903
13-Jun-95	253.54	28	0.7416	0.648	5.536	0.888
3-May-94	302.04	29	0.7685	0.734	5.711	0.872
20-May-94	311.85	30	0.7953	0.825	5.743	0.844
13-Apr-95	322	31	0.8221	0.924	5.775	0.812
23-May-95	451.89	32	0.8490	1.032	6.113	0.874
14-May-91	513.3	33	0.8758	1.154	6.241	0.842
22-Mar-95	549.7	34	0.9027	1.297	6.309	
18-Apr-94	680.99	35	0.9295	1.472	6.524	
12-May-98	758	36	0.9564	1.710	6.631	
11-May-95	790.77	37	0.9832	2.125	6.673	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF249	**Date:**	19-Jun-00
Chemical:	tZn	**Analyst:**	JMacLachlan
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	34,626	207	1,086	874	0.00	0.00	0.00
SD:	440	208	455	638	1.00	1.00	1.00
CV:	0.01	1.00	0.42	0.73			
Min:	33,372	26	379	196.0	-0.87	-1.55	-1.06
Max:	35,927	791	2,180	2,993	2.81	2.40	3.32
Median:	34,612	121	1,000	747	-0.41	-0.19	-0.20

tZn SF249		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.431)	update r2	0.43	0.431		r2:	0.039	0.035
r2 Q,[COC]:	0.43	[tCd]	Q		m:	0.0927	0.00040
slope, m:	-1.4	1,346	25.7		b:	-3003	-9.12
intercept, b:	1383.2	1,086	206.8				
N: 37		246	791				
LnConc. = mLn(Q)+b (r2=0.618)		update r2	0.62	0.618			
r2 lnQ,ln[COC]:	0.62	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.37	7.50	3.24	1,805	26		
intercept, b:	8.69	6.73	5.33	837	207		
N: 37		6.24	6.67	511	791		

N= 37

	Sampling Date	Q Discharge	tZn Concentration	tZn Load	Ln Q	Ln tZn Conc.	Ln tZn Load	tZn SF249 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	14-May-91	513.3	433	1195.8	6.24	6.07	7.09	1.48	-1.43	0.50
MFG	3-Oct-91	51.7	1730	481.2	3.95	7.46	6.18	-0.75	1.42	-0.62
IDEQ	29-Oct-93	48.65	1560	408.3	3.88	7.35	6.01	-0.76	1.04	-0.73
IDEQ	2-Dec-93	59.86	1700	547.5	4.09	7.44	6.31	-0.71	1.35	-0.51
IDEQ	20-Dec-93	46.55	1850	463.3	3.84	7.52	6.14	-0.77	1.68	-0.64
IDEQ	19-Jan-94	66.45	1350	482.6	4.20	7.21	6.18	-0.68	0.58	-0.61
IDEQ	17-Feb-94	50.11	1520	409.8	3.91	7.33	6.02	-0.75	0.95	-0.73
IDEQ	7-Mar-94	131.53	1340	948.2	4.88	7.20	6.85	-0.36	0.56	0.12
IDEQ	23-Mar-94	131.53	1390	983.6	4.88	7.24	6.89	-0.36	0.67	0.17
IDEQ	6-Apr-94	197.02	872	924.3	5.28	6.77	6.83	-0.05	-0.47	0.08
IDEQ	18-Apr-94	680.99	817	2993.3	6.52	6.71	8.00	2.28	-0.59	3.32
IDEQ	3-May-94	302.04	544	884.0	5.71	6.30	6.78	0.46	-1.19	0.02
IDEQ	20-May-94	311.85	546	916.1	5.74	6.30	6.82	0.51	-1.19	0.07
IDEQ	8-Jun-94	176.59	786	746.7	5.17	6.67	6.62	-0.15	-0.66	-0.20
IDEQ	24-Jun-94	96.86	884	460.7	4.57	6.78	6.13	-0.53	-0.44	-0.65
IDEQ	23-Jul-94	54.76	877	258.4	4.00	6.78	5.55	-0.73	-0.46	-0.97
IDEQ	16-Aug-94	50.11	1040	280.4	3.91	6.95	5.64	-0.75	-0.10	-0.93
IDEQ	9-Sep-94	25.66	1420	196.0	3.24	7.26	5.28	-0.87	0.73	-1.06
IDEQ	5-Oct-94	41.39	1340	298.4	3.72	7.20	5.70	-0.80	0.56	-0.90
IDEQ	15-Nov-94	49.37	2180	579.0	3.90	7.69	6.36	-0.76	2.40	-0.46
IDEQ	14-Dec-94	55.58	2100	627.9	4.02	7.65	6.44	-0.73	2.23	-0.39
IDEQ	11-Jan-95	234.25	1220	1537.5	5.46	7.11	7.34	0.13	0.30	1.04
IDEQ	9-Feb-95	234.25	1000	1260.3	5.46	6.91	7.14	0.13	-0.19	0.61
IDEQ	8-Mar-95	203.3	1030	1126.6	5.31	6.94	7.03	-0.02	-0.12	0.40
IDEQ	22-Mar-95	549.7	855	2528.6	6.31	6.75	7.84	1.65	-0.51	2.59
IDEQ	13-Apr-95	322	857	1484.6	5.77	6.75	7.30	0.55	-0.50	0.96
IDEQ	25-Apr-95	216.49	821	956.2	5.38	6.71	6.86	0.05	-0.58	0.13
IDEQ	11-May-95	790.77	543	2310.1	6.67	6.30	7.75	2.81	-1.19	2.25
IDEQ	23-May-95	451.89	446	1084.3	6.11	6.10	6.99	1.18	-1.41	0.33
IDEQ	13-Jun-95	253.54	555	757.0	5.54	6.32	6.63	0.22	-1.17	-0.18
IDEQ	28-Jun-95	119.95	737	475.6	4.79	6.60	6.16	-0.42	-0.77	-0.63
IDEQ	12-Jul-95	78.37	833	351.2	4.36	6.73	5.86	-0.62	-0.56	-0.82
IDEQ	26-Jul-95	60.76	986	322.3	4.11	6.89	5.78	-0.70	-0.22	-0.87
IDEQ	15-Aug-95	58.11	1180	368.9	4.06	7.07	5.91	-0.72	0.21	-0.79
IDEQ	14-Sep-95	58.11	1300	406.4	4.06	7.17	6.01	-0.72	0.47	-0.73
URS	6-Nov-97	121	1150	748.6	4.80	7.05	6.62	-0.41	0.14	-0.20
URS	12-May-98	758	379	1545.6	6.63	5.94	7.34	2.65	-1.55	1.05

tZn

Concentration over time analysis

				r2	Slope, m
	tZn	SF249		Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.052	-0.00023
	Time	Ln[COC]	[COC]		
first:	14-May-91	7.18	1,319		
mid:	5-Oct-94	6.90	993		
last:	12-May-98	6.60	734		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

Load over time analysis

	tZn	SF249		Load over time	
	LnLoad=mTime+b All data r2, m:			0.014	0.00017
	Time	LnLoad	Load		
first:	14-May-91	6.33	562		
mid:	5-Oct-94	6.55	698		
last:	12-May-98	6.78	878		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

max r2:	0.475		max r2:	0.926	
Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.052	-0.00023	14.84	0.014	0.00017	0.50
0.202	-0.00049	23.86	0.043	0.00035	-5.61
0.164	-0.00050	24.10	0.035	0.00036	-6.03
0.146	-0.00047	23.19	0.027	0.00032	-4.58
0.124	-0.00043	21.84	0.024	0.00031	-4.10
0.099	-0.00038	19.99	0.018	0.00027	-2.90
0.086	-0.00036	19.18	0.014	0.00024	-1.74
0.069	-0.00032	17.81	0.008	0.00019	0.16
0.056	-0.00029	16.78	0.011	0.00022	-1.04
0.042	-0.00025	15.48	0.015	0.00026	-2.51
0.045	-0.00026	15.96	0.019	0.00030	-3.87
0.052	-0.00029	16.79	0.057	0.00049	-10.60
0.085	-0.00037	19.58	0.068	0.00055	-12.55
0.135	-0.00045	22.69	0.082	0.00061	-14.88
0.158	-0.00050	24.35	0.090	0.00066	-16.44
0.172	-0.00054	25.60	0.081	0.00064	-15.65
0.189	-0.00058	26.95	0.057	0.00052	-11.64
0.190	-0.00059	27.47	0.036	0.00040	-7.50
0.168	-0.00056	26.26	0.012	0.00021	-0.79
0.148	-0.00052	25.14	0.001	0.00007	4.42
0.113	-0.00041	21.20	0.000	0.00001	6.38
0.077	-0.00029	17.00	0.000	-0.00004	8.10
0.056	-0.00025	15.25	0.001	0.00005	5.17
0.045	-0.00022	14.36	0.003	0.00011	3.03
0.033	-0.00019	13.18	0.006	0.00016	1.26
0.029	-0.00018	12.83	0.038	0.00034	-5.37
0.024	-0.00016	12.38	0.079	0.00047	-9.92
0.021	-0.00016	12.08	0.106	0.00055	-12.71
0.045	-0.00023	14.58	0.380	0.00082	-22.31
0.138	-0.00036	19.43	0.658	0.00100	-28.95
0.276	-0.00049	23.95	0.878	0.00116	-34.50
0.378	-0.00059	27.47	0.926	0.00124	-37.44
0.475	-0.00070	31.43	0.919	0.00125	-37.74

update for EV, CV:

tZn
LN Analysis

SF249
tZn

Load

Load Data, EV=874 lbs/day CV=0.73

Avg:	**874**
SD:	**638**
CV:	**0.73**
Min:	**196.0**
Max:	**2,993**
Median:	**747**

Load Data-based LN

u	ln tCd Load	tCd Load
3	8.5	5014
0	6.56	706
-3	4.60	99.5

874	874
0.73	0.73

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.983, EV=886lbs/day CV=0.778; max r2=0.99**

r2 u,lnLoad:	0.983	u	lnLoad	Load
slope, m:	1.453	3	8.61	5513
intercept, b:	-9.519	0	6.55	700
N:	37	-3	4.49	88.8
E[Load]:	886.4	Parameter Estimates		
SD[Load]:	690	from LN regression		
CV[Load]:	0.78	update graph label		

0.983	0.983
886.4	886
0.8	0.778

max r2
0.986

N: 37

Date	tZn Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
9-Sep-94	196.0	1	0.0168	-2.125	5.278	0.983
23-Jul-94	258.4	2	0.0436	-1.710	5.554	0.984
16-Aug-94	280.4	3	0.0705	-1.472	5.636	0.985
5-Oct-94	298.4	4	0.0973	-1.297	5.698	0.986
26-Jul-95	322.3	5	0.1242	-1.154	5.776	0.985
12-Jul-95	351.2	6	0.1510	-1.032	5.861	0.985
15-Aug-95	368.9	7	0.1779	-0.924	5.911	0.985
14-Sep-95	406.4	8	0.2047	-0.825	6.007	0.984
29-Oct-93	408.3	9	0.2315	-0.734	6.012	0.984
17-Feb-94	409.8	10	0.2584	-0.648	6.016	0.983
24-Jun-94	460.7	11	0.2852	-0.567	6.133	0.981
20-Dec-93	463.3	12	0.3121	-0.490	6.138	0.980
28-Jun-95	475.6	13	0.3389	-0.415	6.165	0.979
3-Oct-91	481.2	14	0.3658	-0.343	6.176	0.977
19-Jan-94	482.6	15	0.3926	-0.273	6.179	0.975
2-Dec-93	547.5	16	0.4195	-0.203	6.305	0.977
15-Nov-94	579.0	17	0.4463	-0.135	6.361	0.976
14-Dec-94	627.9	18	0.4732	-0.067	6.442	0.975
8-Jun-94	746.7	19	0.5000	0.000	6.616	0.974
6-Nov-97	748.6	20	0.5268	0.067	6.618	0.972
13-Jun-95	757.0	21	0.5537	0.135	6.629	0.970
3-May-94	884.0	22	0.5805	0.203	6.784	0.966
20-May-94	916.1	23	0.6074	0.273	6.820	0.967
6-Apr-94	924.3	24	0.6342	0.343	6.829	0.969
7-Mar-94	948.2	25	0.6611	0.415	6.855	0.969
25-Apr-95	956.2	26	0.6879	0.490	6.863	0.967
23-Mar-94	983.6	27	0.7148	0.567	6.891	0.962
23-May-95	1084.3	28	0.7416	0.648	6.989	0.955
8-Mar-95	1126.6	29	0.7685	0.734	7.027	0.948
14-May-91	1195.8	30	0.7953	0.825	7.087	0.937
9-Feb-95	1260.3	31	0.8221	0.924	7.139	0.920
13-Apr-95	1484.6	32	0.8490	1.032	7.303	0.896
11-Jan-95	1537.5	33	0.8758	1.154	7.338	0.868
12-May-98	1545.6	34	0.9027	1.297	7.343	
11-May-95	2310.1	35	0.9295	1.472	7.745	
22-Mar-95	2528.6	36	0.9564	1.710	7.835	
18-Apr-94	2993.3	37	0.9832	2.125	8.004	

		update for EV, CV:				
tZn		SF249		1,086	1090	
LN Analysis		tZn		0.42	0.419	
Concentration		Conc. Data, EV=1090 ug/L CV=0.419				
Avg:	1,086	Data-based LN				
SD:	455	u	ln[tCd]	[tCd]		
CV:	0.42	3	8.1	3349		
Min:	379	0	6.91	1001		
Max:	2,180	-3	5.70	299		
Median:	1,000					

					0.977	0.977
u=mLn(Conc.)+b:					1102.3	1100
update for r2, EV, CV:	r2=0.977, EV=1100 ug/L CV=0.491; max r2=0.98				0.491	0.491
	r2 u,lnConc:	0.977	u	lnConc.	Conc.	
	slope, m:	2.151	3	8.29	3991	
	intercept, b:	-14.836	0	6.90	989	
	N:	37	-3	5.50	245	
	E[Conc]:	1102.3	Parameter Estimates			
	SD[Conc]:	541	from LN regression			
	CV[Conc]:	0.49	update graph label			

	tZn	N: 37				max r2 0.981
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
12-May-98	379	1	0.0168	-2.125	5.938	0.977
14-May-91	433	2	0.0436	-1.710	6.071	0.974
23-May-95	446	3	0.0705	-1.472	6.100	0.970
11-May-95	543	4	0.0973	-1.297	6.297	0.970
3-May-94	544	5	0.1242	-1.154	6.299	0.967
20-May-94	546	6	0.1510	-1.032	6.303	0.966
13-Jun-95	555	7	0.1779	-0.924	6.319	0.969
28-Jun-95	737	8	0.2047	-0.825	6.603	0.981
8-Jun-94	786	9	0.2315	-0.734	6.667	0.980
18-Apr-94	817	10	0.2584	-0.648	6.706	0.979
25-Apr-95	821	11	0.2852	-0.567	6.711	0.978
12-Jul-95	833	12	0.3121	-0.490	6.725	0.977
22-Mar-95	855	13	0.3389	-0.415	6.751	0.975
13-Apr-95	857	14	0.3658	-0.343	6.753	0.972
6-Apr-94	872	15	0.3926	-0.273	6.771	0.970
23-Jul-94	877	16	0.4195	-0.203	6.777	0.968
24-Jun-94	884	17	0.4463	-0.135	6.784	0.968
26-Jul-95	986	18	0.4732	-0.067	6.894	0.974
9-Feb-95	1000	19	0.5000	0.000	6.908	0.972
8-Mar-95	1030	20	0.5268	0.067	6.937	0.972
16-Aug-94	1040	21	0.5537	0.135	6.947	0.972
6-Nov-97	1150	22	0.5805	0.203	7.048	0.980
15-Aug-95	1180	23	0.6074	0.273	7.073	0.978
11-Jan-95	1220	24	0.6342	0.343	7.107	0.976
14-Sep-95	1300	25	0.6611	0.415	7.170	0.973
5-Oct-94	1340	26	0.6879	0.490	7.200	0.971
7-Mar-94	1340	27	0.7148	0.567	7.200	0.970
19-Jan-94	1350	28	0.7416	0.648	7.208	0.966
23-Mar-94	1390	29	0.7685	0.734	7.237	0.959
9-Sep-94	1420	30	0.7953	0.825	7.258	0.951
17-Feb-94	1520	31	0.8221	0.924	7.326	0.947
29-Oct-93	1560	32	0.8490	1.032	7.352	0.931
2-Dec-93	1700	33	0.8758	1.154	7.438	0.918
3-Oct-91	1730	34	0.9027	1.297	7.456	
20-Dec-93	1850	35	0.9295	1.472	7.523	
14-Dec-94	2100	36	0.9564	1.710	7.650	
15-Nov-94	2180	37	0.9832	2.125	7.687	

update for EV, CV:

tZn		**SF249**			207	207
LN Analysis		**tZn**			1.00	1
Discharge, Q		**Q Data, EV=207 cfs CV=1**				
Avg:	**207**	**Q Data-based LN**				
SD:	**208**	u	lnQ	Q		
CV:	**1.00**	3	7.5	1787		
Min:	**26**	0	4.98	146		
Max:	**791**	-3	2.48	12		
Median:	**121**					

	0.940	0.94
	219.4	219
u=mLn(Q)+b:	1.34	1.34

update for r2, EV, CV: **r2=0.94, EV=219 cfs CV=1.34; max r2=0.97**

r2 u,lnQ:	0.940	u	lnQ	Q
slope, m:	0.987	3	7.92	2742
intercept, b:	-4.817	0	4.88	131
N:	37	-3	1.84	6
E[Q]:	219.4	Parameter Estimates		
SD[Q]:	293	from LN regression		
CV[Q]:	1.34	update graph label		

N: 37 — max r2: 0.967

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
9-Sep-94	25.66	1	0.0168	-2.125	3.245	0.940
5-Oct-94	41.39	2	0.0436	-1.710	3.723	0.941
20-Dec-93	46.55	3	0.0705	-1.472	3.841	0.949
29-Oct-93	48.65	4	0.0973	-1.297	3.885	0.957
15-Nov-94	49.37	5	0.1242	-1.154	3.899	0.962
16-Aug-94	50.11	6	0.1510	-1.032	3.914	0.965
17-Feb-94	50.11	7	0.1779	-0.924	3.914	0.967
3-Oct-91	51.7	8	0.2047	-0.825	3.945	0.966
23-Jul-94	54.76	9	0.2315	-0.734	4.003	0.964
14-Dec-94	55.58	10	0.2584	-0.648	4.018	0.962
14-Sep-95	58.11	11	0.2852	-0.567	4.062	0.959
15-Aug-95	58.11	12	0.3121	-0.490	4.062	0.955
2-Dec-93	59.86	13	0.3389	-0.415	4.092	0.951
26-Jul-95	60.76	14	0.3658	-0.343	4.107	0.949
19-Jan-94	66.45	15	0.3926	-0.273	4.196	0.950
12-Jul-95	78.37	16	0.4195	-0.203	4.361	0.954
24-Jun-94	96.86	17	0.4463	-0.135	4.573	0.958
28-Jun-95	119.95	18	0.4732	-0.067	4.787	0.957
6-Nov-97	121	19	0.5000	0.000	4.796	0.952
7-Mar-94	131.53	20	0.5268	0.067	4.879	0.949
23-Mar-94	131.53	21	0.5537	0.135	4.879	0.946
8-Jun-94	176.59	22	0.5805	0.203	5.174	0.950
6-Apr-94	197.02	23	0.6074	0.273	5.283	0.944
8-Mar-95	203.3	24	0.6342	0.343	5.315	0.937
25-Apr-95	216.49	25	0.6611	0.415	5.378	0.928
9-Feb-95	234.25	26	0.6879	0.490	5.456	0.917
11-Jan-95	234.25	27	0.7148	0.567	5.456	0.903
13-Jun-95	253.54	28	0.7416	0.648	5.536	0.888
3-May-94	302.04	29	0.7685	0.734	5.711	0.872
20-May-94	311.85	30	0.7953	0.825	5.743	0.844
13-Apr-95	322	31	0.8221	0.924	5.775	0.812
23-May-95	451.89	32	0.8490	1.032	6.113	0.874
14-May-91	513.3	33	0.8758	1.154	6.241	0.842
22-Mar-95	549.7	34	0.9027	1.297	6.309	
18-Apr-94	680.99	35	0.9295	1.472	6.524	
12-May-98	758	36	0.9564	1.710	6.631	
11-May-95	790.77	37	0.9832	2.125	6.673	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF259	**Date:**	19-Jun-00
Chemical:	dCd	**Analyst:**	J.MacLachlan
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,618	264	8	8	0.00	0.00	0.00
SD:	437	293	3	6	1.00	1.00	1.00
CV:	0.01	1.11	0.36	0.79			
Min:	33,372	31	3	1.8	-0.80	-1.91	-0.99
Max:	35,927	1,219	14	27	3.26	2.13	2.93
Median:	34,599	133	8	6	-0.45	-0.09	-0.31

dCd SF259			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.489)		update r2	0.49	0.489	r2:	0.006	0.022
r2 Q,[COC]:	0.49	[tCd]	Q		m:	0.0530	0.00034
slope, m:	-0.01	10	30.9		b:	-1571	-6.78
intercept, b:	9.7	8	263.8				
N: 38		1	1219				
LnConc. = mLn(Q)+b (r2=0.648)		update r2	0.65	0.648			
r2 lnQ,ln[COC]:	0.65	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.32	2.52	3.43	12	31		
intercept, b:	3.63	1.83	5.58	6	264		
N: 38		1.34	7.11	4	1,219		

N= 38

	Sampling Date	Q Discharge	dCd Concentration	dCd Load	Ln Q	Ln dCd Conc.	Ln dCd Load	for graph 0 dCd SF259 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	14-May-91	920.2	2.5	12.4	6.82	0.92	2.52	2.24	-1.91	0.66
MFG	1-Oct-91	50.8	11	3.0	3.93	2.40	1.10	-0.73	1.07	-0.80
IDEQ	29-Oct-93	55.72	8.6	2.6	4.02	2.15	0.95	-0.71	0.23	-0.87
IDEQ	2-Dec-93	72.21	8.2	3.2	4.28	2.10	1.16	-0.65	0.09	-0.77
IDEQ	21-Dec-93	58.04	12.8	4.0	4.06	2.55	1.39	-0.70	1.70	-0.65
IDEQ	21-Dec-93	55.86	12.8	3.8	4.02	2.55	1.35	-0.71	1.70	-0.67
IDEQ	19-Jan-94	81.73	10	4.4	4.40	2.30	1.48	-0.62	0.72	-0.58
IDEQ	17-Feb-94	57.25	10	3.1	4.05	2.30	1.12	-0.71	0.72	-0.79
IDEQ	7-Mar-94	195.33	7.2	7.6	5.27	1.97	2.02	-0.23	-0.26	-0.09
IDEQ	23-Mar-94	176.74	8.2	7.8	5.17	2.10	2.05	-0.30	0.09	-0.05
IDEQ	6-Apr-94	268.24	7.5	10.8	5.59	2.01	2.38	0.02	-0.16	0.42
IDEQ	18-Apr-94	1219.37	4.1	26.9	7.11	1.41	3.29	3.26	-1.35	2.93
IDEQ	3-May-94	343.76	4.5	8.3	5.84	1.50	2.12	0.27	-1.21	0.03
IDEQ	20-May-94	369.97	4.4	8.8	5.91	1.48	2.17	0.36	-1.25	0.10
IDEQ	8-Jun-94	201.01	6	6.5	5.30	1.79	1.87	-0.21	-0.68	-0.26
IDEQ	24-Jun-94	115.68	7.2	4.5	4.75	1.97	1.50	-0.51	-0.26	-0.57
IDEQ	23-Jul-94	65.61	7.1	2.5	4.18	1.96	0.92	-0.68	-0.30	-0.88
IDEQ	16-Aug-94	73.21	10	3.9	4.29	2.30	1.37	-0.65	0.72	-0.66
IDEQ	9-Sep-94	57.25	10.6	3.3	4.05	2.36	1.18	-0.71	0.93	-0.76
IDEQ	5-Oct-94	30.9	11	1.8	3.43	2.40	0.60	-0.80	1.07	-0.99
IDEQ	15-Nov-94	75.25	14	5.7	4.32	2.64	1.73	-0.64	2.13	-0.39
IDEQ	14-Dec-94	84.02	14	6.3	4.43	2.64	1.85	-0.61	2.13	-0.28
IDEQ	11-Jan-95	333.83	8.1	14.5	5.81	2.09	2.68	0.24	0.05	1.00
IDEQ	9-Feb-95	305.78	7.3	12.0	5.72	1.99	2.49	0.14	-0.23	0.60
IDEQ	8-Mar-95	238.9	7.2	9.3	5.48	1.97	2.23	-0.08	-0.26	0.17
IDEQ	23-Mar-95	577.77	7.9	24.6	6.36	2.07	3.20	1.07	-0.02	2.56
IDEQ	13-Apr-95	328.97	6.6	11.7	5.80	1.89	2.46	0.22	-0.47	0.55
IDEQ	25-Apr-95	284.29	6.8	10.4	5.65	1.92	2.34	0.07	-0.40	0.35
IDEQ	11-May-95	843.25	5.4	24.5	6.74	1.69	3.20	1.98	-0.89	2.55
IDEQ	24-May-95	793.42	4	17.1	6.68	1.39	2.84	1.81	-1.39	1.40
IDEQ	13-Jun-95	276.14	4	5.9	5.62	1.39	1.78	0.04	-1.39	-0.34
IDEQ	28-Jun-95	120.65	6.2	4.0	4.79	1.82	1.39	-0.49	-0.61	-0.64
IDEQ	12-Jul-95	73.21	7.2	2.8	4.29	1.97	1.04	-0.65	-0.26	-0.83
IDEQ	26-Jul-95	59.64	8.4	2.7	4.09	2.13	0.99	-0.70	0.16	-0.85
IDEQ	15-Aug-95	58.83	8.8	2.8	4.07	2.17	1.02	-0.70	0.30	-0.84
IDEQ	14-Sep-95	53.5	9.4	2.7	3.98	2.24	1.00	-0.72	0.51	-0.85
URS	6-Nov-97	145	9.76	7.6	4.98	2.28	2.03	-0.41	0.64	-0.08
URS	12-May-98	902	3.2	15.5	6.80	1.16	2.74	2.18	-1.67	1.15

dCd

Concentration over time analysis

	dCd	SF259		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.003**	**-0.00005**
	Time	**Ln[COC]**	**[COC]**		
first:	14-May-91	2.07	8		
mid:	22-Sep-94	2.00	7		
last:	12-May-98	1.93	7		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

Load over time analysis

	dCd	SF259			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.031**	**0.00029**
	Time	**LnLoad**	**Load**		
first:	14-May-91	1.47	4		
mid:	22-Sep-94	1.82	6		
last:	12-May-98	2.21	9		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

	max r2: 0.409			max r2: 0.963		
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.003	-0.00005	3.85	0.031	0.00029	-8.15
	0.114	-0.00031	12.90	0.082	0.00052	-16.38
	0.088	-0.00031	12.80	0.057	0.00049	-15.31
	0.085	-0.00031	12.78	0.042	0.00042	-12.88
	0.083	-0.00031	12.89	0.032	0.00037	-11.00
	0.064	-0.00027	11.39	0.025	0.00034	-9.74
	0.044	-0.00022	9.67	0.018	0.00029	-8.14
	0.034	-0.00019	8.74	0.014	0.00025	-6.91
	0.024	-0.00017	7.72	0.007	0.00018	-4.19
	0.025	-0.00017	7.89	0.008	0.00019	-4.73
	0.021	-0.00016	7.54	0.009	0.00021	-5.44
	0.020	-0.00016	7.50	0.014	0.00027	-7.60
	0.045	-0.00023	10.13	0.044	0.00046	-14.06
	0.078	-0.00031	12.66	0.053	0.00051	-15.92
	0.132	-0.00039	15.60	0.065	0.00058	-18.23
	0.163	-0.00044	17.34	0.068	0.00061	-19.30
	0.176	-0.00047	18.36	0.061	0.00059	-18.54
	0.192	-0.00050	19.49	0.041	0.00047	-14.55
	0.174	-0.00048	18.84	0.030	0.00041	-12.43
	0.152	-0.00045	17.73	0.018	0.00031	-8.95
	0.126	-0.00041	16.20	0.002	0.00011	-1.73
	0.093	-0.00032	13.18	0.001	0.00006	-0.15
	0.059	-0.00023	9.80	0.000	0.00003	1.00
	0.047	-0.00020	9.00	0.003	0.00012	-2.21
	0.042	-0.00019	8.64	0.007	0.00019	-4.69
	0.036	-0.00018	8.28	0.010	0.00023	-6.02
	0.027	-0.00016	7.33	0.040	0.00043	-13.05
	0.025	-0.00015	7.25	0.063	0.00053	-16.86
	0.021	-0.00015	6.94	0.092	0.00064	-20.80
	0.032	-0.00018	8.16	0.282	0.00095	-31.65
	0.093	-0.00029	12.12	0.740	0.00127	-43.02
	0.263	-0.00044	17.44	0.905	0.00143	-48.69
	0.352	-0.00052	20.45	0.963	0.00153	-52.58
	0.409	-0.00060	23.21	0.963	0.00157	-53.75

update for EV, CV:

dCd **SF259**

LN Analysis **dCd**

Load **Load Data, EV=8.14 lbs/day CV=0.787**

Load Data-based LN

		u	ln tCd Load	tCd Load
Avg:	**8**	3	3.9	51
SD:	**6**	0	1.86	6
CV:	**0.79**	-3	-0.23	0.8
Min:	**1.8**			
Max:	**27**			
Median:	**6**			

8	8.14
0.79	0.787

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.962, EV=8.32lbs/day CV=0.882; max r2=0.98**

r2 u,lnLoad:	0.962	u	lnLoad	Load		
slope, m:	1.318	3	4.11	61		
intercept, b:	-2.413	0	1.83	6		
N:	38	-3	-0.45	0.6		
E[Load]:	8.3	Parameter Estimates			0.962	0.962
SD[Load]:	7	from LN regression			8.3	8.32
CV[Load]:	0.88	update graph label			0.9	0.882
					max r2	
					0.984	

Date	dCd Load lbs/day Ranked	N: 38 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
5-Oct-94	1.8	1	0.0163	-2.136	0.604	0.962
23-Jul-94	2.5	2	0.0425	-1.723	0.919	0.966
29-Oct-93	2.6	3	0.0686	-1.486	0.947	0.975
26-Jul-95	2.7	4	0.0948	-1.312	0.991	0.980
14-Sep-95	2.7	5	0.1209	-1.170	0.995	0.983
15-Aug-95	2.8	6	0.1471	-1.049	1.024	0.984
12-Jul-95	2.8	7	0.1732	-0.942	1.042	0.984
1-Oct-91	3.0	8	0.1993	-0.844	1.101	0.983
17-Feb-94	3.1	9	0.2255	-0.754	1.125	0.982
2-Dec-93	3.2	10	0.2516	-0.669	1.159	0.980
9-Sep-94	3.3	11	0.2778	-0.589	1.183	0.979
21-Dec-93	3.8	12	0.3039	-0.513	1.347	0.978
16-Aug-94	3.9	13	0.3301	-0.440	1.371	0.976
21-Dec-93	4.0	14	0.3562	-0.369	1.386	0.974
28-Jun-95	4.0	15	0.3824	-0.299	1.392	0.972
19-Jan-94	4.4	16	0.4085	-0.231	1.481	0.972
24-Jun-94	4.5	17	0.4346	-0.165	1.500	0.973
15-Nov-94	5.7	18	0.4608	-0.098	1.735	0.977
13-Jun-95	5.9	19	0.4869	-0.033	1.782	0.975
14-Dec-94	6.3	20	0.5131	0.033	1.845	0.973
8-Jun-94	6.5	21	0.5392	0.098	1.870	0.970
7-Mar-94	7.6	22	0.5654	0.165	2.024	0.968
6-Nov-97	7.6	23	0.5915	0.231	2.030	0.965
23-Mar-94	7.8	24	0.6176	0.299	2.054	0.961
3-May-94	8.3	25	0.6438	0.369	2.119	0.956
20-May-94	8.8	26	0.6699	0.440	2.170	0.950
8-Mar-95	9.3	27	0.6961	0.513	2.225	0.942
25-Apr-95	10.4	28	0.7222	0.589	2.342	0.934
6-Apr-94	10.8	29	0.7484	0.669	2.382	0.923
13-Apr-95	11.7	30	0.7745	0.754	2.458	0.907
9-Feb-95	12.0	31	0.8007	0.844	2.486	0.888
14-May-91	12.4	32	0.8268	0.942	2.516	0.859
11-Jan-95	14.5	33	0.8529	1.049	2.677	0.823
12-May-98	15.5	34	0.8791	1.170	2.743	0.755
24-May-95	17.1	35	0.9052	1.312	2.838	
11-May-95	24.5	36	0.9314	1.486	3.199	
23-Mar-95	24.6	37	0.9575	1.723	3.201	
18-Apr-94	26.9	38	0.9837	2.136	3.292	

		update for EV, CV:			
dCd		SF259		8	7.95
LN Analysis		dCd		0.36	0.358
Concentration		Conc. Data, EV=7.95 ug/L CV=0.358			
Avg:	8	Data-based LN			
SD:	3	u	ln[tCd]	[tCd]	
CV:	0.36	3	3.1	21	
Min:	3	0	2.01	7	
Max:	14	-3	0.97	3	
Median:	8				

					0.953	0.953
u=mLn(Conc.)+b:					8.1	8.09
update for r2, EV, CV:	r2=0.953, EV=8.09 ug/L CV=0.445; max r2=0.98				0.445	0.445
	r2 u,lnConc:	0.953	u	lnConc.	Conc.	
	slope, m:	2.355	3	3.27	26	
	intercept, b:	-4.710	0	2.00	7	
	N: 38		-3	0.73	2	
	E[Conc]:	8.1	Parameter Estimates			
	SD[Conc]:	4	from LN regression			
	CV[Conc]:	0.44	update graph label			

	dCd	N: 38				max r2 0.981
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
14-May-91	2.5	1	0.0163	-2.136	0.916	0.953
12-May-98	3.2	2	0.0425	-1.723	1.163	0.953
13-Jun-95	4	3	0.0686	-1.486	1.386	0.952
24-May-95	4	4	0.0948	-1.312	1.386	0.947
18-Apr-94	4.1	5	0.1209	-1.170	1.411	0.946
20-May-94	4.4	6	0.1471	-1.049	1.482	0.951
3-May-94	4.5	7	0.1732	-0.942	1.504	0.958
11-May-95	5.4	8	0.1993	-0.844	1.686	0.978
8-Jun-94	6	9	0.2255	-0.754	1.792	0.981
28-Jun-95	6.2	10	0.2516	-0.669	1.825	0.979
13-Apr-95	6.6	11	0.2778	-0.589	1.887	0.978
25-Apr-95	6.8	12	0.3039	-0.513	1.917	0.976
23-Jul-94	7.1	13	0.3301	-0.440	1.960	0.975
7-Mar-94	7.2	14	0.3562	-0.369	1.974	0.975
8-Mar-95	7.2	15	0.3824	-0.299	1.974	0.974
12-Jul-95	7.2	16	0.4085	-0.231	1.974	0.973
24-Jun-94	7.2	17	0.4346	-0.165	1.974	0.971
9-Feb-95	7.3	18	0.4608	-0.098	1.988	0.968
6-Apr-94	7.5	19	0.4869	-0.033	2.015	0.966
23-Mar-95	7.9	20	0.5131	0.033	2.067	0.963
11-Jan-95	8.1	21	0.5392	0.098	2.092	0.959
2-Dec-93	8.2	22	0.5654	0.165	2.104	0.955
23-Mar-94	8.2	23	0.5915	0.231	2.104	0.949
26-Jul-95	8.4	24	0.6176	0.299	2.128	0.944
29-Oct-93	8.6	25	0.6438	0.369	2.152	0.938
15-Aug-95	8.8	26	0.6699	0.440	2.175	0.932
14-Sep-95	9.4	27	0.6961	0.513	2.241	0.926
6-Nov-97	9.76	28	0.7222	0.589	2.278	0.915
16-Aug-94	10	29	0.7484	0.669	2.303	0.902
17-Feb-94	10	30	0.7745	0.754	2.303	0.888
19-Jan-94	10	31	0.8007	0.844	2.303	0.864
9-Sep-94	10.6	32	0.8268	0.942	2.361	0.833
1-Oct-91	11	33	0.8529	1.049	2.398	0.782
5-Oct-94	11	34	0.8791	1.170	2.398	0.698
21-Dec-93	12.8	35	0.9052	1.312	2.549	
21-Dec-93	12.8	36	0.9314	1.486	2.549	
14-Dec-94	14	37	0.9575	1.723	2.639	
15-Nov-94	14	38	0.9837	2.136	2.639	

update for EV, CV:

dCd		**SF259**			264	264
LN Analysis		**dCd**			1.11	1.11
Discharge, Q		**Q Data, EV=264 cfs CV=1.11**				
Avg:	**264**	**Q Data-based LN**				
SD:	**293**	u	lnQ	Q		
CV:	**1.11**	3	7.9	2598		
Min:	**31**	0	5.17	177		
Max:	**1,219**	-3	2.48	12		
Median:	**133**					
					0.928	0.928
					279.6	280
	u=mLn(Q)+b:				1.47	1.47

update for r2, EV, CV: **r2=0.928, EV=280 cfs CV=1.47; max r2=0.97**

r2 u,lnQ:	0.928	u	lnQ	Q
slope, m:	0.930	3	8.28	3945
intercept, b:	-4.703	0	5.06	157
N:	38	-3	1.83	6
E[Q]:	279.6	Parameter Estimates		
SD[Q]:	412	from LN regression		
CV[Q]:	1.47	update graph label		

N: 38

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.966 r2 forward
update and rank for new data						
5-Oct-94	30.9	1	0.0163	-2.136	3.431	0.928
1-Oct-91	50.8	2	0.0425	-1.723	3.928	0.931
14-Sep-95	53.5	3	0.0686	-1.486	3.980	0.944
29-Oct-93	55.72	4	0.0948	-1.312	4.020	0.953
21-Dec-93	55.86	5	0.1209	-1.170	4.023	0.959
17-Feb-94	57.25	6	0.1471	-1.049	4.047	0.963
9-Sep-94	57.25	7	0.1732	-0.942	4.047	0.966
21-Dec-93	58.04	8	0.1993	-0.844	4.061	0.966
15-Aug-95	58.83	9	0.2255	-0.754	4.075	0.965
26-Jul-95	59.64	10	0.2516	-0.669	4.088	0.963
23-Jul-94	65.61	11	0.2778	-0.589	4.184	0.960
2-Dec-93	72.21	12	0.3039	-0.513	4.280	0.957
16-Aug-94	73.21	13	0.3301	-0.440	4.293	0.953
12-Jul-95	73.21	14	0.3562	-0.369	4.293	0.949
15-Nov-94	75.25	15	0.3824	-0.299	4.321	0.945
19-Jan-94	81.73	16	0.4085	-0.231	4.403	0.943
14-Dec-94	84.02	17	0.4346	-0.165	4.431	0.942
24-Jun-94	115.68	18	0.4608	-0.098	4.751	0.948
28-Jun-95	120.65	19	0.4869	-0.033	4.793	0.945
6-Nov-97	145	20	0.5131	0.033	4.977	0.945
23-Mar-94	176.74	21	0.5392	0.098	5.175	0.941
7-Mar-94	195.33	22	0.5654	0.165	5.275	0.935
8-Jun-94	201.01	23	0.5915	0.231	5.303	0.927
8-Mar-95	238.9	24	0.6176	0.299	5.476	0.918
6-Apr-94	268.24	25	0.6438	0.369	5.592	0.909
13-Jun-95	276.14	26	0.6699	0.440	5.621	0.900
25-Apr-95	284.29	27	0.6961	0.513	5.650	0.888
9-Feb-95	305.78	28	0.7222	0.589	5.723	0.870
13-Apr-95	328.97	29	0.7484	0.669	5.796	0.848
11-Jan-95	333.83	30	0.7745	0.754	5.811	0.819
3-May-94	343.76	31	0.8007	0.844	5.840	0.779
20-May-94	369.97	32	0.8268	0.942	5.913	0.738
23-Mar-95	577.77	33	0.8529	1.049	6.359	0.845
24-May-95	793.42	34	0.8791	1.170	6.676	0.937
11-May-95	843.25	35	0.9052	1.312	6.737	
12-May-98	902	36	0.9314	1.486	6.805	
14-May-91	920.2	37	0.9575	1.723	6.825	
18-Apr-94	1219.37	38	0.9837	2.136	7.106	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.	see comment
Station: SF259	**Date:** 19-Jun-00
Chemical: dPb	**Analyst:** J.MacLachlan
Notes:	
Input Discharge and Concentration Data below (in red)	

	Date	Discharge	Concentration	Load			
Avg:	34,618	264	10	12	0.00	0.00	0.00
SD:	437	293	2	12	1.00	1.00	1.00
CV:	0.01	1.11	0.23	1.05			
Min:	33,372	31	6	1.7	-0.80	-1.64	-0.82
Max:	35,927	1,219	17	52	3.26	3.34	3.36
Median:	34,599	133	9	8	-0.45	-0.24	-0.33

dPb SF259			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.0943)	update r2		0.09	0.0943	r2:	0.006	0.022
r2 Q,[COC]:	0.09		[tCd]	Q	m:	0.0530	0.00034
slope, m:	-0.002		10	30.9	b:	-1571	-6.78
intercept, b:	10.1		9	263.8			
N: 37			7	1219			
LnConc. = mLn(Q)+b (r2=0.124)		update r2		0.12	0.124		
r2 lnQ,ln[COC]:	0.12		ln[tCd]	ln Q	[tCd]	Q	
slope, m:	-0.08		2.35	3.43	11	31	
intercept, b:	2.61		2.19	5.58	9	264	
N: 37			2.07	7.11	8	1,219	

N= 38

	Sampling Date	Q Discharge	dPb Concentration	dPb Load	Ln Q	Ln dPb Conc.	Ln dPb Load	dPb SF259 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	*14-May-91*	*920.2*			6.82			2.24		
MFG	1-Oct-91	50.8	7	1.9	3.93	1.95	0.65	-0.73	-1.18	-0.80
IDEQ	29-Oct-93	55.72	11	3.3	4.02	2.40	1.19	-0.71	0.69	-0.69
IDEQ	2-Dec-93	72.21	8	3.1	4.28	2.08	1.13	-0.65	-0.71	-0.70
IDEQ	21-Dec-93	58.04	9	2.8	4.06	2.20	1.03	-0.70	-0.24	-0.73
IDEQ	21-Dec-93	55.86	9	2.7	4.02	2.20	1.00	-0.71	-0.24	-0.73
IDEQ	19-Jan-94	81.73	9	4.0	4.40	2.20	1.38	-0.62	-0.24	-0.63
IDEQ	17-Feb-94	57.25	9	2.8	4.05	2.20	1.02	-0.71	-0.24	-0.73
IDEQ	7-Mar-94	195.33	9	9.5	5.27	2.20	2.25	-0.23	-0.24	-0.18
IDEQ	23-Mar-94	176.74	8	7.6	5.17	2.08	2.03	-0.30	-0.71	-0.33
IDEQ	6-Apr-94	268.24	7	10.1	5.59	1.95	2.31	0.02	-1.18	-0.13
IDEQ	18-Apr-94	1219.37	8	52.5	7.11	2.08	3.96	3.26	-0.71	3.36
IDEQ	3-May-94	343.76	8	14.8	5.84	2.08	2.69	0.27	-0.71	0.26
IDEQ	20-May-94	369.97	8	15.9	5.91	2.08	2.77	0.36	-0.71	0.35
IDEQ	8-Jun-94	201.01	9	9.7	5.30	2.20	2.28	-0.21	-0.24	-0.16
IDEQ	24-Jun-94	115.68	9	5.6	4.75	2.20	1.72	-0.51	-0.24	-0.50
IDEQ	23-Jul-94	65.61	11	3.9	4.18	2.40	1.36	-0.68	0.69	-0.64
IDEQ	16-Aug-94	73.21	12	4.7	4.29	2.48	1.55	-0.65	1.15	-0.57
IDEQ	9-Sep-94	57.25	9	2.8	4.05	2.20	1.02	-0.71	-0.24	-0.73
IDEQ	5-Oct-94	30.9	10	1.7	3.43	2.30	0.51	-0.80	0.22	-0.82
IDEQ	15-Nov-94	75.25	10	4.0	4.32	2.30	1.40	-0.64	0.22	-0.62
IDEQ	14-Dec-94	84.02	9	4.1	4.43	2.20	1.40	-0.61	-0.24	-0.62
IDEQ	11-Jan-95	333.83	6	10.8	5.81	1.79	2.38	0.24	-1.64	-0.07
IDEQ	9-Feb-95	305.78	8	13.2	5.72	2.08	2.58	0.14	-0.71	0.13
IDEQ	8-Mar-95	238.9	9	11.6	5.48	2.20	2.45	-0.08	-0.24	-0.01
IDEQ	23-Mar-95	577.77	13	40.4	6.36	2.56	3.70	1.07	1.62	2.37
IDEQ	13-Apr-95	328.97	10	17.7	5.80	2.30	2.87	0.22	0.22	0.50
IDEQ	25-Apr-95	284.29	10	15.3	5.65	2.30	2.73	0.07	0.22	0.30
IDEQ	11-May-95	843.25	9	40.8	6.74	2.20	3.71	1.98	-0.24	2.40
IDEQ	24-May-95	793.42	7	29.9	6.68	1.95	3.40	1.81	-1.18	1.50
IDEQ	13-Jun-95	276.14	10	14.9	5.62	2.30	2.70	0.04	0.22	0.27
IDEQ	28-Jun-95	120.65	12	7.8	4.79	2.48	2.05	-0.49	1.15	-0.32
IDEQ	12-Jul-95	73.21	9	3.5	4.29	2.20	1.27	-0.65	-0.24	-0.66
IDEQ	26-Jul-95	59.64	14	4.5	4.09	2.64	1.50	-0.70	2.09	-0.59
IDEQ	15-Aug-95	58.83	13	4.1	4.07	2.56	1.41	-0.70	1.62	-0.62
IDEQ	14-Sep-95	53.5	10	2.9	3.98	2.30	1.06	-0.72	0.22	-0.72
URS	6-Nov-97	145	16.7	13.0	4.98	2.82	2.57	-0.41	3.34	0.12
URS	12-May-98	902	6.7	32.5	6.80	1.90	3.48	2.18	-1.32	1.72

dPb

Concentration over time analysis

	dPb	SF259		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.103	0.00017
	Time	Ln[COC]	[COC]		
first:	14-May-91	2.01	7		
mid:	22-Sep-94	2.22	9		
last:	12-May-98	2.45	12		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

Load over time analysis

	dPb	SF259		Load over time	
	LnLoad=mTime+b All data r2, m:			0.187	0.00101
	Time	LnLoad	Load		
first:	14-May-91	0.72	2		
mid:	22-Sep-94	1.96	7		
last:	12-May-98	3.30	27		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

	max r2:	0.124		max r2:	0.929	
	Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.103	0.00017	-3.77	0.187	0.00101	-33.05
	0.103	0.00017	-3.77	0.187	0.00101	-33.05
	0.062	0.00015	-2.94	0.135	0.00095	-31.05
	0.080	0.00017	-3.73	0.120	0.00091	-29.39
	0.070	0.00016	-3.42	0.104	0.00085	-27.31
	0.069	0.00017	-3.50	0.087	0.00077	-24.63
	0.069	0.00017	-3.58	0.068	0.00068	-21.39
	0.068	0.00017	-3.66	0.056	0.00062	-19.30
	0.067	0.00017	-3.72	0.039	0.00051	-15.63
	0.065	0.00017	-3.77	0.041	0.00054	-16.39
	0.055	0.00016	-3.34	0.039	0.00053	-16.31
	0.038	0.00013	-2.29	0.042	0.00056	-17.39
	0.028	0.00011	-1.68	0.095	0.00081	-25.87
	0.019	0.00009	-0.98	0.118	0.00091	-29.56
	0.010	0.00007	-0.18	0.149	0.00104	-34.01
	0.008	0.00006	0.14	0.162	0.00111	-36.50
	0.005	0.00005	0.52	0.155	0.00110	-36.38
	0.009	0.00007	-0.12	0.136	0.00104	-34.15
	0.019	0.00010	-1.29	0.121	0.00100	-32.56
	0.016	0.00009	-1.01	0.094	0.00086	-27.69
	0.017	0.00010	-1.28	0.058	0.00062	-19.20
	0.019	0.00011	-1.54	0.039	0.00049	-14.86
	0.016	0.00010	-1.24	0.021	0.00036	-10.03
	0.002	0.00003	1.30	0.020	0.00035	-9.91
	0.000	-0.00001	2.54	0.022	0.00038	-10.78
	0.001	-0.00003	3.29	0.022	0.00039	-11.01
	0.000	0.00001	2.11	0.059	0.00059	-18.27
	0.000	0.00000	2.26	0.080	0.00069	-21.85
	0.000	0.00000	2.44	0.102	0.00079	-25.30
	0.002	-0.00003	3.41	0.250	0.00110	-36.39
	0.034	-0.00012	6.68	0.542	0.00144	-48.46
	0.053	-0.00016	7.87	0.807	0.00171	-58.26
	0.045	-0.00015	7.61	0.929	0.00191	-65.42
	0.124	-0.00025	11.26	0.921	0.00192	-65.70

update for EV, CV:

dPb **SF259**

LN Analysis **dPb**

Load **Load Data, EV=11.6 lbs/day CV=1.05**

Load Data-based LN

			u	ln tCd Load	tCd Load
Avg:	12		3	4.7	106
SD:	12		0	2.08	8
CV:	1.05		-3	-0.49	0.6
Min:	1.7				
Max:	52				
Median:	8				
		12		11.6	
		1.05		1.05	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.958, EV=11.8lbs/day CV=1.22; max r2=0.98**

r2 u,lnLoad:	0.958		u	lnLoad	Load		
slope, m:	1.045		3	4.88	132		
intercept, b:	-2.102		0	2.01	7		
N:	37		-3	-0.86	0.4		
E[Load]:	11.8	Parameter Estimates				0.958	0.958
SD[Load]:	14	from LN regression				11.8	11.8
CV[Load]:	1.22	update graph label				1.2	1.22
						max r2	
	dPb	**N: 38**				0.978	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**	
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**	
	Ranked						
update and rank for new data							
5-Oct-94	1.7	1	0.0163	-2.136	0.508	0.958	
1-Oct-91	1.9	2	0.0425	-1.723	0.649	0.963	
21-Dec-93	2.7	3	0.0686	-1.486	0.995	0.964	
17-Feb-94	2.8	4	0.0948	-1.312	1.020	0.971	
9-Sep-94	2.8	5	0.1209	-1.170	1.020	0.976	
21-Dec-93	2.8	6	0.1471	-1.049	1.033	0.978	
14-Sep-95	2.9	7	0.1732	-0.942	1.057	0.978	
2-Dec-93	3.1	8	0.1993	-0.844	1.134	0.977	
29-Oct-93	3.3	9	0.2255	-0.754	1.193	0.976	
12-Jul-95	3.5	10	0.2516	-0.669	1.265	0.975	
23-Jul-94	3.9	11	0.2778	-0.589	1.357	0.973	
19-Jan-94	4.0	12	0.3039	-0.513	1.376	0.972	
15-Nov-94	4.0	13	0.3301	-0.440	1.398	0.970	
14-Dec-94	4.1	14	0.3562	-0.369	1.403	0.967	
15-Aug-95	4.1	15	0.3824	-0.299	1.415	0.964	
26-Jul-95	4.5	16	0.4085	-0.231	1.502	0.962	
16-Aug-94	4.7	17	0.4346	-0.165	1.553	0.960	
24-Jun-94	5.6	18	0.4608	-0.098	1.723	0.962	
14-May-91		19	0.4869	-0.033			
23-Mar-94	7.6	20	0.5131	0.033	2.029	0.960	
28-Jun-95	7.8	21	0.5392	0.098	2.053	0.956	
7-Mar-94	9.5	22	0.5654	0.165	2.247	0.951	
8-Jun-94	9.7	23	0.5915	0.231	2.276	0.948	
6-Apr-94	10.1	24	0.6176	0.299	2.313	0.942	
11-Jan-95	10.8	25	0.6438	0.369	2.377	0.936	
8-Mar-95	11.6	26	0.6699	0.440	2.448	0.927	
6-Nov-97	13.0	27	0.6961	0.513	2.567	0.918	
9-Feb-95	13.2	28	0.7222	0.589	2.577	0.909	
3-May-94	14.8	29	0.7484	0.669	2.694	0.895	
13-Jun-95	14.9	30	0.7745	0.754	2.698	0.881	
25-Apr-95	15.3	31	0.8007	0.844	2.728	0.855	
20-May-94	15.9	32	0.8268	0.942	2.768	0.818	
13-Apr-95	17.7	33	0.8529	1.049	2.873	0.780	
24-May-95	29.9	34	0.8791	1.170	3.397	0.942	
12-May-98	32.5	35	0.9052	1.312	3.482		
23-Mar-95	40.4	36	0.9314	1.486	3.699		
11-May-95	40.8	37	0.9575	1.723	3.709		
18-Apr-94	52.5	38	0.9837	2.136	3.960		

update for EV, CV:

dPb		SF259	10	9.52
LN Analysis		dPb	0.23	0.225

Concentration

Conc. Data, EV=9.52 ug/L CV=0.225

Avg:	10
SD:	2
CV:	0.23
Min:	6
Max:	17
Median:	9

Data-based LN

u	ln[tCd]	[tCd]
3	2.9	18
0	2.23	9
-3	1.56	5

				0.951	0.951
u=mLn(Conc.)+b:				9.4	9.44
update for r2, EV, CV:	**r2=0.951, EV=9.44 ug/L CV=0.241; max r2=0.97**			0.241	0.241
	r2 u,lnConc:	0.951	u	lnConc.	Conc.
	slope, m:	4.211	3	2.93	19
	intercept, b:	-9.337	0	2.22	9
	N: 37		-3	1.50	5
	E[Conc]:	9.4	Parameter Estimates		
	SD[Conc]:	2	from LN regression		
	CV[Conc]:	0.24	update graph label		

	dPb	N: 38				max r2 0.973
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
14-May-91		1	0.0163	-2.136		
11-Jan-95	6	2	0.0425	-1.723	1.792	0.951
12-May-98	6.7	3	0.0686	-1.486	1.902	0.945
1-Oct-91	7	4	0.0948	-1.312	1.946	0.940
6-Apr-94	7	5	0.1209	-1.170	1.946	0.936
24-May-95	7	6	0.1471	-1.049	1.946	0.930
2-Dec-93	8	7	0.1732	-0.942	2.079	0.924
23-Mar-94	8	8	0.1993	-0.844	2.079	0.927
18-Apr-94	8	9	0.2255	-0.754	2.079	0.927
3-May-94	8	10	0.2516	-0.669	2.079	0.925
20-May-94	8	11	0.2778	-0.589	2.079	0.921
9-Feb-95	8	12	0.3039	-0.513	2.079	0.916
21-Dec-93	9	13	0.3301	-0.440	2.197	0.909
21-Dec-93	9	14	0.3562	-0.369	2.197	0.921
19-Jan-94	9	15	0.3824	-0.299	2.197	0.932
17-Feb-94	9	16	0.4085	-0.231	2.197	0.942
7-Mar-94	9	17	0.4346	-0.165	2.197	0.951
8-Jun-94	9	18	0.4608	-0.098	2.197	0.958
24-Jun-94	9	19	0.4869	-0.033	2.197	0.964
9-Sep-94	9	20	0.5131	0.033	2.197	0.967
14-Dec-94	9	21	0.5392	0.098	2.197	0.969
8-Mar-95	9	22	0.5654	0.165	2.197	0.969
11-May-95	9	23	0.5915	0.231	2.197	0.966
12-Jul-95	9	24	0.6176	0.299	2.197	0.962
5-Oct-94	10	25	0.6438	0.369	2.303	0.958
15-Nov-94	10	26	0.6699	0.440	2.303	0.966
13-Apr-95	10	27	0.6961	0.513	2.303	0.971
25-Apr-95	10	28	0.7222	0.589	2.303	0.973
13-Jun-95	10	29	0.7484	0.669	2.303	0.969
14-Sep-95	10	30	0.7745	0.754	2.303	0.963
29-Oct-93	11	31	0.8007	0.844	2.398	0.969
23-Jul-94	11	32	0.8268	0.942	2.398	0.962
16-Aug-94	12	33	0.8529	1.049	2.485	0.955
28-Jun-95	12	34	0.8791	1.170	2.485	0.959
23-Mar-95	13	35	0.9052	1.312	2.565	
15-Aug-95	13	36	0.9314	1.486	2.565	
26-Jul-95	14	37	0.9575	1.723	2.639	
6-Nov-97	16.7	38	0.9837	2.136	2.815	

update for EV, CV:

dPb		SF259			264	264
LN Analysis		dPb			1.11	1.11

Discharge, Q

Q Data, EV=264 cfs CV=1.11

		Q Data-based LN		
Avg:	264	u	lnQ	Q
SD:	293	3	7.9	2598
CV:	1.11	0	5.17	177
Min:	31	-3	2.48	12
Max:	1,219			
Median:	133			

	0.928	0.928
	279.6	280
u*mLn(Q)+b:	1.47	1.47

update for r2, EV, CV: **r2=0.928, EV=280 cfs CV=1.47; max r2=0.97**

r2 u,lnQ:	0.928	u	lnQ	Q
slope, m:	0.930	3	8.28	3945
intercept, b:	-4.703	0	5.06	157
N:	38	-3	1.83	6
E[Q]:	279.6	Parameter Estimates		
SD[Q]:	412	from LN regression		
CV[Q]:	1.47	update graph label		

N: 38

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.966 r2 forward
update and rank for new data						
5-Oct-94	30.9	1	0.0163	-2.136	3.431	0.928
1-Oct-91	50.8	2	0.0425	-1.723	3.928	0.931
14-Sep-95	53.5	3	0.0686	-1.486	3.980	0.944
29-Oct-93	55.72	4	0.0948	-1.312	4.020	0.953
21-Dec-93	55.86	5	0.1209	-1.170	4.023	0.959
17-Feb-94	57.25	6	0.1471	-1.049	4.047	0.963
9-Sep-94	57.25	7	0.1732	-0.942	4.047	0.966
21-Dec-93	58.04	8	0.1993	-0.844	4.061	0.966
15-Aug-95	58.83	9	0.2255	-0.754	4.075	0.965
26-Jul-95	59.64	10	0.2516	-0.669	4.088	0.963
23-Jul-94	65.61	11	0.2778	-0.589	4.184	0.960
2-Dec-93	72.21	12	0.3039	-0.513	4.280	0.957
16-Aug-94	73.21	13	0.3301	-0.440	4.293	0.953
12-Jul-95	73.21	14	0.3562	-0.369	4.293	0.949
15-Nov-94	75.25	15	0.3824	-0.299	4.321	0.945
19-Jan-94	81.73	16	0.4085	-0.231	4.403	0.943
14-Dec-94	84.02	17	0.4346	-0.165	4.431	0.942
24-Jun-94	115.68	18	0.4608	-0.098	4.751	0.948
28-Jun-95	120.65	19	0.4869	-0.033	4.793	0.945
6-Nov-97	145	20	0.5131	0.033	4.977	0.945
23-Mar-94	176.74	21	0.5392	0.098	5.175	0.941
7-Mar-94	195.33	22	0.5654	0.165	5.275	0.935
8-Jun-94	201.01	23	0.5915	0.231	5.303	0.927
8-Mar-95	238.9	24	0.6176	0.299	5.476	0.918
6-Apr-94	268.24	25	0.6438	0.369	5.592	0.909
13-Jun-95	276.14	26	0.6699	0.440	5.621	0.900
25-Apr-95	284.29	27	0.6961	0.513	5.650	0.888
9-Feb-95	305.78	28	0.7222	0.589	5.723	0.870
13-Apr-95	328.97	29	0.7484	0.669	5.796	0.848
11-Jan-95	333.83	30	0.7745	0.754	5.811	0.819
3-May-94	343.76	31	0.8007	0.844	5.840	0.779
20-May-94	369.97	32	0.8268	0.942	5.913	0.738
23-Mar-95	577.77	33	0.8529	1.049	6.359	0.845
24-May-95	793.42	34	0.8791	1.170	6.676	0.937
11-May-95	843.25	35	0.9052	1.312	6.737	
12-May-98	902	36	0.9314	1.486	6.805	
14-May-91	*920.2*	37	0.9575	1.723	6.825	
18-Apr-94	1219.37	38	0.9837	2.136	7.106	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.		see comment		
Station:	SF259	**Date:**	19-Jun-00	
Chemical:	dZn	**Analyst:**	J.MacLachlan	
Notes:				
Input Discharge and Concentration Data below (in red)				

	Date	Discharge	Concentration	Load			
Avg:	34,618	264	1,181	1,175	0.00	0.00	0.00
SD:	437	293	462	894	1.00	1.00	1.00
CV:	0.01	1.11	0.39	0.76			
Min:	33,372	31	429	287.6	-0.80	-1.63	-0.99
Max:	35,927	1,219	2,070	4,264	3.26	1.93	3.45
Median:	34,599	133	1,145	911	-0.45	-0.08	-0.29

dZn SF259			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.473)		update r2	0.47	0.473	r2:	0.006	0.022
r2 Q,[COC]:	0.47	[tCd]	Q		m:	0.0530	0.00034
slope, m:	-1.1	1,433	30.9		b:	-1571	-6.78
intercept, b:	1466.8	1,181	263.8				
N: 38		144	1219				
LnConc. = mLn(Q)+b (r2=0.649)		update r2	0.65	0.649			
r2 lnQ,ln[COC]:	0.65	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.35	7.55	3.43	1,907	31		
intercept, b:	8.75	6.81	5.58	904	264		
N: 38		6.27	7.11	531	1,219		

N= 38

	Sampling Date	Q Discharge	dZn Concentration	dZn Load	Ln Q	Ln dZn Conc.	Ln dZn Load	dZn SF259 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	14-May-91	920.2	453	2242.7	6.82	6.12	7.72	2.24	-1.58	1.19
MFG	1-Oct-91	50.8	1370	374.4	3.93	7.22	5.93	-0.73	0.41	-0.90
IDEQ	29-Oct-93	55.72	1600	479.6	4.02	7.38	6.17	-0.71	0.91	-0.78
IDEQ	2-Dec-93	72.21	1630	633.2	4.28	7.40	6.45	-0.65	0.97	-0.61
IDEQ	21-Dec-93	58.04	2000	624.5	4.06	7.60	6.44	-0.70	1.77	-0.62
IDEQ	21-Dec-93	55.86	2000	601.1	4.02	7.60	6.40	-0.71	1.77	-0.64
IDEQ	19-Jan-94	81.73	1430	628.8	4.40	7.27	6.44	-0.62	0.54	-0.61
IDEQ	17-Feb-94	57.25	1600	492.8	4.05	7.38	6.20	-0.71	0.91	-0.76
IDEQ	7-Mar-94	195.33	1360	1429.2	5.27	7.22	7.26	-0.23	0.39	0.28
IDEQ	23-Mar-94	176.74	1440	1369.2	5.17	7.27	7.22	-0.30	0.56	0.22
IDEQ	6-Apr-94	268.24	935	1349.3	5.59	6.84	7.21	0.02	-0.53	0.19
IDEQ	18-Apr-94	1219.37	650	4264.1	7.11	6.48	8.36	3.26	-1.15	3.45
IDEQ	3-May-94	343.76	641	1185.5	5.84	6.46	7.08	0.27	-1.17	0.01
IDEQ	20-May-94	369.97	609	1212.2	5.91	6.41	7.10	0.36	-1.24	0.04
IDEQ	8-Jun-94	201.01	871	941.9	5.30	6.77	6.85	-0.21	-0.67	-0.26
IDEQ	24-Jun-94	115.68	962	598.7	4.75	6.87	6.39	-0.51	-0.47	-0.64
IDEQ	23-Jul-94	65.61	1000	353.0	4.18	6.91	5.87	-0.68	-0.39	-0.92
IDEQ	16-Aug-94	73.21	1290	508.1	4.29	7.16	6.23	-0.65	0.24	-0.75
IDEQ	9-Sep-94	57.25	1720	529.8	4.05	7.45	6.27	-0.71	1.17	-0.72
IDEQ	5-Oct-94	30.9	1730	287.6	3.43	7.46	5.66	-0.80	1.19	-0.99
IDEQ	15-Nov-94	75.25	2050	829.9	4.32	7.63	6.72	-0.64	1.88	-0.39
IDEQ	14-Dec-94	84.02	2070	935.7	4.43	7.64	6.84	-0.61	1.93	-0.27
IDEQ	11-Jan-95	333.83	1220	2191.1	5.81	7.11	7.69	0.24	0.09	1.14
IDEQ	9-Feb-95	305.78	1150	1891.9	5.72	7.05	7.55	0.14	-0.07	0.80
IDEQ	8-Mar-95	238.9	1070	1375.3	5.48	6.98	7.23	-0.08	-0.24	0.22
IDEQ	23-Mar-95	577.77	1140	3543.6	6.36	7.04	8.17	1.07	-0.09	2.65
IDEQ	13-Apr-95	328.97	923	1633.6	5.80	6.83	7.40	0.22	-0.56	0.51
IDEQ	25-Apr-95	284.29	899	1375.0	5.65	6.80	7.23	0.07	-0.61	0.22
IDEQ	11-May-95	843.25	514	2331.9	6.74	6.24	7.75	1.98	-1.44	1.29
IDEQ	24-May-95	793.42	540	2305.0	6.68	6.29	7.74	1.81	-1.39	1.26
IDEQ	13-Jun-95	276.14	597	886.9	5.62	6.39	6.79	0.04	-1.26	-0.32
IDEQ	28-Jun-95	120.65	825	535.5	4.79	6.72	6.28	-0.49	-0.77	-0.72
IDEQ	12-Jul-95	73.21	959	377.7	4.29	6.87	5.93	-0.65	-0.48	-0.89
IDEQ	26-Jul-95	59.64	1120	359.4	4.09	7.02	5.88	-0.70	-0.13	-0.91
IDEQ	15-Aug-95	58.83	1320	417.8	4.07	7.19	6.03	-0.70	0.30	-0.85
IDEQ	14-Sep-95	53.5	1370	394.3	3.98	7.22	5.98	-0.72	0.41	-0.87
URS	6-Nov-97	145	1380	1076.5	4.98	7.23	6.98	-0.41	0.43	-0.11
URS	12-May-98	902	429	2081.8	6.80	6.06	7.64	2.18	-1.63	1.01

dZn

Concentration over time analysis

	dZn	SF259		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.024**	**-0.00015**
	Time	**Ln[COC]**	**[COC]**		
first:	14-May-91	7.18	1,309		
mid:	22-Sep-94	6.99	1,086		
last:	12-May-98	6.79	888		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

Load over time analysis

	dZn	SF259			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.014**	**0.00019**
	Time	**LnLoad**	**Load**		
first:	14-May-91	6.58	722		
mid:	22-Sep-94	6.81	911		
last:	12-May-98	7.07	1,173		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

max r2. 0.414 max r2: 0.970

Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.024	-0.00015	12.24	0.014	0.00019	0.24
0.138	-0.00039	20.59	0.063	0.00045	-8.69
0.144	-0.00046	22.81	0.031	0.00035	-5.30
0.130	-0.00044	22.15	0.022	0.00030	-3.50
0.115	-0.00041	21.34	0.018	0.00027	-2.55
0.093	-0.00037	19.69	0.014	0.00024	-1.45
0.070	-0.00031	17.78	0.009	0.00020	-0.03
0.059	-0.00029	17.00	0.006	0.00016	1.35
0.045	-0.00025	15.69	0.002	0.00009	3.77
0.036	-0.00023	14.88	0.004	0.00013	2.26
0.026	-0.00020	13.73	0.006	0.00018	0.76
0.029	-0.00021	14.25	0.010	0.00022	-0.85
0.049	-0.00027	16.44	0.040	0.00042	-7.75
0.079	-0.00035	18.97	0.049	0.00047	-9.61
0.126	-0.00043	22.04	0.060	0.00053	-11.79
0.150	-0.00048	23.69	0.064	0.00057	-12.95
0.166	-0.00052	25.03	0.055	0.00054	-11.87
0.180	-0.00055	26.23	0.035	0.00042	-7.81
0.172	-0.00055	26.13	0.023	0.00034	-5.14
0.145	-0.00050	24.36	0.014	0.00026	-2.32
0.117	-0.00044	22.26	0.001	0.00008	4.33
0.084	-0.00035	19.00	0.000	0.00004	5.68
0.052	-0.00024	15.32	0.000	0.00001	6.52
0.038	-0.00021	14.08	0.003	0.00012	2.87
0.028	-0.00018	12.99	0.009	0.00021	-0.33
0.021	-0.00015	12.15	0.014	0.00026	-2.16
0.012	-0.00012	10.79	0.056	0.00047	-9.60
0.009	-0.00011	10.42	0.089	0.00058	-13.69
0.008	-0.00010	10.12	0.127	0.00069	-17.62
0.035	-0.00020	13.64	0.281	0.00093	-26.16
0.103	-0.00031	17.89	0.723	0.00124	-37.25
0.237	-0.00045	22.68	0.923	0.00142	-43.45
0.335	-0.00055	26.16	0.970	0.00151	-46.88
0.414	-0.00064	29.68	0.967	0.00152	-47.28

update for EV, CV:

dZn **SF259**

LN Analysis **dZn**

Load

Load Data, EV=1170 lbs/day CV=0.761

		Load Data-based LN		
Avg:	**1,175**	u	ln tCd Load	tCd Load
SD:	**894**	3	8.9	7104
CV:	**0.76**	0	6.84	935
Min:	**287.6**	-3	4.81	123.0
Max:	**4,264**			
Median:	**911**			
		1,175	1170	
		0.76	0.761	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.966, EV=1200lbs/day CV=0.851; max r2=0.98**

r2 u,lnLoad:	0.966	u	lnLoad	Load		
slope, m:	1.355	3	9.03	8370		
intercept, b:	-9.238	0	6.82	914		
N:	38	-3	4.60	99.9		
E[Load]:	1200.7	Parameter Estimates			0.966	0.966
SD[Load]:	1022	from LN regression			1200.7	1200
CV[Load]:	0.85	update graph label			0.9	0.851
					max r2	
	dZn	N: 38			0.982	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					

update and rank for new data

5-Oct-94	**287.6**	1	0.0163	-2.136	5.662	0.966
23-Jul-94	**353.0**	2	0.0425	-1.723	5.866	0.973
26-Jul-95	**359.4**	3	0.0686	-1.486	5.884	0.979
1-Oct-91	**374.4**	4	0.0948	-1.312	5.925	0.981
12-Jul-95	**377.7**	5	0.1209	-1.170	5.934	0.982
14-Sep-95	**394.3**	6	0.1471	-1.049	5.977	0.981
15-Aug-95	**417.8**	7	0.1732	-0.942	6.035	0.980
29-Oct-93	**479.6**	8	0.1993	-0.844	6.173	0.978
17-Feb-94	**492.8**	9	0.2255	-0.754	6.200	0.977
16-Aug-94	**508.1**	10	0.2516	-0.669	6.231	0.975
9-Sep-94	**529.8**	11	0.2778	-0.589	6.272	0.973
28-Jun-95	**535.5**	12	0.3039	-0.513	6.283	0.971
24-Jun-94	**598.7**	13	0.3301	-0.440	6.395	0.969
21-Dec-93	**601.1**	14	0.3562	-0.369	6.399	0.966
21-Dec-93	**624.5**	15	0.3824	-0.299	6.437	0.964
19-Jan-94	**628.8**	16	0.4085	-0.231	6.444	0.962
2-Dec-93	**633.2**	17	0.4346	-0.165	6.451	0.964
15-Nov-94	**829.9**	18	0.4608	-0.098	6.721	0.975
13-Jun-95	**886.9**	19	0.4869	-0.033	6.788	0.973
14-Dec-94	**935.7**	20	0.5131	0.033	6.841	0.970
8-Jun-94	**941.9**	21	0.5392	0.098	6.848	0.968
6-Nov-97	**1076.5**	22	0.5654	0.165	6.982	0.967
3-May-94	**1185.5**	23	0.5915	0.231	7.078	0.964
20-May-94	**1212.2**	24	0.6176	0.299	7.100	0.960
6-Apr-94	**1349.3**	25	0.6438	0.369	7.207	0.955
23-Mar-94	**1369.2**	26	0.6699	0.440	7.222	0.953
25-Apr-95	**1375.0**	27	0.6961	0.513	7.226	0.948
8-Mar-95	**1375.3**	28	0.7222	0.589	7.226	0.939
7-Mar-94	**1429.2**	29	0.7484	0.669	7.265	0.930
13-Apr-95	**1633.6**	30	0.7745	0.754	7.399	0.925
9-Feb-95	**1891.9**	31	0.8007	0.844	7.545	0.909
12-May-98	**2081.8**	32	0.8268	0.942	7.641	0.893
11-Jan-95	**2191.1**	33	0.8529	1.049	7.692	0.893
14-May-91	**2242.7**	34	0.8791	1.170	7.715	0.903
24-May-95	**2305.0**	35	0.9052	1.312	7.743	
11-May-95	**2331.9**	36	0.9314	1.486	7.754	
23-Mar-95	**3543.6**	37	0.9575	1.723	8.173	
18-Apr-94	**4264.1**	38	0.9837	2.136	8.358	

		update for EV, CV:			
dZn		**SF259**		1,181	1180
LN Analysis		**dZn**		0.39	0.391
Concentration		**Conc. Data, EV=1180 ug/L CV=0.391**			
Avg:	**1,181**	**Data-based LN**			
SD:	**462**	u	ln[tCd]	[tCd]	
CV:	**0.39**	3	8.1	3411	
Min:	**429**	0	7.00	1100	
Max:	**2,070**	-3	5.87	354	
Median:	**1,145**				

					0.961	0.961
	u=mLn(Conc.)+b:				1202.3	1200
update for r2, EV, CV:	**r2=0.961, EV=1200 ug/L CV=0.481; max r2=0.96**				0.481	0.481
	r2 u,lnConc:	0.961	u	lnConc.	Conc.	
	slope, m:	2.191	3	8.36	4261	
	intercept, b:	-15.309	0	6.99	1083	
	N:	38	-3	5.62	275	
	E[Conc]:	1202.3	Parameter Estimates			
	SD[Conc]:	579	from LN regression			
	CV[Conc]:	0.48	update graph label			

	dZn	N: 38				max r2 0.964
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	**ug/L Ranked**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
update and rank for new data						
12-May-98	429	1	0.0163	-2.136	6.061	0.961
14-May-91	453	2	0.0425	-1.723	6.116	0.955
11-May-95	514	3	0.0686	-1.486	6.242	0.951
24-May-95	540	4	0.0948	-1.312	6.292	0.947
13-Jun-95	597	5	0.1209	-1.170	6.392	0.945
20-May-94	609	6	0.1471	-1.049	6.412	0.943
3-May-94	641	7	0.1732	-0.942	6.463	0.944
18-Apr-94	650	8	0.1993	-0.844	6.477	0.949
28-Jun-95	825	9	0.2255	-0.754	6.715	0.964
8-Jun-94	871	10	0.2516	-0.669	6.770	0.962
25-Apr-95	899	11	0.2778	-0.589	6.801	0.959
13-Apr-95	923	12	0.3039	-0.513	6.828	0.955
6-Apr-94	935	13	0.3301	-0.440	6.841	0.952
12-Jul-95	959	14	0.3562	-0.369	6.866	0.949
24-Jun-94	962	15	0.3824	-0.299	6.869	0.946
23-Jul-94	1000	16	0.4085	-0.231	6.908	0.947
8-Mar-95	1070	17	0.4346	-0.165	6.975	0.949
26-Jul-95	1120	18	0.4608	-0.098	7.021	0.946
23-Mar-95	1140	19	0.4869	-0.033	7.039	0.942
9-Feb-95	1150	20	0.5131	0.033	7.048	0.938
11-Jan-95	1220	21	0.5392	0.098	7.107	0.937
16-Aug-94	1290	22	0.5654	0.165	7.162	0.931
15-Aug-95	1320	23	0.5915	0.231	7.185	0.923
7-Mar-94	1360	24	0.6176	0.299	7.215	0.914
1-Oct-91	1370	25	0.6438	0.369	7.223	0.905
14-Sep-95	1370	26	0.6699	0.440	7.223	0.892
6-Nov-97	1380	27	0.6961	0.513	7.230	0.876
19-Jan-94	1430	28	0.7222	0.589	7.265	0.859
23-Mar-94	1440	29	0.7484	0.669	7.272	0.837
17-Feb-94	1600	30	0.7745	0.754	7.378	0.827
29-Oct-93	1600	31	0.8007	0.844	7.378	0.791
2-Dec-93	1630	32	0.8268	0.942	7.396	0.737
9-Sep-94	1720	33	0.8529	1.049	7.450	0.661
5-Oct-94	1730	34	0.8791	1.170	7.456	0.530
21-Dec-93	2000	35	0.9052	1.312	7.601	
21-Dec-93	2000	36	0.9314	1.486	7.601	
15-Nov-94	2050	37	0.9575	1.723	7.626	
14-Dec-94	2070	38	0.9837	2.136	7.635	

update for EV, CV:

dZn		**SF259**			264	264
LN Analysis		**dZn**			1.11	1.11
Discharge, Q		**Q Data, EV=264 cfs CV=1.11**				
Avg:	**264**	**Q Data-based LN**				
SD:	**293**	u	lnQ	Q		
CV:	**1.11**	3	7.9	2598		
Min:	**31**	0	5.17	177		
Max:	**1,219**	-3	2.48	12		
Median:	**133**					
					0.928	0.928
					279.6	280
		u=mLn(Q)+b:			1.47	1.47

update for r2, EV, CV: **r2=0.928, EV=280 cfs CV=1.47; max r2=0.97**

r2 u,lnQ:	0.928	u	lnQ	Q
slope, m:	0.930	3	8.28	3945
intercept, b:	-4.703	0	5.06	157
N:	38	-3	1.83	6
E[Q]:	279.6	Parameter Estimates		
SD[Q]:	412	from LN regression		
CV[Q]:	1.47	update graph label		

N: 38

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.966 r2 forward
update and rank for new data						
5-Oct-94	30.9	1	0.0163	-2.136	3.431	0.928
1-Oct-91	50.8	2	0.0425	-1.723	3.928	0.931
14-Sep-95	53.5	3	0.0686	-1.486	3.980	0.944
29-Oct-93	55.72	4	0.0948	-1.312	4.020	0.953
21-Dec-93	55.86	5	0.1209	-1.170	4.023	0.959
9-Sep-94	57.25	6	0.1471	-1.049	4.047	0.963
17-Feb-94	57.25	7	0.1732	-0.942	4.047	0.966
21-Dec-93	58.04	8	0.1993	-0.844	4.061	0.966
15-Aug-95	58.83	9	0.2255	-0.754	4.075	0.965
26-Jul-95	59.64	10	0.2516	-0.669	4.088	0.963
23-Jul-94	65.61	11	0.2778	-0.589	4.184	0.960
2-Dec-93	72.21	12	0.3039	-0.513	4.280	0.957
12-Jul-95	73.21	13	0.3301	-0.440	4.293	0.953
16-Aug-94	73.21	14	0.3562	-0.369	4.293	0.949
15-Nov-94	75.25	15	0.3824	-0.299	4.321	0.945
19-Jan-94	81.73	16	0.4085	-0.231	4.403	0.943
14-Dec-94	84.02	17	0.4346	-0.165	4.431	0.942
24-Jun-94	115.68	18	0.4608	-0.098	4.751	0.948
28-Jun-95	120.65	19	0.4869	-0.033	4.793	0.945
6-Nov-97	145	20	0.5131	0.033	4.977	0.945
23-Mar-94	176.74	21	0.5392	0.098	5.175	0.941
7-Mar-94	195.33	22	0.5654	0.165	5.275	0.935
8-Jun-94	201.01	23	0.5915	0.231	5.303	0.927
8-Mar-95	238.9	24	0.6176	0.299	5.476	0.918
6-Apr-94	268.24	25	0.6438	0.369	5.592	0.909
13-Jun-95	276.14	26	0.6699	0.440	5.621	0.900
25-Apr-95	284.29	27	0.6961	0.513	5.650	0.888
9-Feb-95	305.78	28	0.7222	0.589	5.723	0.870
13-Apr-95	328.97	29	0.7484	0.669	5.796	0.848
11-Jan-95	333.83	30	0.7745	0.754	5.811	0.819
3-May-94	343.76	31	0.8007	0.844	5.840	0.779
20-May-94	369.97	32	0.8268	0.942	5.913	0.738
23-Mar-95	577.77	33	0.8529	1.049	6.359	0.845
24-May-95	793.42	34	0.8791	1.170	6.676	0.937
11-May-95	843.25	35	0.9052	1.312	6.737	
12-May-98	902	36	0.9314	1.486	6.805	
14-May-91	920.2	37	0.9575	1.723	6.825	
18-Apr-94	1219.37	38	0.9837	2.136	7.106	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF259	Date:	19-Jun-00
Chemical:	tCd	Analyst:	J.MacLachlan
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,618	264	8	8	0.00	0.00	0.00
SD:	437	293	3	7	1.00	1.00	1.00
CV:	0.01	1.11	0.33	0.88			
Min:	33,372	31	3	1.8	-0.80	-2.03	-0.89
Max:	35,927	1,219	14	38	3.26	2.29	3.97
Median:	34,599	133	8	7	-0.45	0.00	-0.26

tCd	SF259		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.458)		update r2	0.46	0.458	r2:	0.006	0.022
r2 Q,[COC]:	0.46	[tCd]	Q		m:	0.0530	0.00034
slope, m:	-0.01	9	30.9		b:	-1571	-6.78
intercept, b:	9.6	8	263.8				
N: 38		2	1219				
LnConc. = mLn{Q}+b (r2=0.609)		update r2	0.61	0.609			
r2 lnQ,ln[COC]:	0.61	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.29	2.49	3.43	12	31		
intercept, b:	3.49	1.86	5.58	6	264		
N: 38		1.41	7.11	4	1,219		

N= 38

	Sampling Date	Q Discharge	tCd Concentration	tCd Load	Ln Q	Ln tCd Conc.	Ln tCd Load	for graph 0 tCd SF259 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	14-May-91	920.2	2.6	12.9	6.82	0.96	2.56	2.24	-2.03	0.59
MFG	1-Oct-91	50.8	12.5	3.4	3.93	2.53	1.23	-0.73	1.72	-0.68
IDEQ	29-Oct-93	55.72	9.1	2.7	4.02	2.21	1.00	-0.71	0.43	-0.77
IDEQ	2-Dec-93	72.21	8.7	3.4	4.28	2.16	1.22	-0.65	0.28	-0.69
IDEQ	21-Dec-93	58.04	11.8	3.7	4.06	2.47	1.30	-0.70	1.46	-0.64
IDEQ	21-Dec-93	55.86	11.8	3.5	4.02	2.47	1.27	-0.71	1.46	-0.66
IDEQ	19-Jan-94	81.73	9.7	4.3	4.40	2.27	1.45	-0.62	0.66	-0.57
IDEQ	17-Feb-94	57.25	9.3	2.9	4.05	2.23	1.05	-0.71	0.51	-0.75
IDEQ	7-Mar-94	195.33	7	7.4	5.27	1.95	2.00	-0.23	-0.36	-0.15
IDEQ	23-Mar-94	176.74	8.3	7.9	5.17	2.12	2.07	-0.30	0.13	-0.08
IDEQ	6-Apr-94	268.24	8.3	12.0	5.59	2.12	2.48	0.02	0.13	0.47
IDEQ	18-Apr-94	1219.37	5.8	38.0	7.11	1.76	3.64	3.26	-0.82	3.97
IDEQ	3-May-94	343.76	4.5	8.3	5.84	1.50	2.12	0.27	-1.31	-0.02
IDEQ	20-May-94	369.97	4.4	8.8	5.91	1.48	2.17	0.36	-1.35	0.04
IDEQ	8-Jun-94	201.01	6.2	6.7	5.30	1.82	1.90	-0.21	-0.67	-0.24
IDEQ	24-Jun-94	115.68	6.8	4.2	4.75	1.92	1.44	-0.51	-0.44	-0.57
IDEQ	23-Jul-94	65.61	7.6	2.7	4.18	2.03	0.99	-0.68	-0.14	-0.78
IDEQ	16-Aug-94	73.21	9.6	3.8	4.29	2.26	1.33	-0.65	0.62	-0.63
IDEQ	9-Sep-94	57.25	10.6	3.3	4.05	2.36	1.18	-0.71	1.00	-0.70
IDEQ	5-Oct-94	30.9	11	1.8	3.43	2.40	0.60	-0.80	1.15	-0.89
IDEQ	15-Nov-94	75.25	12	4.9	4.32	2.48	1.58	-0.64	1.53	-0.49
IDEQ	14-Dec-94	84.02	14	6.3	4.43	2.64	1.85	-0.61	2.29	-0.29
IDEQ	11-Jan-95	333.83	9.3	16.7	5.81	2.23	2.82	0.24	0.51	1.11
IDEQ	9-Feb-95	305.78	7.6	12.5	5.72	2.03	2.53	0.14	-0.14	0.54
IDEQ	8-Mar-95	238.9	7.3	9.4	5.48	1.99	2.24	-0.08	-0.25	0.12
IDEQ	23-Mar-95	577.77	7.6	23.6	6.36	2.03	3.16	1.07	-0.14	2.04
IDEQ	13-Apr-95	328.97	7	12.4	5.80	1.95	2.52	0.22	-0.36	0.53
IDEQ	25-Apr-95	284.29	6.5	9.9	5.65	1.87	2.30	0.07	-0.55	0.20
IDEQ	11-May-95	843.25	5.3	24.0	6.74	1.67	3.18	1.98	-1.01	2.09
IDEQ	24-May-95	793.42	3.9	16.6	6.68	1.36	2.81	1.81	-1.54	1.10
IDEQ	13-Jun-95	276.14	4.8	7.1	5.62	1.57	1.96	0.04	-1.20	-0.18
IDEQ	28-Jun-95	120.65	5.8	3.8	4.79	1.76	1.33	-0.49	-0.82	-0.63
IDEQ	12-Jul-95	73.21	7	2.8	4.29	1.95	1.01	-0.65	-0.36	-0.77
IDEQ	26-Jul-95	59.64	8.4	2.7	4.09	2.13	0.99	-0.70	0.17	-0.78
IDEQ	15-Aug-95	58.83	8.5	2.7	4.07	2.14	0.99	-0.70	0.21	-0.78
IDEQ	14-Sep-95	53.5	9.9	2.8	3.98	2.29	1.05	-0.72	0.74	-0.76
URS	6-Nov-97	145	8.7	6.8	4.98	2.16	1.91	-0.41	0.28	-0.23
URS	12-May-98	902	3.2	15.5	6.80	1.16	2.74	2.18	-1.80	0.95

tCd

Concentration over time analysis

	tCd	SF259		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.014**	**-0.00010**
	Time	**Ln[COC]**	**[COC]**		
first:	14-May-91	2.13	8		
mid:	22-Sep-94	2.01	7		
last:	12-May-98	1.88	7		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

Load over time analysis

	tCd	SF259			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.020**	**0.00024**
	Time	**LnLoad**	**Load**		
first:	14-May-91	1.54	5		
mid:	22-Sep-94	1.84	6		
last:	12-May-98	2.16	9		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

	max r2:	0.511		max r2:	0.941	
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.014	-0.00010	5.46	0.020	0.00024	-6.54
	0.181	-0.00037	14.74	0.061	0.00047	-14.54
	0.133	-0.00035	14.10	0.045	0.00046	-14.01
	0.125	-0.00034	13.96	0.033	0.00039	-11.70
	0.121	-0.00034	13.93	0.024	0.00034	-9.97
	0.100	-0.00031	12.77	0.018	0.00030	-8.36
	0.079	-0.00027	11.44	0.011	0.00024	-6.37
	0.067	-0.00025	10.74	0.008	0.00020	-4.90
	0.057	-0.00023	10.13	0.002	0.00011	-1.79
	0.060	-0.00025	10.55	0.003	0.00012	-2.07
	0.055	-0.00024	10.31	0.003	0.00013	-2.66
	0.050	-0.00023	10.04	0.007	0.00020	-5.07
	0.064	-0.00027	11.29	0.037	0.00042	-12.90
	0.107	-0.00034	13.86	0.045	0.00048	-14.72
	0.175	-0.00043	16.86	0.056	0.00054	-16.98
	0.209	-0.00047	18.49	0.060	0.00057	-18.15
	0.233	-0.00051	19.85	0.052	0.00054	-17.05
	0.244	-0.00054	20.68	0.034	0.00044	-13.35
	0.228	-0.00052	20.30	0.024	0.00037	-10.97
	0.204	-0.00049	19.24	0.013	0.00027	-7.43
	0.175	-0.00045	17.78	0.001	0.00006	-0.15
	0.144	-0.00039	15.64	0.000	-0.00001	2.32
	0.110	-0.00030	12.40	0.000	-0.00004	3.61
	0.087	-0.00026	10.99	0.001	0.00006	-0.21
	0.076	-0.00025	10.48	0.004	0.00014	-2.84
	0.068	-0.00024	10.09	0.006	0.00018	-4.21
	0.057	-0.00022	9.39	0.030	0.00037	-10.99
	0.050	-0.00021	9.03	0.052	0.00048	-15.09
	0.048	-0.00021	9.03	0.076	0.00058	-18.71
	0.067	-0.00025	10.44	0.245	0.00088	-29.36
	0.174	-0.00036	14.70	0.644	0.00119	-40.43
	0.311	-0.00047	18.55	0.897	0.00139	-47.58
	0.436	-0.00057	22.09	0.941	0.00149	-50.94
	0.511	-0.00066	25.18	0.938	0.00151	-51.78

update for EV, CV:

tCd
LN Analysis
Load

SF259
tCd
Load Data, EV=8.48 lbs/day CV=0.877
Load Data-based LN

		u	ln tCd Load	tCd Load
Avg:	8	3	4.1	61
SD:	7	0	1.85	6
CV:	0.88	-3	-0.41	0.7
Min:	1.8			
Max:	38			
Median:	7			

8	8.48
0.88	0.877

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.952, EV=8.62lbs/day CV=0.933; max r2=0.99**

		u	lnLoad	Load		
r2 u,lnLoad:	0.952	3	4.21	68		
slope, m:	1.264	0	1.84	6		
intercept, b:	-2.328	-3	-0.53	0.6		
N:	38				0.952	0.952
E[Load]:	8.6	Parameter Estimates			8.6	8.62
SD[Load]:	8	from LN regression			0.9	0.933
CV[Load]:	0.93	update graph label			max r2	

Date	tCd Load lbs/day Ranked	N: 38 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	0.989 r2 forward
update and rank for new data						
5-Oct-94	1.8	1	0.0163	-2.136	0.604	0.952
23-Jul-94	2.7	2	0.0425	-1.723	0.987	0.956
15-Aug-95	2.7	3	0.0686	-1.486	0.990	0.970
26-Jul-95	2.7	4	0.0948	-1.312	0.991	0.978
29-Oct-93	2.7	5	0.1209	-1.170	1.004	0.982
12-Jul-95	2.8	6	0.1471	-1.049	1.014	0.985
14-Sep-95	2.8	7	0.1732	-0.942	1.047	0.986
17-Feb-94	2.9	8	0.1993	-0.844	1.052	0.986
9-Sep-94	3.3	9	0.2255	-0.754	1.183	0.985
2-Dec-93	3.4	10	0.2516	-0.669	1.218	0.984
1-Oct-91	3.4	11	0.2778	-0.589	1.229	0.984
21-Dec-93	3.5	12	0.3039	-0.513	1.266	0.983
21-Dec-93	3.7	13	0.3301	-0.440	1.304	0.981
28-Jun-95	3.8	14	0.3562	-0.369	1.326	0.979
16-Aug-94	3.8	15	0.3824	-0.299	1.330	0.978
24-Jun-94	4.2	16	0.4085	-0.231	1.443	0.980
19-Jan-94	4.3	17	0.4346	-0.165	1.450	0.980
15-Nov-94	4.9	18	0.4608	-0.098	1.581	0.985
14-Dec-94	6.3	19	0.4869	-0.033	1.845	0.989
8-Jun-94	6.7	20	0.5131	0.033	1.903	0.988
6-Nov-97	6.8	21	0.5392	0.098	1.915	0.987
13-Jun-95	7.1	22	0.5654	0.165	1.964	0.986
7-Mar-94	7.4	23	0.5915	0.231	1.996	0.985
23-Mar-94	7.9	24	0.6176	0.299	2.066	0.983
3-May-94	8.3	25	0.6438	0.369	2.119	0.980
20-May-94	8.8	26	0.6699	0.440	2.170	0.978
8-Mar-95	9.4	27	0.6961	0.513	2.239	0.975
25-Apr-95	9.9	28	0.7222	0.589	2.297	0.971
6-Apr-94	12.0	29	0.7484	0.669	2.483	0.966
13-Apr-95	12.4	30	0.7745	0.754	2.517	0.968
9-Feb-95	12.5	31	0.8007	0.844	2.526	0.967
14-May-91	12.9	32	0.8268	0.942	2.555	0.960
12-May-98	15.5	33	0.8529	1.049	2.743	0.948
24-May-95	16.6	34	0.8791	1.170	2.812	0.941
11-Jan-95	16.7	35	0.9052	1.312	2.816	
23-Mar-95	23.6	36	0.9314	1.486	3.162	
11-May-95	24.0	37	0.9575	1.723	3.180	
18-Apr-94	38.0	38	0.9837	2.136	3.639	

update for EV, CV:

tCd		SF259	8	7.96
LN Analysis		tCd	0.33	0.331

Concentration — **Conc. Data, EV=7.96 ug/L CV=0.331**

		Data-based LN		
Avg:	8	u	ln[tCd]	[tCd]
SD:	3	3	3.0	20
CV:	0.33	3	3.0	20
Min:	3	0	2.02	8
Max:	14	-3	1.05	3
Median:	8			

				0.952	0.952
u=mLn(Conc.)+b:				8.1	8.08
update for r2, EV, CV:	r2=0.952, EV=8.08 ug/L CV=0.414; max r2=0.99			0.414	0.414
r2 u,lnConc:	0.952	u	lnConc.	Conc.	
slope, m:	2.512	3	3.21	25	
intercept, b:	-5.050	0	2.01	7	
N:	38	-3	0.82	2	
E[Conc]:	8.1	Parameter Estimates			
SD[Conc]:	3	from LN regression			
CV[Conc]:	0.41	update graph label			

	tCd	N: 38				max r2 0.986
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
14-May-91	2.6	1	0.0163	-2.136	0.956	0.952
12-May-98	3.2	2	0.0425	-1.723	1.163	0.955
24-May-95	3.9	3	0.0686	-1.486	1.361	0.963
20-May-94	4.4	4	0.0948	-1.312	1.482	0.966
3-May-94	4.5	5	0.1209	-1.170	1.504	0.967
13-Jun-95	4.8	6	0.1471	-1.049	1.569	0.972
11-May-95	5.3	7	0.1732	-0.942	1.668	0.980
18-Apr-94	5.8	8	0.1993	-0.844	1.758	0.983
28-Jun-95	5.8	9	0.2255	-0.754	1.758	0.983
8-Jun-94	6.2	10	0.2516	-0.669	1.825	0.986
25-Apr-95	6.5	11	0.2778	-0.589	1.872	0.986
24-Jun-94	6.8	12	0.3039	-0.513	1.917	0.985
7-Mar-94	7	13	0.3301	-0.440	1.946	0.984
12-Jul-95	7	14	0.3562	-0.369	1.946	0.983
13-Apr-95	7	15	0.3824	-0.299	1.946	0.981
8-Mar-95	7.3	16	0.4085	-0.231	1.988	0.982
9-Feb-95	7.6	17	0.4346	-0.165	2.028	0.980
23-Jul-94	7.6	18	0.4608	-0.098	2.028	0.978
23-Mar-95	7.6	19	0.4869	-0.033	2.028	0.977
6-Apr-94	8.3	20	0.5131	0.033	2.116	0.979
23-Mar-94	8.3	21	0.5392	0.098	2.116	0.978
26-Jul-95	8.4	22	0.5654	0.165	2.128	0.976
15-Aug-95	8.5	23	0.5915	0.231	2.140	0.973
6-Nov-97	8.7	24	0.6176	0.299	2.163	0.969
2-Dec-93	8.7	25	0.6438	0.369	2.163	0.965
29-Oct-93	9.1	26	0.6699	0.440	2.208	0.962
11-Jan-95	9.3	27	0.6961	0.513	2.230	0.957
17-Feb-94	9.3	28	0.7222	0.589	2.230	0.950
16-Aug-94	9.6	29	0.7484	0.669	2.262	0.942
19-Jan-94	9.7	30	0.7745	0.754	2.272	0.932
14-Sep-95	9.9	31	0.8007	0.844	2.293	0.926
9-Sep-94	10.6	32	0.8268	0.942	2.361	0.947
5-Oct-94	11	33	0.8529	1.049	2.398	0.940
21-Dec-93	11.8	34	0.8791	1.170	2.468	0.924
21-Dec-93	11.8	35	0.9052	1.312	2.468	
15-Nov-94	12	36	0.9314	1.486	2.485	
1-Oct-91	12.5	37	0.9575	1.723	2.526	
14-Dec-94	14	38	0.9837	2.136	2.639	

update for EV, CV:

tCd		SF259			264	264
LN Analysis		tCd			1.11	1.11
Discharge, Q		Q Data, EV=264 cfs CV=1.11				
Avg:	264	Q Data-based LN				
SD:	293	u	lnQ	Q		
CV:	1.11	3	7.9	2598		
Min:	31	0	5.17	177		
Max:	1,219	-3	2.48	12		
Median:	133					
					0.928	0.928
					279.6	280
	u=mLn(Q)+b:				1.47	1.47

update for r2, EV, CV: **r2=0.928, EV=280 cfs CV=1.47; max r2=0.97**

r2 u,lnQ:	0.928	u	lnQ	Q
slope, m:	0.930	3	8.28	3945
intercept, b:	-4.703	0	5.06	157
N:	38	-3	1.83	6
E[Q]:	279.6	Parameter Estimates		
SD[Q]:	412	from LN regression		
CV[Q]:	1.47	update graph label		

	Q	N: 38				max r2 0.966
Date	Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	La x-axis	r2 forward
update and rank for new data						
5-Oct-94	30.9	1	0.0163	-2.136	3.431	0.928
1-Oct-91	50.8	2	0.0425	-1.723	3.928	0.931
14-Sep-95	53.5	3	0.0686	-1.486	3.980	0.944
29-Oct-93	55.72	4	0.0948	-1.312	4.020	0.953
21-Dec-93	55.86	5	0.1209	-1.170	4.023	0.959
9-Sep-94	57.25	6	0.1471	-1.049	4.047	0.963
17-Feb-94	57.25	7	0.1732	-0.942	4.047	0.966
21-Dec-93	58.04	8	0.1993	-0.844	4.061	0.966
15-Aug-95	58.83	9	0.2255	-0.754	4.075	0.965
26-Jul-95	59.64	10	0.2516	-0.669	4.088	0.963
23-Jul-94	65.61	11	0.2778	-0.589	4.184	0.960
2-Dec-93	72.21	12	0.3039	-0.513	4.280	0.957
12-Jul-95	73.21	13	0.3301	-0.440	4.293	0.953
16-Aug-94	73.21	14	0.3562	-0.369	4.293	0.949
15-Nov-94	75.25	15	0.3824	-0.299	4.321	0.945
19-Jan-94	81.73	16	0.4085	-0.231	4.403	0.943
14-Dec-94	84.02	17	0.4346	-0.165	4.431	0.942
24-Jun-94	115.68	18	0.4608	-0.098	4.751	0.948
28-Jun-95	120.65	19	0.4869	-0.033	4.793	0.945
6-Nov-97	145	20	0.5131	0.033	4.977	0.945
23-Mar-94	176.74	21	0.5392	0.098	5.175	0.941
7-Mar-94	195.33	22	0.5654	0.165	5.275	0.935
8-Jun-94	201.01	23	0.5915	0.231	5.303	0.927
8-Mar-95	238.9	24	0.6176	0.299	5.476	0.918
6-Apr-94	268.24	25	0.6438	0.369	5.592	0.909
13-Jun-95	276.14	26	0.6699	0.440	5.621	0.900
25-Apr-95	284.29	27	0.6961	0.513	5.650	0.888
9-Feb-95	305.78	28	0.7222	0.589	5.723	0.870
13-Apr-95	328.97	29	0.7484	0.669	5.796	0.848
11-Jan-95	333.83	30	0.7745	0.754	5.811	0.819
3-May-94	343.76	31	0.8007	0.844	5.840	0.779
20-May-94	369.97	32	0.8268	0.942	5.913	0.738
23-Mar-95	577.77	33	0.8529	1.049	6.359	0.845
24-May-95	793.42	34	0.8791	1.170	6.676	0.937
11-May-95	843.25	35	0.9052	1.312	6.737	
12-May-98	902	36	0.9314	1.486	6.805	
14-May-91	920.2	37	0.9575	1.723	6.825	
18-Apr-94	1219.37	38	0.9837	2.136	7.106	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.		see comment
Station: SF259	Date:	19-Jun-00
Chemical: tPb	Analyst:	J.MacLachlan
Notes:		
Input Discharge and Concentration Data below (in red)		

	Date	Discharge	Concentration	Load			
Avg:	34,618	264	26	68	0.00	0.00	0.00
SD:	437	293	32	227	1.00	1.00	1.00
CV:	0.01	1.11	1.26	3.35			
Min:	33,372	31	14	2.3	-0.80	-0.36	-0.29
Max:	35,927	1,219	217	1,424	3.26	5.91	5.96
Median:	34,599	133	18	15	-0.45	-0.24	-0.23

tPb SF259			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.383)		update r2	0.38	0.383	r2:	0.006	0.022
r2 Q,[COC]:	0.38	[tCd]	Q		m:	0.0530	0.00034
slope, m:	0.1	10	30.9		b:	-1571	-6.78
intercept, b:	7.6	26	263.8				
N: 38		91	1219				
LnConc. = mLn(Q)+b (r2=0.303)		update r2	0.30	0.303			
r2 lnQ,ln[COC]:	0.30	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	0.26	2.60	3.43	14	31		
intercept, b:	1.70	3.17	5.58	24	264		
N: 38		3.58	7.11	36	1,219		

N= 38

	Sampling Date	Q Discharge cfs	tPb Concentration ug/L	tPb Load lbs/day	Ln Q	Ln tPb Conc.	Ln tPb Load	for graph 0 tPb SF259 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data										
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	14-May-91	920.2	34	168.3	6.82	3.53	5.13	2.24	0.26	0.44
MFG	1-Oct-91	50.8	20	5.5	3.93	3.00	1.70	-0.73	-0.17	-0.27
IDEQ	29-Oct-93	55.72	14	4.2	4.02	2.64	1.43	-0.71	-0.36	-0.28
IDEQ	2-Dec-93	72.21	26	10.1	4.28	3.26	2.31	-0.65	0.01	-0.25
IDEQ	21-Dec-93	58.04	17	5.3	4.06	2.83	1.67	-0.70	-0.27	-0.28
IDEQ	21-Dec-93	55.86	17	5.1	4.02	2.83	1.63	-0.71	-0.27	-0.28
IDEQ	19-Jan-94	81.73	16	7.0	4.40	2.77	1.95	-0.62	-0.30	-0.27
IDEQ	17-Feb-94	57.25	16	4.9	4.05	2.77	1.59	-0.71	-0.30	-0.28
IDEQ	7-Mar-94	195.33	22	23.1	5.27	3.09	3.14	-0.23	-0.11	-0.20
IDEQ	23-Mar-94	176.74	21	20.0	5.17	3.04	2.99	-0.30	-0.14	-0.21
IDEQ	6-Apr-94	268.24	24	34.6	5.59	3.18	3.54	0.02	-0.05	-0.15
IDEQ	18-Apr-94	1219.37	217	1423.6	7.11	5.38	7.26	3.26	5.91	5.96
IDEQ	3-May-94	343.76	18	33.3	5.84	2.89	3.51	0.27	-0.24	-0.15
IDEQ	20-May-94	369.97	18	35.8	5.91	2.89	3.58	0.36	-0.24	-0.14
IDEQ	8-Jun-94	201.01	19	20.5	5.30	2.94	3.02	-0.21	-0.21	-0.21
IDEQ	24-Jun-94	115.68	17	10.6	4.75	2.83	2.36	-0.51	-0.27	-0.25
IDEQ	23-Jul-94	65.61	23	8.1	4.18	3.14	2.09	-0.68	-0.08	-0.26
IDEQ	16-Aug-94	73.21	21	8.3	4.29	3.04	2.11	-0.65	-0.14	-0.26
IDEQ	9-Sep-94	57.25	14	4.3	4.05	2.64	1.46	-0.71	-0.36	-0.28
IDEQ	5-Oct-94	30.9	14	2.3	3.43	2.64	0.84	-0.80	-0.36	-0.29
IDEQ	15-Nov-94	75.25	17	6.9	4.32	2.83	1.93	-0.64	-0.27	-0.27
IDEQ	14-Dec-94	84.02	17	7.7	4.43	2.83	2.04	-0.61	-0.27	-0.27
IDEQ	11-Jan-95	333.83	47	84.4	5.81	3.85	4.44	0.24	0.66	0.07
IDEQ	9-Feb-95	305.78	16	26.3	5.72	2.77	3.27	0.14	-0.30	-0.18
IDEQ	8-Mar-95	238.9	15	19.3	5.48	2.71	2.96	-0.08	-0.33	-0.21
IDEQ	23-Mar-95	577.77	26	80.8	6.36	3.26	4.39	1.07	0.01	0.06
IDEQ	13-Apr-95	328.97	20	35.4	5.80	3.00	3.57	0.22	-0.17	-0.14
IDEQ	25-Apr-95	284.29	18	27.5	5.65	2.89	3.32	0.07	-0.24	-0.18
IDEQ	11-May-95	843.25	50	226.8	6.74	3.91	5.42	1.98	0.75	0.70
IDEQ	24-May-95	793.42	16	68.3	6.68	2.77	4.22	1.81	-0.30	0.00
IDEQ	13-Jun-95	276.14	21	31.2	5.62	3.04	3.44	0.04	-0.14	-0.16
IDEQ	28-Jun-95	120.65	18	11.7	4.79	2.89	2.46	-0.49	-0.24	-0.25
IDEQ	12-Jul-95	73.21	17	6.7	4.29	2.83	1.90	-0.65	-0.27	-0.27
IDEQ	26-Jul-95	59.64	18	5.8	4.09	2.89	1.75	-0.70	-0.24	-0.27
IDEQ	15-Aug-95	58.83	15	4.7	4.07	2.71	1.56	-0.70	-0.33	-0.28
IDEQ	14-Sep-95	53.5	16	4.6	3.98	2.77	1.53	-0.72	-0.30	-0.28
URS	6-Nov-97	145	22.3	17.4	4.98	3.10	2.86	-0.41	-0.10	-0.22
URS	12-May-98	902	17	82.5	6.80	2.83	4.41	2.18	-0.27	0.06

tPb

Concentration over time analysis

	tPb	SF259		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.017**	**-0.00014**
	Time	**Ln[COC]**	**[COC]**		
first:	14-May-91	3.21	25		
mid:	22-Sep-94	3.04	21		
last:	12-May-98	2.85	17		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

Load over time analysis

	tPb	SF259			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.004**	**0.00020**
	Time	**LnLoad**	**Load**		
first:	14-May-91	2.61	14		
mid:	22-Sep-94	2.86	17		
last:	12-May-98	3.13	23		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

max r2: 0.298 — **Forward time Regression on Ln Concentration(t)**

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.017	-0.00014	7.94
0.003	-0.00007	5.44
0.005	-0.00010	6.41
0.010	-0.00014	7.92
0.007	-0.00012	7.31
0.010	-0.00015	8.17
0.014	-0.00018	9.16
0.020	-0.00021	10.43
0.027	-0.00025	11.77
0.027	-0.00026	11.98
0.028	-0.00027	12.37
0.026	-0.00026	12.24
0.000	0.00002	2.33
0.000	0.00001	2.62
0.000	0.00000	2.94
0.000	0.00000	3.04
0.000	-0.00002	3.73
0.000	0.00000	2.90
0.000	0.00001	2.46
0.001	-0.00004	4.21
0.008	-0.00009	6.16
0.013	-0.00012	7.17
0.020	-0.00015	8.26
0.001	-0.00003	3.97
0.005	-0.00006	5.00
0.014	-0.00010	6.48
0.005	-0.00006	5.12
0.005	-0.00006	5.05
0.008	-0.00008	5.64
0.112	0.00010	-0.76
0.082	0.00009	-0.19
0.236	0.00013	-1.85
0.292	0.00015	-2.60
0.298	0.00017	-2.99

max r2: 0.886 — **Forward time Regression on Ln Load(t)**

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.004	0.00020	-4.07
0.054	0.00077	-23.84
0.036	0.00071	-21.70
0.025	0.00059	-17.74
0.022	0.00056	-16.58
0.014	0.00046	-12.97
0.008	0.00033	-8.65
0.004	0.00024	-5.22
0.001	0.00009	-0.14
0.001	0.00011	-0.64
0.001	0.00010	-0.60
0.002	0.00017	-2.86
0.045	0.00071	-21.86
0.059	0.00083	-25.96
0.078	0.00097	-30.89
0.087	0.00104	-33.60
0.081	0.00103	-33.17
0.070	0.00097	-31.13
0.059	0.00091	-28.81
0.039	0.00073	-22.47
0.015	0.00042	-11.76
0.006	0.00027	-6.15
0.001	0.00011	-0.53
0.008	0.00030	-7.23
0.010	0.00033	-8.32
0.008	0.00031	-7.82
0.025	0.00052	-15.26
0.036	0.00063	-19.06
0.044	0.00071	-22.10
0.210	0.00123	-40.57
0.482	0.00165	-55.33
0.773	0.00200	-67.98
0.871	0.00221	-75.63
0.886	0.00233	-79.96

update for EV, CV:

tPb
LN Analysis
SF259
tPb

Load

Load Data, EV=68 lbs/day CV=3.35

Avg:	**68**
SD:	**227**
CV:	**3.35**
Min:	**2.3**
Max:	**1,424**
Median:	**15**

Load Data-based LN

u	ln tCd Load	tCd Load
3	7.7	2237
0	2.97	19
-3	-1.78	0.2

68 68
3.35 3.35

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.908, EV=49.5lbs/day CV=2.64; max r2=0.96**

r2 u,lnLoad:	0.908	u	lnLoad	Load		
slope, m:	0.694	3	7.19	1324		
intercept, b:	-1.986	0	2.86	18		
N:	38	-3	-1.46	0.2		
E[Load]:	49.5	Parameter Estimates			0.908	0.908
SD[Load]:	131	from LN regression			49.5	49.5
CV[Load]:	2.64	update graph label			2.6	2.64
					max r2	
					0.956	

Date	tPb Load lbs/day Ranked	N: 38 i rank	i-3/8 / N+1/4 plotting points	n y-axis	Ln x-axis	r2 forward
update and rank for new data						
5-Oct-94	2.3	1	0.0163	-2.136	0.845	0.908
29-Oct-93	4.2	2	0.0425	-1.723	1.434	0.913
9-Sep-94	4.3	3	0.0686	-1.486	1.461	0.927
14-Sep-95	4.6	4	0.0948	-1.312	1.527	0.936
15-Aug-95	4.7	5	0.1209	-1.170	1.558	0.943
17-Feb-94	4.9	6	0.1471	-1.049	1.595	0.949
21-Dec-93	5.1	7	0.1732	-0.942	1.631	0.952
21-Dec-93	5.3	8	0.1993	-0.844	1.669	0.955
1-Oct-91	5.5	9	0.2255	-0.754	1.699	0.956
26-Jul-95	5.8	10	0.2516	-0.669	1.754	0.956
12-Jul-95	6.7	11	0.2778	-0.589	1.901	0.955
15-Nov-94	6.9	12	0.3039	-0.513	1.929	0.955
19-Jan-94	7.0	13	0.3301	-0.440	1.951	0.954
14-Dec-94	7.7	14	0.3562	-0.369	2.039	0.952
23-Jul-94	8.1	15	0.3824	-0.299	2.094	0.949
16-Aug-94	8.3	16	0.4085	-0.231	2.113	0.946
2-Dec-93	10.1	17	0.4346	-0.165	2.313	0.941
24-Jun-94	10.6	18	0.4608	-0.098	2.359	0.936
28-Jun-95	11.7	19	0.4869	-0.033	2.458	0.931
6-Nov-97	17.4	20	0.5131	0.033	2.856	0.924
8-Mar-95	19.3	21	0.5392	0.098	2.959	0.925
23-Mar-94	20.0	22	0.5654	0.165	2.994	0.927
8-Jun-94	20.5	23	0.5915	0.231	3.023	0.927
7-Mar-94	23.1	24	0.6176	0.299	3.141	0.926
9-Feb-95	26.3	25	0.6438	0.369	3.270	0.926
25-Apr-95	27.5	26	0.6699	0.440	3.315	0.928
13-Jun-95	31.2	27	0.6961	0.513	3.440	0.930
3-May-94	33.3	28	0.7222	0.589	3.505	0.933
6-Apr-94	34.6	29	0.7484	0.669	3.545	0.936
13-Apr-95	35.4	30	0.7745	0.754	3.567	0.935
20-May-94	35.8	31	0.8007	0.844	3.579	0.926
24-May-95	68.3	32	0.8268	0.942	4.224	0.906
23-Mar-95	80.8	33	0.8529	1.049	4.392	0.919
12-May-98	82.5	34	0.8791	1.170	4.413	0.948
11-Jan-95	84.4	35	0.9052	1.312	4.436	
14-May-91	168.3	36	0.9314	1.486	5.126	
11-May-95	226.8	37	0.9575	1.723	5.424	
18-Apr-94	1423.6	38	0.9837	2.136	7.261	

update for EV, CV:

tPb		SF259	26	25.6
LN Analysis		tPb	1.26	1.26

Concentration — Conc. Data, EV=25.6 ug/L CV=1.26

		Data-based LN		
Avg:	26	u	ln[tCd]	[tCd]
SD:	32	3	5.7	298
CV:	1.26	0	2.77	16
Min:	14	-3	-0.16	1
Max:	217			
Median:	18			

				0.607	0.607
u=mLn(Conc.)+b:				25.4	25.4
update for r2, EV, CV:	r2=0.607, EV=25.4 ug/L CV=0.709; max r2=0.92			0.709	0.709
	r2 u,lnConc:	0.607	u	lnConc.	Conc.
	slope, m:	1.567	3	4.95	141
	intercept, b:	-4.751	0	3.03	21
	N: 38		-3	1.12	3
	E[Conc]:	25.4	Parameter Estimates		
	SD[Conc]:	18	from LN regression		
	CV[Conc]:	0.71	update graph label		

Date	tPb Concentration ug/L Ranked	N: 38 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.920 r2 forward
update and rank for new data						
5-Oct-94	14	1	0.0163	-2.136	2.639	0.607
9-Sep-94	14	2	0.0425	-1.723	2.639	0.626
29-Oct-93	14	3	0.0686	-1.486	2.639	0.634
8-Mar-95	15	4	0.0948	-1.312	2.708	0.638
15-Aug-95	15	5	0.1209	-1.170	2.708	0.646
9-Feb-95	16	6	0.1471	-1.049	2.773	0.652
14-Sep-95	16	7	0.1732	-0.942	2.773	0.663
17-Feb-94	16	8	0.1993	-0.844	2.773	0.672
19-Jan-94	16	9	0.2255	-0.754	2.773	0.680
24-May-95	16	10	0.2516	-0.669	2.773	0.687
12-May-98	17	11	0.2778	-0.589	2.833	0.692
12-Jul-95	17	12	0.3039	-0.513	2.833	0.704
14-Dec-94	17	13	0.3301	-0.440	2.833	0.714
15-Nov-94	17	14	0.3562	-0.369	2.833	0.723
21-Dec-93	17	15	0.3824	-0.299	2.833	0.732
21-Dec-93	17	16	0.4085	-0.231	2.833	0.739
24-Jun-94	17	17	0.4346	-0.165	2.833	0.745
3-May-94	18	18	0.4608	-0.098	2.890	0.749
20-May-94	18	19	0.4869	-0.033	2.890	0.759
25-Apr-95	18	20	0.5131	0.033	2.890	0.768
26-Jul-95	18	21	0.5392	0.098	2.890	0.775
28-Jun-95	18	22	0.5654	0.165	2.890	0.780
8-Jun-94	19	23	0.5915	0.231	2.944	0.783
1-Oct-91	20	24	0.6176	0.299	2.996	0.790
13-Apr-95	20	25	0.6438	0.369	2.996	0.803
13-Jun-95	21	26	0.6699	0.440	3.045	0.814
16-Aug-94	21	27	0.6961	0.513	3.045	0.830
23-Mar-94	21	28	0.7222	0.589	3.045	0.845
7-Mar-94	22	29	0.7484	0.669	3.091	0.857
6-Nov-97	22.3	30	0.7745	0.754	3.105	0.873
23-Jul-94	23	31	0.8007	0.844	3.135	0.886
6-Apr-94	24	32	0.8268	0.942	3.178	0.898
2-Dec-93	26	33	0.8529	1.049	3.258	0.908
23-Mar-95	26	34	0.8791	1.170	3.258	0.920
14-May-91	34	35	0.9052	1.312	3.526	
11-Jan-95	47	36	0.9314	1.486	3.850	
11-May-95	50	37	0.9575	1.723	3.912	
18-Apr-94	217	38	0.9837	2.136	5.380	

update for EV, CV:

tPb		**SF259**			264	264
LN Analysis		**tPb**			1.11	1.11
Discharge, Q		**Q Data, EV=264 cfs CV=1.11**				
Avg:	**264**	**Q Data-based LN**				
SD:	**293**	u	lnQ	Q		
CV:	**1.11**	3	7.9	2598		
Min:	**31**	0	5.17	177		
Max:	**1,219**	-3	2.48	12		
Median:	**133**					
					0.928	0.928
					279.6	280
	u=mLn(Q)+b:				1.47	1.47

update for r2, EV, CV: **r2=0.928, EV=280 cfs CV=1.47; max r2=0.97**

r2 u,lnQ:	0.928	u	lnQ	Q
slope, m:	0.930	3	8.28	3945
intercept, b:	-4.703	0	5.06	157
N:	38	-3	1.83	6
E[Q]:	279.6	Parameter Estimates		
SD[Q]:	412	from LN regression		
CV[Q]:	1.47	update graph label		

	Q	N: 38				max r2 0.966
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
5-Oct-94	30.9	1	0.0163	-2.136	3.431	0.928
1-Oct-91	50.8	2	0.0425	-1.723	3.928	0.931
14-Sep-95	53.5	3	0.0686	-1.486	3.980	0.944
29-Oct-93	55.72	4	0.0948	-1.312	4.020	0.953
21-Dec-93	55.86	5	0.1209	-1.170	4.023	0.959
9-Sep-94	57.25	6	0.1471	-1.049	4.047	0.963
17-Feb-94	57.25	7	0.1732	-0.942	4.047	0.966
21-Dec-93	58.04	8	0.1993	-0.844	4.061	0.966
15-Aug-95	58.83	9	0.2255	-0.754	4.075	0.965
26-Jul-95	59.64	10	0.2516	-0.669	4.088	0.963
23-Jul-94	65.61	11	0.2778	-0.589	4.184	0.960
2-Dec-93	72.21	12	0.3039	-0.513	4.280	0.957
12-Jul-95	73.21	13	0.3301	-0.440	4.293	0.953
16-Aug-94	73.21	14	0.3562	-0.369	4.293	0.949
15-Nov-94	75.25	15	0.3824	-0.299	4.321	0.945
19-Jan-94	81.73	16	0.4085	-0.231	4.403	0.943
14-Dec-94	84.02	17	0.4346	-0.165	4.431	0.942
24-Jun-94	115.68	18	0.4608	-0.098	4.751	0.948
28-Jun-95	120.65	19	0.4869	-0.033	4.793	0.945
6-Nov-97	145	20	0.5131	0.033	4.977	0.945
23-Mar-94	176.74	21	0.5392	0.098	5.175	0.941
7-Mar-94	195.33	22	0.5654	0.165	5.275	0.935
8-Jun-94	201.01	23	0.5915	0.231	5.303	0.927
8-Mar-95	238.9	24	0.6176	0.299	5.476	0.918
6-Apr-94	268.24	25	0.6438	0.369	5.592	0.909
13-Jun-95	276.14	26	0.6699	0.440	5.621	0.900
25-Apr-95	284.29	27	0.6961	0.513	5.650	0.888
9-Feb-95	305.78	28	0.7222	0.589	5.723	0.870
13-Apr-95	328.97	29	0.7484	0.669	5.796	0.848
11-Jan-95	333.83	30	0.7745	0.754	5.811	0.819
3-May-94	343.76	31	0.8007	0.844	5.840	0.779
20-May-94	369.97	32	0.8268	0.942	5.913	0.738
23-Mar-95	577.77	33	0.8529	1.049	6.359	0.845
24-May-95	793.42	34	0.8791	1.170	6.676	0.937
11-May-95	843.25	35	0.9052	1.312	6.737	
12-May-98	902	36	0.9314	1.486	6.805	
14-May-91	920.2	37	0.9575	1.723	6.825	
18-Apr-94	1219.37	38	0.9837	2.136	7.106	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF259	**Date:**	19-Jun-00
Chemical:	tZn	**Analyst:**	J.MacLachlan
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	34,618	264	1,190	1,244	0.00	0.00	0.00
SD:	437	293	442	1,101	1.00	1.00	1.00
CV:	0.01	1.11	0.37	0.88			
Min:	33,372	31	446	280.9	-0.80	-1.69	-0.88
Max:	35,927	1,219	2,030	5,963	3.26	1.90	4.29
Median:	34,599	133	1,145	912	-0.45	-0.10	-0.30

tZn	SF259		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.409)		update r2	0.41	0.409	r2:	0.006	0.022
r2 Q,[COC]:	0.41	[tCd]	Q		m:	0.0530	0.00034
slope, m:	-1.0	1,415	30.9		b:	-1571	-6.78
intercept, b:	1444.6	1,190	263.8				
N: 38		269	1219				
LnConc. = mLn(Q)+b (r2=0.582)		update r2	0.58	0.582			
r2 lnQ,ln[COC]:	0.58	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.31	7.51	3.43	1,826	31		
intercept, b:	8.58	6.84	5.58	938	264		
N: 38		6.37	7.11	583	1,219		

N= 38

update for new data	Sampling Date	Q Discharge cfs	tZn Concentration ug/L	tZn Load lbs/day	Ln Q	Ln tZn Conc.	Ln tZn Load	tZn SF259 Standardized Values = (x - Avg)/SD Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	14-May-91	920.2	509	2519.9	6.82	6.23	7.83	2.24	-1.54	1.16
MFG	1-Oct-91	50.8	1500	410.0	3.93	7.31	6.02	-0.73	0.70	-0.76
IDEQ	29-Oct-93	55.72	1560	467.6	4.02	7.35	6.15	-0.71	0.84	-0.71
IDEQ	2-Dec-93	72.21	1650	641.0	4.28	7.41	6.46	-0.65	1.04	-0.55
IDEQ	21-Dec-93	58.04	1980	618.3	4.06	7.59	6.43	-0.70	1.79	-0.57
IDEQ	21-Dec-93	55.86	1980	595.0	4.02	7.59	6.39	-0.71	1.79	-0.59
IDEQ	19-Jan-94	81.73	1380	606.8	4.40	7.23	6.41	-0.62	0.43	-0.58
IDEQ	17-Feb-94	57.25	1580	486.6	4.05	7.37	6.19	-0.71	0.88	-0.69
IDEQ	7-Mar-94	195.33	1360	1429.2	5.27	7.22	7.26	-0.23	0.38	0.17
IDEQ	23-Mar-94	176.74	1440	1369.2	5.17	7.27	7.22	-0.30	0.57	0.11
IDEQ	6-Apr-94	268.24	939	1355.1	5.59	6.84	7.21	0.02	-0.57	0.10
IDEQ	18-Apr-94	1219.37	909	5963.2	7.11	6.81	8.69	3.26	-0.64	4.29
IDEQ	3-May-94	343.76	609	1126.3	5.84	6.41	7.03	0.27	-1.32	-0.11
IDEQ	20-May-94	369.97	605	1204.2	5.91	6.41	7.09	0.36	-1.33	-0.04
IDEQ	8-Jun-94	201.01	850	919.2	5.30	6.75	6.82	-0.21	-0.77	-0.30
IDEQ	24-Jun-94	115.68	965	600.6	4.75	6.87	6.40	-0.51	-0.51	-0.58
IDEQ	23-Jul-94	65.61	1010	356.5	4.18	6.92	5.88	-0.68	-0.41	-0.81
IDEQ	16-Aug-94	73.21	1280	504.2	4.29	7.15	6.22	-0.65	0.20	-0.67
IDEQ	9-Sep-94	57.25	1670	514.4	4.05	7.42	6.24	-0.71	1.09	-0.66
IDEQ	5-Oct-94	30.9	1690	280.9	3.43	7.43	5.64	-0.80	1.13	-0.88
IDEQ	15-Nov-94	75.25	1990	805.6	4.32	7.60	6.69	-0.64	1.81	-0.40
IDEQ	14-Dec-94	84.02	2030	917.6	4.43	7.62	6.82	-0.61	1.90	-0.30
IDEQ	11-Jan-95	333.83	1260	2263.0	5.81	7.14	7.72	0.24	0.16	0.93
IDEQ	9-Feb-95	305.78	1150	1891.9	5.72	7.05	7.55	0.14	-0.09	0.59
IDEQ	8-Mar-95	238.9	1090	1401.0	5.48	6.99	7.24	-0.08	-0.23	0.14
IDEQ	23-Mar-95	577.77	1140	3543.6	6.36	7.04	8.17	1.07	-0.11	2.09
IDEQ	13-Apr-95	328.97	937	1658.4	5.80	6.84	7.41	0.22	-0.57	0.38
IDEQ	25-Apr-95	284.29	937	1433.1	5.65	6.84	7.27	0.07	-0.57	0.17
IDEQ	11-May-95	843.25	621	2817.3	6.74	6.43	7.94	1.98	-1.29	1.43
IDEQ	24-May-95	793.42	536	2288.0	6.68	6.28	7.74	1.81	-1.48	0.95
IDEQ	13-Jun-95	276.14	610	906.2	5.62	6.41	6.81	0.04	-1.31	-0.31
IDEQ	28-Jun-95	120.65	809	525.1	4.79	6.70	6.26	-0.49	-0.86	-0.65
IDEQ	12-Jul-95	73.21	949	373.8	4.29	6.86	5.92	-0.65	-0.55	-0.79
IDEQ	26-Jul-95	59.64	1120	359.4	4.09	7.02	5.88	-0.70	-0.16	-0.80
IDEQ	15-Aug-95	58.83	1310	414.6	4.07	7.18	6.03	-0.70	0.27	-0.75
IDEQ	14-Sep-95	53.5	1340	385.7	3.98	7.20	5.96	-0.72	0.34	-0.78
URS	6-Nov-97	145	1490	1162.3	4.98	7.31	7.06	-0.41	0.68	-0.07
URS	12-May-98	902	446	2164.3	6.80	6.10	7.68	2.18	-1.69	0.84

for graph 0

tZn

Concentration over time analysis

	tZn	SF259		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.031**	**-0.00016**
	Time	**Ln[COC]**	**[COC]**		
first:	14-May-91	7.21	1,353		
mid:	22-Sep-94	7.01	1,106		
last:	12-May-98	6.79	889		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

Load over time analysis

	tZn	SF259		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.011**	**0.00018**
	Time	**LnLoad**	**Load**		
first:	14-May-91	6.61	746		
mid:	22-Sep-94	6.83	927		
last:	12-May-98	7.07	1,173		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	12-May-98	0.00	1		

	max r2: 0.341			max r2: 0.978		
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.031	-0.00016	12.70	0.011	0.00018	0.69
	0.148	-0.00039	20.39	0.059	0.00045	-8.89
	0.141	-0.00043	21.83	0.033	0.00038	-6.28
	0.128	-0.00041	21.26	0.024	0.00032	-4.40
	0.112	-0.00039	20.41	0.019	0.00030	-3.48
	0.090	-0.00034	18.81	0.015	0.00027	-2.33
	0.067	-0.00029	16.96	0.010	0.00022	-0.85
	0.057	-0.00027	16.33	0.006	0.00018	0.68
	0.044	-0.00024	15.11	0.002	0.00011	3.20
	0.035	-0.00021	14.35	0.004	0.00015	1.73
	0.025	-0.00018	13.25	0.007	0.00019	0.28
	0.029	-0.00020	13.81	0.010	0.00024	-1.29
	0.034	-0.00022	14.59	0.048	0.00047	-9.61
	0.064	-0.00030	17.29	0.056	0.00052	-11.29
	0.111	-0.00038	20.36	0.067	0.00058	-13.47
	0.136	-0.00043	22.10	0.071	0.00061	-14.54
	0.153	-0.00047	23.40	0.062	0.00058	-13.50
	0.167	-0.00050	24.53	0.041	0.00047	-9.50
	0.159	-0.00050	24.46	0.029	0.00039	-6.81
	0.134	-0.00046	22.84	0.017	0.00031	-3.84
	0.107	-0.00040	20.88	0.003	0.00012	2.96
	0.075	-0.00031	17.83	0.001	0.00007	4.51
	0.044	-0.00021	14.31	0.000	0.00004	5.52
	0.030	-0.00018	12.98	0.004	0.00015	1.77
	0.021	-0.00015	11.97	0.011	0.00024	-1.35
	0.015	-0.00012	11.12	0.016	0.00029	-3.18
	0.007	-0.00009	9.85	0.057	0.00050	-10.53
	0.006	-0.00008	9.51	0.088	0.00061	-14.60
	0.004	-0.00007	9.09	0.124	0.00072	-18.65
	0.016	-0.00013	11.42	0.306	0.00100	-28.38
	0.067	-0.00025	15.65	0.736	0.00131	-39.49
	0.171	-0.00038	20.18	0.937	0.00149	-45.95
	0.263	-0.00048	23.73	0.978	0.00158	-49.31
	0.341	-0.00057	27.25	0.976	0.00159	-49.71

update for EV, CV:

tZn
LN Analysis
SF259
tZn

Load

Load Data, EV=1240 lbs/day CV=0.885

Avg:	**1,244**
SD:	**1,101**
CV:	**0.88**
Min:	**280.9**
Max:	**5,963**
Median:	**912**

Load Data-based LN

u	ln tCd Load	tCd Load
3	9.1	9119
0	6.84	932
-3	4.56	95.2

1,244 1240
0.88 0.885

u=mLn(Load)+ b:

update for r2, EV, CV: **r2=0.964, EV=1260lbs/day CV=0.912; max r2=0.99**

r2 u,lnLoad:	0.964	u	lnLoad	Load	
slope, m:	1.285	3	9.17	9606	
intercept, b:	-8.783	0	6.84	930	
N:	38	-3	4.50	90.1	
E[Load]:	1259.2	Parameter Estimates			0.964 0.964
SD[Load]:	1149	from LN regression			1259.2 1260
CV[Load]:	0.91	update graph label			0.9 0.912

max r2 0.986

N: 38

Date	tZn Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
5-Oct-94	280.9	1	0.0163	-2.136	5.638	0.964
23-Jul-94	356.5	2	0.0425	-1.723	5.876	0.972
26-Jul-95	359.4	3	0.0686	-1.486	5.884	0.980
12-Jul-95	373.8	4	0.0948	-1.312	5.924	0.984
14-Sep-95	385.7	5	0.1209	-1.170	5.955	0.986
1-Oct-91	410.0	6	0.1471	-1.049	6.016	0.986
15-Aug-95	414.6	7	0.1732	-0.942	6.027	0.986
29-Oct-93	467.6	8	0.1993	-0.844	6.148	0.986
17-Feb-94	486.6	9	0.2255	-0.754	6.188	0.986
16-Aug-94	504.2	10	0.2516	-0.669	6.223	0.985
9-Sep-94	514.4	11	0.2778	-0.589	6.243	0.984
28-Jun-95	525.1	12	0.3039	-0.513	6.264	0.983
21-Dec-93	595.0	13	0.3301	-0.440	6.389	0.981
24-Jun-94	600.6	14	0.3562	-0.369	6.398	0.980
19-Jan-94	606.8	15	0.3824	-0.299	6.408	0.978
21-Dec-93	618.3	16	0.4085	-0.231	6.427	0.977
2-Dec-93	641.0	17	0.4346	-0.165	6.463	0.978
15-Nov-94	805.6	18	0.4608	-0.098	6.692	0.983
13-Jun-95	906.2	19	0.4869	-0.033	6.809	0.982
14-Dec-94	917.6	20	0.5131	0.033	6.822	0.980
8-Jun-94	919.2	21	0.5392	0.098	6.824	0.978
3-May-94	1126.3	22	0.5654	0.165	7.027	0.978
6-Nov-97	1162.3	23	0.5915	0.231	7.058	0.977
20-May-94	1204.2	24	0.6176	0.299	7.094	0.975
6-Apr-94	1355.1	25	0.6438	0.369	7.212	0.972
23-Mar-94	1369.2	26	0.6699	0.440	7.222	0.974
8-Mar-95	1401.0	27	0.6961	0.513	7.245	0.973
7-Mar-94	1429.2	28	0.7222	0.589	7.265	0.971
25-Apr-95	1433.1	29	0.7484	0.669	7.268	0.965
13-Apr-95	1658.4	30	0.7745	0.754	7.414	0.962
9-Feb-95	1891.9	31	0.8007	0.844	7.545	0.953
12-May-98	2164.3	32	0.8268	0.942	7.680	0.946
11-Jan-95	2263.0	33	0.8529	1.049	7.724	0.960
24-May-95	2288.0	34	0.8791	1.170	7.735	0.980
14-May-91	2519.9	35	0.9052	1.312	7.832	
11-May-95	2817.3	36	0.9314	1.486	7.944	
23-Mar-95	3543.6	37	0.9575	1.723	8.173	
18-Apr-94	5963.2	38	0.9837	2.136	8.693	

update for EV, CV:

tZn		SF259	1,190	1190
LN Analysis		tZn	0.37	0.371
Concentration		Conc. Data, EV=1190 ug/L CV=0.371		
Avg:	1,190	Data-based LN		
SD:	442	u	ln[tCd]	[tCd]
CV:	0.37	3	8.1	3278
Min:	446	0	7.02	1116
Max:	2,030	-3	5.94	380
Median:	1,145			

				0.959	0.959
u=mLn(Conc.)+b:				1209.4	1210
update for r2, EV, CV:	r2=0.959, EV=1210 ug/L CV=0.452; max r2=0.96			0.452	0.452
r2 u,lnConc:	0.959	u	lnConc.	Conc.	
slope, m:	2.321	3	8.30	4014	
intercept, b:	-16.257	0	7.01	1102	
N:	38	-3	5.71	303	
E[Conc]:	1209.4	Parameter Estimates			
SD[Conc]:	546	from LN regression			
CV[Conc]:	0.45	update graph label			

	tZn	N: 38				max r2 0.962
Date	Concentration ug/L Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
12-May-98	446	1	0.0163	-2.136	6.100	0.959
14-May-91	509	2	0.0425	-1.723	6.232	0.953
24-May-95	536	3	0.0686	-1.486	6.284	0.948
20-May-94	605	4	0.0948	-1.312	6.405	0.944
3-May-94	609	5	0.1209	-1.170	6.412	0.939
13-Jun-95	610	6	0.1471	-1.049	6.413	0.937
11-May-95	621	7	0.1732	-0.942	6.431	0.943
28-Jun-95	809	8	0.1993	-0.844	6.696	0.962
8-Jun-94	850	9	0.2255	-0.754	6.745	0.960
18-Apr-94	909	10	0.2516	-0.669	6.812	0.957
13-Apr-95	937	11	0.2778	-0.589	6.843	0.953
25-Apr-95	937	12	0.3039	-0.513	6.843	0.949
6-Apr-94	939	13	0.3301	-0.440	6.845	0.945
12-Jul-95	949	14	0.3562	-0.369	6.855	0.942
24-Jun-94	965	15	0.3824	-0.299	6.872	0.941
23-Jul-94	1010	16	0.4085	-0.231	6.918	0.943
8-Mar-95	1090	17	0.4346	-0.165	6.994	0.946
26-Jul-95	1120	18	0.4608	-0.098	7.021	0.943
23-Mar-95	1140	19	0.4869	-0.033	7.039	0.939
9-Feb-95	1150	20	0.5131	0.033	7.048	0.937
11-Jan-95	1260	21	0.5392	0.098	7.139	0.940
16-Aug-94	1280	22	0.5654	0.165	7.155	0.934
15-Aug-95	1310	23	0.5915	0.231	7.178	0.926
14-Sep-95	1340	24	0.6176	0.299	7.200	0.918
7-Mar-94	1360	25	0.6438	0.369	7.215	0.907
19-Jan-94	1380	26	0.6699	0.440	7.230	0.895
23-Mar-94	1440	27	0.6961	0.513	7.272	0.882
6-Nov-97	1490	28	0.7222	0.589	7.307	0.863
1-Oct-91	1500	29	0.7484	0.669	7.313	0.838
29-Oct-93	1560	30	0.7745	0.754	7.352	0.807
17-Feb-94	1580	31	0.8007	0.844	7.365	0.764
2-Dec-93	1650	32	0.8268	0.942	7.409	0.702
9-Sep-94	1670	33	0.8529	1.049	7.421	0.614
5-Oct-94	1690	34	0.8791	1.170	7.432	0.465
21-Dec-93	1980	35	0.9052	1.312	7.591	
21-Dec-93	1980	36	0.9314	1.486	7.591	
15-Nov-94	1990	37	0.9575	1.723	7.596	
14-Dec-94	2030	38	0.9837	2.136	7.616	

update for EV, CV:

tZn		SF259			264	264
LN Analysis		tZn			1.11	1.11
Discharge, Q		Q Data, EV=264 cfs CV=1.11				
Avg:	264	Q Data-based LN				
SD:	293	u	lnQ	Q		
CV:	1.11	3	7.9	2598		
Min:	31	0	5.17	177		
Max:	1,219	-3	2.48	12		
Median:	133					
					0.928	0.928
					279.6	280
	u=mLn(Q)+b:				1.47	1.47

update for r2, EV, CV: **r2=0.928, EV=280 cfs CV=1.47; max r2=0.97**

r2 u,lnQ:	0.928	u	lnQ	Q
slope, m:	0.930	3	8.28	3945
intercept, b:	-4.703	0	5.06	157
N:	38	-3	1.83	6
E[Q]:	279.6	Parameter Estimates		
SD[Q]:	412	from LN regression		
CV[Q]:	1.47	update graph label		

N: 38

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.966 r2 forward
update and rank for new data						
5-Oct-94	30.9	1	0.0163	-2.136	3.431	0.928
1-Oct-91	50.8	2	0.0425	-1.723	3.928	0.931
14-Sep-95	53.5	3	0.0686	-1.486	3.980	0.944
29-Oct-93	55.72	4	0.0948	-1.312	4.020	0.953
21-Dec-93	55.86	5	0.1209	-1.170	4.023	0.959
17-Feb-94	57.25	6	0.1471	-1.049	4.047	0.963
9-Sep-94	57.25	7	0.1732	-0.942	4.047	0.966
21-Dec-93	58.04	8	0.1993	-0.844	4.061	0.966
15-Aug-95	58.83	9	0.2255	-0.754	4.075	0.965
26-Jul-95	59.64	10	0.2516	-0.669	4.088	0.963
23-Jul-94	65.61	11	0.2778	-0.589	4.184	0.960
2-Dec-93	72.21	12	0.3039	-0.513	4.280	0.957
16-Aug-94	73.21	13	0.3301	-0.440	4.293	0.953
12-Jul-95	73.21	14	0.3562	-0.369	4.293	0.949
15-Nov-94	75.25	15	0.3824	-0.299	4.321	0.945
19-Jan-94	81.73	16	0.4085	-0.231	4.403	0.943
14-Dec-94	84.02	17	0.4346	-0.165	4.431	0.942
24-Jun-94	115.68	18	0.4608	-0.098	4.751	0.948
28-Jun-95	120.65	19	0.4869	-0.033	4.793	0.945
6-Nov-97	145	20	0.5131	0.033	4.977	0.945
23-Mar-94	176.74	21	0.5392	0.098	5.175	0.941
7-Mar-94	195.33	22	0.5654	0.165	5.275	0.935
8-Jun-94	201.01	23	0.5915	0.231	5.303	0.927
8-Mar-95	238.9	24	0.6176	0.299	5.476	0.918
6-Apr-94	268.24	25	0.6438	0.369	5.592	0.909
13-Jun-95	276.14	26	0.6699	0.440	5.621	0.900
25-Apr-95	284.29	27	0.6961	0.513	5.650	0.888
9-Feb-95	305.78	28	0.7222	0.589	5.723	0.870
13-Apr-95	328.97	29	0.7484	0.669	5.796	0.848
11-Jan-95	333.83	30	0.7745	0.754	5.811	0.819
3-May-94	343.76	31	0.8007	0.844	5.840	0.779
20-May-94	369.97	32	0.8268	0.942	5.913	0.738
23-Mar-95	577.77	33	0.8529	1.049	6.359	0.845
24-May-95	793.42	34	0.8791	1.170	6.676	0.937
11-May-95	843.25	35	0.9052	1.312	6.737	
12-May-98	902	36	0.9314	1.486	6.805	
14-May-91	920.2	37	0.9575	1.723	6.825	
18-Apr-94	1219.37	38	0.9837	2.136	7.106	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SF268 **Date:** 20-Jun-00
Chemical: dCd **Analyst:** J.MacLachlan
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	35,104	403	7	9	0.00	0.00	0.00
SD:	954	468	3	6	1.00	1.00	1.00
CV:	0.03	1.16	0.46	0.67			
Min:	33,373	46	1	2.7	-0.76	-1.73	-1.04
Max:	36,402	2,460	14	34	4.39	2.46	4.26
Median:	34,843	253	6	8	-0.32	-0.07	-0.17

dCd SF268 : Concentration v. Discharge, Q Q = mTime +b LnQ = mTime +b

Conc. = mQ+b (r2=0.526)	update r2	0.53	0.526	r2:	0.032	0.037	
r2 Q,[COC]:	0.53	[tCd]	Q	m:	0.0879	0.00021	
slope, m:	0.0	8	46.0	b:	-2681	-1.82	
intercept, b:	8.5	7	403.2				
N: 67		-3	2460				
LnConc. = mLn(Q)+b (r2=0.804)	update r2	0.80	0.804				
r2 lnQ,ln[COC]:	0.80	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.47	2.52	3.83	12	46		
intercept, b:	4.32	1.51	6.00	5	403		
N: 67		0.66	7.81	2	2,460		

N= 67

	Sampling Date	Q Discharge cfs	dCd Concentration ug/L	dCd Load lbs/day	Ln Q	Ln dCd Conc.	Ln dCd Load	dCd SF268 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data								for graph 0		
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	1040	2.2	12.3	6.95	0.79	2.51	1.36	-1.46	0.59
MFG	16-May-91	1010	1.8	9.8	6.92	0.59	2.28	1.30	-1.60	0.16
MFG	17-May-91	1100	1.9	11.2	7.00	0.64	2.42	1.49	-1.56	0.41
MFG	1-Oct-91	67.3	11	4.0	4.21	2.40	1.38	-0.72	1.46	-0.82
MFG	2-Oct-91	77	11	4.6	4.34	2.40	1.52	-0.70	1.46	-0.72
MFG	3-Oct-91	77	14	5.8	4.34	2.64	1.76	-0.70	2.46	-0.51
MFG	4-Oct-91	72.5	14	5.5	4.28	2.64	1.70	-0.71	2.46	-0.57
MFG	5-Oct-91	73	9.2	3.6	4.29	2.22	1.28	-0.70	0.86	-0.88
IDEQ	29-Oct-93	74	7.5	3.0	4.30	2.01	1.09	-0.70	0.30	-0.99
IDEQ	1-Dec-93	77	8.7	3.6	4.34	2.16	1.28	-0.70	0.70	-0.89
IDEQ	21-Dec-93	74	11.4	4.5	4.30	2.43	1.51	-0.70	1.59	-0.73
IDEQ	21-Jan-94	117	6.4	4.0	4.76	1.86	1.39	-0.61	-0.07	-0.81
IDEQ	17-Feb-94	75	9	3.6	4.32	2.20	1.29	-0.70	0.80	-0.88
IDEQ	7-Mar-94	287	5.3	8.2	5.66	1.67	2.10	-0.25	-0.43	-0.11
IDEQ	23-Mar-94	268	6.5	9.4	5.59	1.87	2.24	-0.29	-0.03	0.09
IDEQ	6-Apr-94	359	6	11.6	5.88	1.79	2.45	-0.09	-0.20	0.47
IDEQ	18-Apr-94	805	3.2	13.9	6.69	1.16	2.63	0.86	-1.13	0.86
IDEQ	3-May-94	407	4.2	9.2	6.01	1.44	2.22	0.01	-0.80	0.06
IDEQ	20-May-94	338	4.1	7.5	5.82	1.41	2.01	-0.14	-0.83	-0.23
IDEQ	8-Jun-94	262	5.5	7.8	5.57	1.70	2.05	-0.30	-0.37	-0.18
IDEQ	24-Jun-94	154	6.8	5.6	5.04	1.92	1.73	-0.53	0.07	-0.54
IDEQ	23-Jul-94	87	7.4	3.5	4.47	2.00	1.24	-0.68	0.26	-0.91
IDEQ	16-Aug-94	59	10.5	3.3	4.08	2.35	1.20	-0.73	1.29	-0.93
IDEQ	5-Oct-94	46	11	2.7	3.83	2.40	1.00	-0.76	1.46	-1.04
IDEQ	16-Nov-94	56	12	3.6	4.03	2.48	1.29	-0.74	1.79	-0.88
IDEQ	14-Dec-94	87	13	6.1	4.47	2.56	1.81	-0.68	2.13	-0.46
IDEQ	11-Jan-95	474	5.6	14.3	6.16	1.72	2.66	0.15	-0.33	0.93
IDEQ	9-Feb-95	264	5.5	7.8	5.58	1.70	2.06	-0.30	-0.37	-0.17
IDEQ	8-Mar-95	380	5.8	11.9	5.94	1.76	2.47	-0.05	-0.27	0.52
IDEQ	23-Mar-95	876	7.2	33.9	6.78	1.97	3.52	1.01	0.20	4.26
IDEQ	14-Apr-95	536	6.4	18.5	6.28	1.86	2.92	0.28	-0.07	1.64
IDEQ	27-Apr-95	443	5.5	13.1	6.09	1.70	2.57	0.08	-0.37	0.73
IDEQ	11-May-95	896	4.4	21.2	6.80	1.48	3.05	1.05	-0.73	2.10
IDEQ	24-May-95	699	3.6	13.5	6.55	1.28	2.61	0.63	-1.00	0.80
IDEQ	13-Jun-95	420	3.8	8.6	6.04	1.34	2.15	0.04	-0.93	-0.04
IDEQ	28-Jun-95	254	6	8.2	5.54	1.79	2.10	-0.32	-0.20	-0.11
IDEQ	12-Jul-95	177	6.6	6.3	5.18	1.89	1.84	-0.48	0.00	-0.43
IDEQ	26-Jul-95	126	7.6	5.2	4.84	2.03	1.64	-0.59	0.33	-0.62
IDEQ	15-Aug-95	108	7.8	4.5	4.68	2.05	1.51	-0.63	0.40	-0.73
IDEQ	14-Sep-95	70	8.6	3.2	4.25	2.15	1.18	-0.71	0.66	-0.95
URS	5-Nov-97	177	8.39	8.0	5.18	2.13	2.08	-0.48	0.59	-0.14
IDEQ	24-Apr-98	1270	3.8	26.0	7.15	1.34	3.26	1.85	-0.93	2.91
URS	11-May-98	1280	2.2	15.2	7.15	0.79	2.72	1.87	-1.46	1.07
IDEQ	25-Jun-98	268	4.9	7.1	5.59	1.59	1.96	-0.29	-0.57	-0.30
IDEQ	27-Jul-98	119	6.9	4.4	4.78	1.93	1.49	-0.61	0.10	-0.75

IDEQ	25-Aug-98	90	7.5	3.6	4.50	2.01	1.29	-0.67	0.30	-0.88
IDEQ	23-Sep-98	73	8.6	3.4	4.29	2.15	1.22	-0.70	0.66	-0.92
USGS	19-Oct-98	68	8.4	3.1	4.22	2.13	1.12	-0.72	0.60	-0.98
IDEQ	27-Oct-98	64	8.7	3.0	4.16	2.16	1.10	-0.72	0.70	-0.99
USGS	17-Nov-98	94	9.8	5.0	4.54	2.28	1.60	-0.66	1.06	-0.66
IDEQ	24-Nov-98	156	10	8.4	5.05	2.30	2.13	-0.53	1.13	-0.07
USGS	15-Dec-98	200	7.4	8.0	5.30	2.00	2.07	-0.43	0.26	-0.15
IDEQ	4-Jan-99	194	7.4	7.7	5.27	2.00	2.04	-0.45	0.26	-0.19
IDEQ	14-Jan-99	315	5.1	8.6	5.75	1.63	2.16	-0.19	-0.50	-0.03
USGS	21-Jan-99	358	5.4	10.4	5.88	1.69	2.34	-0.10	-0.40	0.27
USGS	10-Feb-99	235	6.7	8.5	5.46	1.90	2.14	-0.36	0.03	-0.06
USGS	9-Mar-99	253	6.2	8.4	5.53	1.82	2.13	-0.32	-0.13	-0.06
USGS	9-Mar-99	254	6.2	8.5	5.54	1.82	2.14	-0.32	-0.13	-0.06
USGS	12-Apr-99	355	4.4	8.4	5.87	1.48	2.13	-0.10	-0.73	-0.07
USGS	20-Apr-99	1320	3	21.3	7.19	1.10	3.06	1.96	-1.20	2.12
USGS	6-May-99	664	3.6	12.9	6.50	1.28	2.55	0.56	-1.00	0.69
USGS	25-May-99	2460	1.4	18.5	7.81	0.34	2.92	4.39	-1.73	1.65
USGS	27-May-99	1740	1.7	15.9	7.46	0.53	2.77	2.85	-1.63	1.20
USGS	1-Jun-99	1450	1.7	13.3	7.28	0.53	2.58	2.23	-1.63	0.75
USGS	15-Jul-99	406	3	6.6	6.01	1.10	1.88	0.01	-1.20	-0.39
USGS	9-Aug-99	168	6	5.4	5.12	1.79	1.69	-0.50	-0.20	-0.58
USGS	30-Aug-99	113	6	3.6	4.73	1.79	1.29	-0.62	-0.20	-0.88

dCd

Concentration over time analysis r2 Slope, m

	dCd	SF268		Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.041	-0.00011
	Time	Ln[COC]	[COC]		
first:	15-May-91	1.96	7		
mid:	24-May-95	1.79	6		
last:	30-Aug-99	1.61	5		
	LnConc.=mTime+b >'96 r2, m:			0.342	-0.00396
	17-Nov-98	2.04	8		
	30-Aug-99	0.91	2		

Load over time analysis

	dCd	SF268		Load over time	
	LnLoad=mTime+b All data r2, m:			0.022	0.00009
	Time	LnLoad	Load		
first:	15-May-91	1.83	6		
mid:	24-May-95	1.97	7		
last:	30-Aug-99	2.11	8		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00002
	17-Nov-98	2.20	9		
	30-Aug-99	2.20	9		

max r2: 0.963 max r2: 0.985

Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.041	-0.00011	5.76	0.022	0.00009	-1.28
0.070	-0.00015	7.02	0.032	0.00011	-2.02
0.125	-0.00020	8.71	0.040	0.00013	-2.59
0.206	-0.00025	10.59	0.052	0.00015	-3.43
0.190	-0.00024	10.38	0.043	0.00014	-3.01
0.173	-0.00024	10.14	0.036	0.00013	-2.71
0.145	-0.00022	9.50	0.034	0.00013	-2.71
0.116	-0.00020	8.74	0.030	0.00013	-2.61
0.102	-0.00019	8.56	0.019	0.00011	-1.75
0.098	-0.00019	8.50	0.011	0.00008	-0.87
0.090	-0.00018	8.27	0.006	0.00006	-0.14
0.076	-0.00017	7.70	0.004	0.00005	0.39
0.075	-0.00017	7.76	0.001	0.00003	1.11
0.065	-0.00016	7.41	0.000	0.00000	2.00
0.069	-0.00017	7.69	0.000	0.00000	1.97
0.068	-0.00017	7.72	0.000	0.00001	1.75
0.068	-0.00017	7.86	0.001	0.00002	1.22
0.092	-0.00020	8.92	0.003	0.00005	0.39
0.108	-0.00022	9.68	0.004	0.00006	0.06
0.129	-0.00025	10.56	0.004	0.00006	0.04
0.137	-0.00026	11.06	0.004	0.00006	-0.06
0.136	-0.00027	11.24	0.003	0.00005	0.40
0.131	-0.00027	11.28	0.000	0.00001	1.80
0.111	-0.00025	10.63	0.002	-0.00004	3.48
0.091	-0.00023	9.80	0.012	-0.00010	5.75
0.067	-0.00020	8.65	0.028	-0.00016	7.70
0.043	-0.00015	7.15	0.038	-0.00019	8.78
0.043	-0.00016	7.38	0.029	-0.00016	8.02
0.045	-0.00017	7.68	0.033	-0.00018	8.63
0.045	-0.00017	7.88	0.027	-0.00017	8.22
0.037	-0.00016	7.48	0.005	-0.00007	4.65
0.032	-0.00016	7.35	0.000	-0.00001	2.25
0.033	-0.00017	7.73	0.002	0.00004	0.47
0.045	-0.00021	9.11	0.023	0.00016	-3.77
0.075	-0.00028	11.88	0.054	0.00026	-7.28
0.118	-0.00038	15.36	0.072	0.00032	-9.59
0.128	-0.00044	17.35	0.096	0.00041	-12.63
0.134	-0.00050	19.66	0.104	0.00048	-15.14
0.126	-0.00057	22.10	0.096	0.00053	-17.25
0.121	-0.00071	27.27	0.073	0.00060	-19.47
0.128	-0.00127	47.53	0.006	0.00028	-8.12
0.099	-0.00129	48.21	0.008	0.00040	-12.36
0.147	-0.00170	63.23	0.087	0.00129	-44.61
0.342	-0.00273	100.33	0.209	0.00213	-75.00
0.417	-0.00328	120.54	0.242	0.00250	-88.43

0.435	-0.00362	132.73	0.213	0.00250	-88.34
0.435	-0.00388	142.19	0.158	0.00224	-78.99
0.411	-0.00397	145.34	0.097	0.00178	-62.23
0.382	-0.00400	146.35	0.037	0.00106	-36.31
0.342	-0.00396	144.93	0.000	0.00002	1.57
0.280	-0.00366	133.99	0.019	-0.00072	28.47
0.200	-0.00314	115.28	0.032	-0.00103	39.56
0.146	-0.00281	103.37	0.058	-0.00150	56.60
0.089	-0.00227	83.70	0.101	-0.00214	79.74
0.068	-0.00217	80.01	0.146	-0.00282	104.73
0.038	-0.00180	66.74	0.170	-0.00345	127.36
0.002	-0.00044	17.09	0.265	-0.00487	179.10
0.016	0.00128	-45.30	0.383	-0.00648	237.47
0.195	0.00489	-176.65	0.640	-0.00984	359.67
0.414	0.00770	-278.61	0.919	-0.01307	477.25
0.574	0.01041	-377.37	0.899	-0.01327	484.36
0.963	0.01532	-555.78	0.978	-0.01554	566.92
0.956	0.01477	-535.90	0.985	-0.01469	536.18

update for EV, CV:

dCd
LN Analysis
SF268
dCd

Load

Load Data, EV=8.82 lbs/day CV=0.668

Avg:	9	**Load Data-based LN**		
SD:	6	u	ln tCd Load	tCd Load
CV:	0.67	3	3.8	45
Min:	2.7	0	1.99	7
Max:	34	-3	0.17	1.2
Median:	8			
		9	8.82	
		0.67	0.668	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.972, EV=8.88lbs/day CV=0.682; max r2=0.99**

r2 u,lnLoad:	0.972	u	lnLoad	Load		
slope, m:	1.618	3	3.85	47		
intercept, b:	-3.224	0	1.99	7		
N:	67	-3	0.14	1.1		
E[Load]:	8.9	Parameter Estimates			0.972	0.972
SD[Load]:	6	from LN regression			8.9	8.88
CV[Load]:	0.68	update graph label			0.7	0.682
					max r2	
					0.989	

Date	dCd Load lbs/day Ranked	N: 67 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
5-Oct-94	2.7	1	0.0093	-2.354	1.001	0.972
29-Oct-93	3.0	2	0.0242	-1.974	1.094	0.980
27-Oct-98	3.0	3	0.0390	-1.762	1.097	0.985
19-Oct-98	3.1	4	0.0539	-1.608	1.123	0.987
14-Sep-95	3.2	5	0.0688	-1.485	1.175	0.988
16-Aug-94	3.3	6	0.0836	-1.381	1.204	0.989
23-Sep-98	3.4	7	0.0985	-1.290	1.217	0.989
23-Jul-94	3.5	8	0.1134	-1.209	1.242	0.989
1-Dec-93	3.6	9	0.1283	-1.135	1.282	0.989
5-Oct-91	3.6	10	0.1431	-1.066	1.285	0.989
16-Nov-94	3.6	11	0.1580	-1.003	1.285	0.989
25-Aug-98	3.6	12	0.1729	-0.943	1.290	0.988
17-Feb-94	3.6	13	0.1877	-0.886	1.290	0.988
30-Aug-99	3.6	14	0.2026	-0.832	1.294	0.988
1-Oct-91	4.0	15	0.2175	-0.781	1.382	0.988
21-Jan-94	4.0	16	0.2323	-0.731	1.393	0.988
27-Jul-98	4.4	17	0.2472	-0.683	1.486	0.988
15-Aug-95	4.5	18	0.2621	-0.637	1.511	0.987
21-Dec-93	4.5	19	0.2770	-0.592	1.513	0.987
2-Oct-91	4.6	20	0.2918	-0.548	1.517	0.987
17-Nov-98	5.0	21	0.3067	-0.505	1.601	0.987
26-Jul-95	5.2	22	0.3216	-0.463	1.639	0.987
9-Aug-99	5.4	23	0.3364	-0.422	1.691	0.987
4-Oct-91	5.5	24	0.3513	-0.382	1.698	0.986
24-Jun-94	5.6	25	0.3662	-0.342	1.729	0.986
3-Oct-91	5.8	26	0.3810	-0.303	1.758	0.986
14-Dec-94	6.1	27	0.3959	-0.264	1.806	0.985
12-Jul-95	6.3	28	0.4108	-0.226	1.838	0.984
15-Jul-99	6.6	29	0.4257	-0.187	1.880	0.984
25-Jun-98	7.1	30	0.4405	-0.150	1.955	0.983
20-May-94	7.5	31	0.4554	-0.112	2.009	0.983
4-Jan-99	7.7	32	0.4703	-0.075	2.044	0.983
8-Jun-94	7.8	33	0.4851	-0.037	2.048	0.985
9-Feb-95	7.8	34	0.5000	0.000	2.056	0.986
15-Dec-98	8.0	35	0.5149	0.037	2.075	0.986
5-Nov-97	8.0	36	0.5297	0.075	2.078	0.987
7-Mar-94	8.2	37	0.5446	0.112	2.102	0.988
28-Jun-95	8.2	38	0.5595	0.150	2.104	0.989
24-Nov-98	8.4	39	0.5743	0.187	2.127	0.989
12-Apr-99	8.4	40	0.5892	0.226	2.129	0.989
9-Mar-99	8.4	41	0.6041	0.264	2.133	0.989
10-Feb-99	8.5	42	0.6190	0.303	2.137	0.989
9-Mar-99	8.5	43	0.6338	0.342	2.137	0.988
13-Jun-95	8.6	44	0.6487	0.382	2.150	0.987
14-Jan-99	8.6	45	0.6636	0.422	2.157	0.987

3-May-94	9.2	46	0.6784	0.463	2.219	0.987
23-Mar-94	9.4	47	0.6933	0.505	2.238	0.987
16-May-91	9.8	48	0.7082	0.548	2.280	0.988
21-Jan-99	10.4	49	0.7230	0.592	2.342	0.988
17-May-91	11.2	50	0.7379	0.637	2.420	0.987
6-Apr-94	11.6	51	0.7528	0.683	2.450	0.986
8-Mar-95	11.9	52	0.7677	0.731	2.473	0.986
15-May-91	12.3	53	0.7825	0.781	2.510	0.985
6-May-99	12.9	54	0.7974	0.832	2.554	0.985
27-Apr-95	13.1	55	0.8123	0.886	2.573	0.986
1-Jun-99	13.3	56	0.8271	0.943	2.585	0.987
24-May-95	13.5	57	0.8420	1.003	2.606	0.987
18-Apr-94	13.9	58	0.8569	1.066	2.629	0.985
11-Jan-95	14.3	59	0.8717	1.135	2.659	0.983
11-May-98	15.2	60	0.8866	1.209	2.718	0.980
27-May-99	15.9	61	0.9015	1.290	2.767	0.976
14-Apr-95	18.5	62	0.9164	1.381	2.915	0.972
25-May-99	18.5	63	0.9312	1.485	2.919	0.977
11-May-95	21.2	64	0.9461	1.608	3.054	
20-Apr-99	21.3	65	0.9610	1.762	3.059	
24-Apr-98	26.0	66	0.9758	1.974	3.257	
23-Mar-95	33.9	67	0.9907	2.354	3.524	

update for EV, CV:

dCd		**SF268**		7	6.6
LN Analysis		**dCd**		0.46	0.456
Concentration		**Conc. Data, EV=6.6 ug/L CV=0.456**			
Avg:	7	**Data-based LN**			
SD:	3	u	ln[tCd]	[tCd]	
CV:	0.46	3	3.1	22	
Min:	1	0	1.79	6	
Max:	14	-3	0.49	2	
Median:	6				

				0.943	0.943
u=mLn(Conc.)+b:				*6.8*	*6.84*
update for r2, EV, CV:	**r2=0.943, EV=6.84 ug/L CV=0.614; max r2=0.989**			0.614	0.614
r2 u,lnConc:	0.943	u	lnConc.	Conc.	
slope, m:	1.768	3	3.46	32	
intercept, b:	-3.117	0	1.76	6	
N: 67		-3	0.07	1	
E[Conc]:	6.8	Parameter Estimates			
SD[Conc]:	4	from LN regression			
CV[Conc]:	0.61	update graph label			

	dCd		N: 67			max r2 0.989
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
25-May-99	1.4	1	0.0093	-2.354	0.336	0.943
27-May-99	1.7	2	0.0242	-1.974	0.531	0.938
1-Jun-99	1.7	3	0.0390	-1.762	0.531	0.934
16-May-91	1.8	4	0.0539	-1.608	0.588	0.935
17-May-91	1.9	5	0.0688	-1.485	0.642	0.939
15-May-91	2.2	6	0.0836	-1.381	0.788	0.947
11-May-98	2.2	7	0.0985	-1.290	0.788	0.953
20-Apr-99	3	8	0.1134	-1.209	1.099	0.967
15-Jul-99	3	9	0.1283	-1.135	1.099	0.968
18-Apr-94	3.2	10	0.1431	-1.066	1.163	0.972
24-May-95	3.6	11	0.1580	-1.003	1.281	0.975
6-May-99	3.6	12	0.1729	-0.943	1.281	0.975
13-Jun-95	3.8	13	0.1877	-0.886	1.335	0.977
24-Apr-98	3.8	14	0.2026	-0.832	1.335	0.978
20-May-94	4.1	15	0.2175	-0.781	1.411	0.982
3-May-94	4.2	16	0.2323	-0.731	1.435	0.983
11-May-95	4.4	17	0.2472	-0.683	1.482	0.985
12-Apr-99	4.4	18	0.2621	-0.637	1.482	0.986
25-Jun-98	4.9	19	0.2770	-0.592	1.589	0.989
14-Jan-99	5.1	20	0.2918	-0.548	1.629	0.989
7-Mar-94	5.3	21	0.3067	-0.505	1.668	0.988
21-Jan-99	5.4	22	0.3216	-0.463	1.686	0.988
8-Jun-94	5.5	23	0.3364	-0.422	1.705	0.987
9-Feb-95	5.5	24	0.3513	-0.382	1.705	0.987
27-Apr-95	5.5	25	0.3662	-0.342	1.705	0.986
11-Jan-95	5.6	26	0.3810	-0.303	1.723	0.986
8-Mar-95	5.8	27	0.3959	-0.264	1.758	0.985
6-Apr-94	6	28	0.4108	-0.226	1.792	0.984
28-Jun-95	6	29	0.4257	-0.187	1.792	0.984
9-Aug-99	6	30	0.4405	-0.150	1.792	0.983
30-Aug-99	6	31	0.4554	-0.112	1.792	0.982
9-Mar-99	6.2	32	0.4703	-0.075	1.825	0.981
9-Mar-99	6.2	33	0.4851	-0.037	1.825	0.980
21-Jan-94	6.4	34	0.5000	0.000	1.856	0.979
14-Apr-95	6.4	35	0.5149	0.037	1.856	0.978
23-Mar-94	6.5	36	0.5297	0.075	1.872	0.977
12-Jul-95	6.6	37	0.5446	0.112	1.887	0.976
10-Feb-99	6.7	38	0.5595	0.150	1.902	0.974
24-Jun-94	6.8	39	0.5743	0.187	1.917	0.973
27-Jul-98	6.9	40	0.5892	0.226	1.932	0.972
23-Mar-95	7.2	41	0.6041	0.264	1.974	0.970
23-Jul-94	7.4	42	0.6190	0.303	2.001	0.968
15-Dec-98	7.4	43	0.6338	0.342	2.001	0.966
4-Jan-99	7.4	44	0.6487	0.382	2.001	0.964
29-Oct-93	7.5	45	0.6636	0.422	2.015	0.962

25-Aug-98	7.5	46	0.6784	0.463	2.015	0.959
26-Jul-95	7.6	47	0.6933	0.505	2.028	0.958
15-Aug-95	7.8	48	0.7082	0.548	2.054	0.957
5-Nov-97	8.39	49	0.7230	0.592	2.127	0.956
19-Oct-98	8.4	50	0.7379	0.637	2.128	0.953
14-Sep-95	8.6	51	0.7528	0.683	2.152	0.948
23-Sep-98	8.6	52	0.7677	0.731	2.152	0.943
1-Dec-93	8.7	53	0.7825	0.781	2.163	0.937
27-Oct-98	8.7	54	0.7974	0.832	2.163	0.931
17-Feb-94	9	55	0.8123	0.886	2.197	0.930
5-Oct-91	9.2	56	0.8271	0.943	2.219	0.928
17-Nov-98	9.8	57	0.8420	1.003	2.282	0.933
24-Nov-98	10	58	0.8569	1.066	2.303	0.925
16-Aug-94	10.5	59	0.8717	1.135	2.351	0.916
1-Oct-91	11	60	0.8866	1.209	2.398	0.898
2-Oct-91	11	61	0.9015	1.290	2.398	0.886
5-Oct-94	11	62	0.9164	1.381	2.398	0.856
21-Dec-93	11.4	63	0.9312	1.485	2.434	0.807
16-Nov-94	12	64	0.9461	1.608	2.485	
14-Dec-94	13	65	0.9610	1.762	2.565	
3-Oct-91	14	66	0.9758	1.974	2.639	
4-Oct-91	14	67	0.9907	2.354	2.639	

update for EV, CV:

dCd		**SF268**			403	403
LN Analysis		**dCd**			1.16	1.16
Discharge, Q		**Q Data, EV=403 cfs CV=1.16**				
Avg:	**403**	**Q Data-based LN**				
SD:	**468**	u	lnQ	Q		
CV:	**1.16**	3	8.3	4210		
Min:	**46**	0	5.57	263		
Max:	**2,460**	-3	2.80	16		
Median:	**253**					
					0.047	0.0469
					35382.3	35400
	u=mLn(Q)+b:				0.13	0.129

update for r2, EV, CV: **r2=0.0469, EV=35400 cfs CV=0.129; max r2=0.56**

r2 u,lnQ:	0.047	u	lnQ	Q
slope, m:	7.777	3	10.85	51609
intercept, b:	-81.391	0	10.47	35091
N: 67		-3	10.08	23860
E[Q]:	35382.3	Parameter Estimates		
SD[Q]:	4569	from LN regression		
CV[Q]:	0.13	update graph label		

N: 67

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.556 r2 forward
update and rank for new data						
5-Oct-94	46	1	0.0093	-2.354	10.452	0.047
16-Nov-94	56	2	0.0242	-1.974	10.453	0.043
16-Aug-94	59	3	0.0390	-1.762	10.451	0.040
27-Oct-98	64	4	0.0539	-1.608	10.494	0.036
1-Oct-91	67.3	5	0.0688	-1.485	10.420	0.052
19-Oct-98	68	6	0.0836	-1.381	10.494	0.035
14-Sep-95	70	7	0.0985	-1.290	10.462	0.050
4-Oct-91	72.5	8	0.1134	-1.209	10.420	0.051
5-Oct-91	73	9	0.1283	-1.135	10.420	0.034
23-Sep-98	73	10	0.1431	-1.066	10.493	0.020
29-Oct-93	74	11	0.1580	-1.003	10.442	0.031
21-Dec-93	74	12	0.1729	-0.943	10.444	0.023
17-Feb-94	75	13	0.1877	-0.886	10.445	0.017
2-Oct-91	77	14	0.2026	-0.832	10.420	0.012
3-Oct-91	77	15	0.2175	-0.781	10.420	0.003
1-Dec-93	77	16	0.2323	-0.731	10.443	0.000
23-Jul-94	87	17	0.2472	-0.683	10.450	0.001
14-Dec-94	87	18	0.2621	-0.637	10.454	0.004
25-Aug-98	90	19	0.2770	-0.592	10.492	0.007
17-Nov-98	94	20	0.2918	-0.548	10.494	0.004
15-Aug-95	108	21	0.3067	-0.505	10.461	0.001
30-Aug-99	113	22	0.3216	-0.463	10.502	0.002
21-Jan-94	117	23	0.3364	-0.422	10.445	0.000
27-Jul-98	119	24	0.3513	-0.382	10.491	0.002
26-Jul-95	126	25	0.3662	-0.342	10.460	0.000
24-Jun-94	154	26	0.3810	-0.303	10.449	0.001
24-Nov-98	156	27	0.3959	-0.264	10.495	0.004
9-Aug-99	168	28	0.4108	-0.226	10.502	0.001
12-Jul-95	177	29	0.4257	-0.187	10.460	0.000
5-Nov-97	177	30	0.4405	-0.150	10.484	0.000
4-Jan-99	194	31	0.4554	-0.112	10.496	0.000
15-Dec-98	200	32	0.4703	-0.075	10.495	0.002
10-Feb-99	235	33	0.4851	-0.037	10.497	0.008
9-Mar-99	253	34	0.5000	0.000	10.498	0.019
28-Jun-95	254	35	0.5149	0.037	10.460	0.037
9-Mar-99	254	36	0.5297	0.075	10.498	0.035
8-Jun-94	262	37	0.5446	0.112	10.449	0.061
9-Feb-95	264	38	0.5595	0.150	10.456	0.051
23-Mar-94	268	39	0.5743	0.187	10.446	0.046
25-Jun-98	268	40	0.5892	0.226	10.490	0.035
7-Mar-94	287	41	0.6041	0.264	10.446	0.056
14-Jan-99	315	42	0.6190	0.303	10.496	0.043
20-May-94	338	43	0.6338	0.342	10.448	0.075
12-Apr-99	355	44	0.6487	0.382	10.499	0.062
21-Jan-99	358	45	0.6636	0.422	10.496	0.109

6-Apr-94	359	46	0.6784	0.463	10.447	0.174
8-Mar-95	380	47	0.6933	0.505	10.456	0.159
15-Jul-99	406	48	0.7082	0.548	10.501	0.156
3-May-94	407	49	0.7230	0.592	10.447	0.265
13-Jun-95	420	50	0.7379	0.637	10.459	0.251
27-Apr-95	443	51	0.7528	0.683	10.458	0.260
11-Jan-95	474	52	0.7677	0.731	10.455	0.267
14-Apr-95	536	53	0.7825	0.781	10.457	0.266
6-May-99	664	54	0.7974	0.832	10.499	0.270
24-May-95	699	55	0.8123	0.886	10.459	0.454
18-Apr-94	805	56	0.8271	0.943	10.447	0.489
23-Mar-95	876	57	0.8420	1.003	10.457	0.485
11-May-95	896	58	0.8569	1.066	10.458	0.515
16-May-91	1010	59	0.8717	1.135	10.416	0.556
15-May-91	1040	60	0.8866	1.209	10.416	0.465
17-May-91	1100	61	0.9015	1.290	10.416	0.333
24-Apr-98	1270	62	0.9164	1.381	10.489	0.544
11-May-98	1280	63	0.9312	1.485	10.489	0.379
20-Apr-99	1320	64	0.9461	1.608	10.499	
1-Jun-99	1450	65	0.9610	1.762	10.500	
27-May-99	1740	66	0.9758	1.974	10.500	
25-May-99	2460	67	0.9907	2.354	10.500	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	**SF268**	**Date:**	20-Jun-00
Chemical:	**dPb**	**Analyst:**	J.MacLachlan
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	35,104	393	6	12	0.00	0.00	0.00
SD:	954	474	2	16	1.00	1.00	1.00
CV:	0.03	1.20	0.37	1.35			
Min:	33,373	5	3	0.2	-0.82	-1.58	-0.73
Max:	36,402	2,460	15	102	4.36	3.63	5.67
Median:	34,843	235	6	6	-0.33	-0.18	-0.36

dPb	SF268		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.0157)		update r2	0.02	0.0157	r2:	0.022	0.0003
r2 Q,[COC]:	0.02	[tCd]	Q		m:	0.0739	-0.00002
slope, m:	-0.001	7	5.0		b:	-2201	6.10
intercept, b:	6.7	6	393.2				
N: 63		5	2460				
LnConc. = mLn(Q)+b (r2=0.0274)		update r2	0.03	0.0274			
r2 lnQ,ln[COC]:	0.03	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.05	1.96	1.61	7	5		
intercept, b:	2.03	1.76	5.97	6	393		
N: 63		1.68	7.81	5	2,460		

N= 67

update for new data	Sampling Date	Q Discharge cfs	dPb Concentration ug/L	dPb Load lbs/day	Ln Q	Ln dPb Conc.	Ln dPb Load	dPb SF268 Standardized Values = (x - Avg)/SD Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	*15-May-91*	*1040*			6.95			1.37		
MFG	*16-May-91*	*1010*			6.92			1.30		
MFG	*17-May-91*	*1100*			7.00			1.49		
MFG	1-Oct-91	67.3	5	1.8	4.21	1.61	0.59	-0.69	-0.60	-0.63
MFG	2-Oct-91	77	8	3.3	4.34	2.08	1.20	-0.67	0.67	-0.53
MFG	3-Oct-91	77	4	1.7	4.34	1.39	0.51	-0.67	-1.03	-0.64
MFG	4-Oct-91	72.5	4	1.6	4.28	1.39	0.44	-0.68	-1.03	-0.64
MFG	5-Oct-91	73	4	1.6	4.29	1.39	0.45	-0.68	-1.03	-0.64
IDEQ	29-Oct-93	74	6	2.4	4.30	1.79	0.87	-0.67	-0.18	-0.59
IDEQ	1-Dec-93	77	5	2.1	4.34	1.61	0.73	-0.67	-0.60	-0.61
IDEQ	21-Dec-93	74	6	2.4	4.30	1.79	0.87	-0.67	-0.18	-0.59
IDEQ	21-Jan-94	117	6	3.8	4.76	1.79	1.33	-0.58	-0.18	-0.50
IDEQ	17-Feb-94	75	5	2.0	4.32	1.61	0.70	-0.67	-0.60	-0.61
IDEQ	7-Mar-94	287	5	7.7	5.66	1.61	2.04	-0.22	-0.60	-0.26
IDEQ	23-Mar-94	268	8	11.5	5.59	2.08	2.45	-0.26	0.67	-0.02
IDEQ	6-Apr-94	359	6	11.6	5.88	1.79	2.45	-0.07	-0.18	-0.01
IDEQ	18-Apr-94	805	5	21.7	6.69	1.61	3.08	0.87	-0.60	0.62
IDEQ	3-May-94	407	7	15.3	6.01	1.95	2.73	0.03	0.24	0.22
IDEQ	20-May-94	338	6	10.9	5.82	1.79	2.39	-0.12	-0.18	-0.06
IDEQ	8-Jun-94	262	8	11.3	5.57	2.08	2.42	-0.28	0.67	-0.03
IDEQ	24-Jun-94	154	6	5.0	5.04	1.79	1.60	-0.50	-0.18	-0.43
IDEQ	23-Jul-94	87	5	2.3	4.47	1.61	0.85	-0.65	-0.60	-0.59
IDEQ	16-Aug-94	59	7	2.2	4.08	1.95	0.80	-0.71	0.24	-0.60
IDEQ	5-Oct-94	46	7	1.7	3.83	1.95	0.55	-0.73	0.24	-0.63
IDEQ	16-Nov-94	56	8	2.4	4.03	2.08	0.88	-0.71	0.67	-0.59
IDEQ	14-Dec-94	87	6	2.8	4.47	1.79	1.03	-0.65	-0.18	-0.56
IDEQ	11-Jan-95	474	4	10.2	6.16	1.39	2.32	0.17	-1.03	-0.10
IDEQ	9-Feb-95	264	6	8.5	5.58	1.79	2.14	-0.27	-0.18	-0.21
IDEQ	8-Mar-95	380	7	14.3	5.94	1.95	2.66	-0.03	0.24	0.16
IDEQ	23-Mar-95	876	10	47.1	6.78	2.30	3.85	1.02	1.51	2.21
IDEQ	14-Apr-95	536	8	23.1	6.28	2.08	3.14	0.30	0.67	0.70
IDEQ	27-Apr-95	443	7	16.7	6.09	1.95	2.81	0.11	0.24	0.31
IDEQ	11-May-95	896	6	28.9	6.80	1.79	3.36	1.06	-0.18	1.07
IDEQ	24-May-95	699	6	22.6	6.55	1.79	3.12	0.65	-0.18	0.67
IDEQ	13-Jun-95	420	10	22.6	6.04	2.30	3.12	0.06	1.51	0.68
IDEQ	28-Jun-95	254	9	12.3	5.54	2.20	2.51	-0.29	1.09	0.03
IDEQ	12-Jul-95	177	7	6.7	5.18	1.95	1.90	-0.46	0.24	-0.32
IDEQ	26-Jul-95	126	9	6.1	4.84	2.20	1.81	-0.56	1.09	-0.36
IDEQ	15-Aug-95	108	8	4.6	4.68	2.08	1.54	-0.60	0.67	-0.45
IDEQ	14-Sep-95	70	7	2.6	4.25	1.95	0.97	-0.68	0.24	-0.57
URS	5-Nov-97	177	13.1	12.5	5.18	2.57	2.52	-0.46	2.82	0.04
IDEQ	24-Apr-98	1270	15	102.5	7.15	2.71	4.63	1.85	3.63	5.67
URS	11-May-98	1280	6	41.3	7.15	1.79	3.72	1.87	-0.18	1.85
IDEQ	25-Jun-98	268	10	14.4	5.59	2.30	2.67	-0.26	1.51	0.16
IDEQ	27-Jul-98	119	11	7.0	4.78	2.40	1.95	-0.58	1.94	-0.30

IDEQ	25-Aug-98	90	9	4.4	4.50	2.20	1.47	-0.64	1.09	-0.47
IDEQ	23-Sep-98	73	8	3.1	4.29	2.08	1.14	-0.68	0.67	-0.54
USGS	19-Oct-98	68	4.6	1.7	4.22	1.53	0.52	-0.69	-0.77	-0.63
IDEQ	27-Oct-98	64	6	2.1	4.16	1.79	0.73	-0.69	-0.18	-0.61
USGS	17-Nov-98	94	4.6	2.3	4.54	1.53	0.84	-0.63	-0.77	-0.59
IDEQ	24-Nov-98	156	8	6.7	5.05	2.08	1.90	-0.50	0.67	-0.32
USGS	15-Dec-98	200	4.1	4.4	5.30	1.41	1.48	-0.41	-0.98	-0.46
IDEQ	4-Jan-99	194	5	5.2	5.27	1.61	1.65	-0.42	-0.60	-0.41
IDEQ	*14-Jan-99*	*315*			5.75			-0.17		
USGS	21-Jan-99	358	4	7.7	5.88	1.39	2.04	-0.07	-1.03	-0.26
USGS	10-Feb-99	235	2.7	3.4	5.46	0.99	1.23	-0.33	-1.58	-0.53
USGS	9-Mar-99	253	3.6	4.9	5.53	1.28	1.59	-0.30	-1.19	-0.43
USGS	9-Mar-99	254	3.6	4.9	5.54	1.28	1.59	-0.29	-1.19	-0.43
USGS	12-Apr-99	355	4.8	9.2	5.87	1.57	2.22	-0.08	-0.69	-0.17
USGS	20-Apr-99	1320	3.7	26.3	7.19	1.31	3.27	1.96	-1.15	0.91
USGS	6-May-99	664	3.7	13.2	6.50	1.31	2.58	0.57	-1.15	0.09
USGS	25-May-99	2460	3.1	41.0	7.81	1.13	3.71	4.36	-1.41	1.83
USGS	27-May-99	1740	4.1	38.4	7.46	1.41	3.65	2.84	-0.98	1.66
USGS	1-Jun-99	1450	4	31.2	7.28	1.39	3.44	2.23	-1.03	1.21
USGS	15-Jul-99	5	6	0.2	1.61	1.79	-1.82	-0.82	-0.18	-0.73
USGS	9-Aug-99	5	8	0.2	1.61	2.08	-1.54	-0.82	0.67	-0.73
USGS	30-Aug-99	5	8	0.2	1.61	2.08	-1.54	-0.82	0.67	-0.73

dPb

Concentration over time analysis

	dPb	SF268		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.008**	**-0.00004**
	Time	**Ln[COC]**	**[COC]**		
first:	15-May-91	1.86	6		
mid:	24-May-95	1.81	6		
last:	30-Aug-99	1.75	6		
	LnConc.=mTime+b >'96 r2, m:			**0.065**	**0.00095**
	17-Nov-98	1.38	4		
	30-Aug-99	1.65	5		

Load over time analysis

	dPb	SF268			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.005**	**0.00010**
	Time	**LnLoad**	**Load**		
first:	15-May-91	1.59	5		
mid:	24-May-95	1.74	6		
last:	30-Aug-99	1.91	7		
	LnLoad=mTime+b >'96 r2, m:			**0.098**	**-0.00618**
	17-Nov-98	2.38	11		
	30-Aug-99	0.61	2		

	max r2:	0.964		max r2:	0.856	
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.008	-0.00004	3.04	0.005	0.00010	-1.92
	0.008	-0.00004	3.04	0.005	0.00010	-1.92
	0.008	-0.00004	3.04	0.005	0.00010	-1.92
	0.008	-0.00004	3.04	0.005	0.00010	-1.92
	0.012	-0.00004	3.35	0.002	0.00007	-0.65
	0.008	-0.00004	3.07	0.001	0.00005	0.00
	0.017	-0.00006	3.77	0.000	0.00000	1.79
	0.033	-0.00008	4.60	0.002	-0.00006	4.03
	0.057	-0.00011	5.60	0.007	-0.00014	6.73
	0.060	-0.00011	5.75	0.011	-0.00017	7.99
	0.069	-0.00012	6.11	0.017	-0.00021	9.49
	0.072	-0.00013	6.29	0.023	-0.00025	10.94
	0.076	-0.00013	6.48	0.028	-0.00028	11.96
	0.088	-0.00014	6.89	0.038	-0.00033	13.80
	0.101	-0.00016	7.35	0.039	-0.00034	14.13
	0.094	-0.00015	7.23	0.037	-0.00034	13.95
	0.099	-0.00016	7.48	0.034	-0.00033	13.74
	0.115	-0.00017	8.03	0.027	-0.00030	12.61
	0.114	-0.00018	8.12	0.023	-0.00028	11.86
	0.121	-0.00019	8.47	0.021	-0.00027	11.56
	0.113	-0.00018	8.37	0.018	-0.00026	11.15
	0.121	-0.00020	8.77	0.021	-0.00029	12.12
	0.142	-0.00022	9.53	0.031	-0.00036	14.58
	0.142	-0.00022	9.74	0.045	-0.00044	17.46
	0.142	-0.00023	9.95	0.066	-0.00054	21.13
	0.134	-0.00023	9.89	0.087	-0.00063	24.52
	0.144	-0.00024	10.44	0.111	-0.00073	28.02
	0.194	-0.00028	12.00	0.112	-0.00076	28.99
	0.210	-0.00031	12.79	0.117	-0.00080	30.52
	0.214	-0.00032	13.28	0.113	-0.00081	30.88
	0.190	-0.00031	12.82	0.087	-0.00072	27.79
	0.180	-0.00031	12.94	0.073	-0.00068	26.27
	0.183	-0.00033	13.57	0.063	-0.00066	25.49
	0.206	-0.00037	14.97	0.043	-0.00057	22.23
	0.235	-0.00042	16.82	0.028	-0.00048	19.01
	0.202	-0.00041	16.50	0.013	-0.00036	14.53
	0.178	-0.00041	16.71	0.007	-0.00029	12.02
	0.192	-0.00048	19.18	0.007	-0.00032	13.30
	0.167	-0.00052	20.57	0.009	-0.00042	16.71
	0.173	-0.00068	26.21	0.020	-0.00080	30.56
	0.366	-0.00173	64.42	0.150	-0.00388	142.00
	0.270	-0.00163	60.55	0.158	-0.00466	170.43
	0.169	-0.00123	46.07	0.088	-0.00351	128.78
	0.176	-0.00138	51.43	0.041	-0.00253	93.04
	0.105	-0.00108	40.86	0.023	-0.00203	75.00

0.031	-0.00058	22.43	0.018	-0.00196	72.42
0.001	-0.00008	4.44	0.021	-0.00228	83.93
0.019	0.00044	-14.57	0.030	-0.00295	108.48
0.022	0.00052	-17.16	0.058	-0.00439	160.69
0.065	0.00095	-32.83	0.098	-0.00618	225.51
0.081	0.00115	-40.08	0.150	-0.00828	301.74
0.358	0.00239	-85.33	0.166	-0.00967	352.39
0.413	0.00286	-102.33	0.212	-0.01218	443.61
0.619	0.00389	-139.74	0.260	-0.01510	549.53
0.619	0.00389	-139.74	0.260	-0.01510	549.53
0.732	0.00478	-172.00	0.293	-0.01808	657.59
0.673	0.00470	-169.02	0.410	-0.02426	882.32
0.674	0.00508	-182.86	0.502	-0.02981	1084.11
0.695	0.00588	-212.02	0.696	-0.04148	1508.22
0.872	0.00735	-265.60	0.783	-0.04889	1777.56
0.910	0.00830	-300.02	0.800	-0.05455	1983.32
0.928	0.00910	-329.10	0.856	-0.06333	2302.76
0.964	0.00802	-289.83	0.820	-0.06153	2237.08

update for EV, CV:

dPb		**SF268**		
LN Analysis		**dPb**		
Load		**Load Data, EV=11.8 lbs/day CV=1.35**		
Avg:	**12**	**Load Data-based LN**		
SD:	**16**	u	ln tCd Load	tCd Load
CV:	**1.35**	3	5.0	150
Min:	**0.2**	0	1.95	7
Max:	**102**	-3	-1.11	0.3
Median:	**6**			
		12	11.8	
		1.35	1.35	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.959, EV=13.6lbs/day CV=2.08; max r2=0.99**

r2 u,lnLoad:	0.959	u	lnLoad	Load		
slope, m:	0.774	3	5.66	286		
intercept, b:	-1.376	0	1.78	6		
N:	63	-3	-2.10	0.1		
E[Load]:	13.6	Parameter Estimates			0.959	0.959
SD[Load]:	28	from LN regression			13.6	13.6
CV[Load]:	2.08	update graph label			2.1	2.08
					max r2	
	dPb	N: 67			0.992	

Date	Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
15-Jul-99	0.2	1	0.0093	-2.354	-1.824	0.959
9-Aug-99	0.2	2	0.0242	-1.974	-1.536	0.959
30-Aug-99	0.2	3	0.0390	-1.762	-1.536	0.965
4-Oct-91	1.6	4	0.0539	-1.608	0.445	0.986
5-Oct-91	1.6	5	0.0688	-1.485	0.452	0.988
3-Oct-91	1.7	6	0.0836	-1.381	0.505	0.990
19-Oct-98	1.7	7	0.0985	-1.290	0.520	0.991
5-Oct-94	1.7	8	0.1134	-1.209	0.549	0.991
1-Oct-91	1.8	9	0.1283	-1.135	0.594	0.992
17-Feb-94	2.0	10	0.1431	-1.066	0.702	0.992
27-Oct-98	2.1	11	0.1580	-1.003	0.726	0.992
1-Dec-93	2.1	12	0.1729	-0.943	0.728	0.992
16-Aug-94	2.2	13	0.1877	-0.886	0.798	0.992
17-Nov-98	2.3	14	0.2026	-0.832	0.844	0.991
23-Jul-94	2.3	15	0.2175	-0.781	0.850	0.991
29-Oct-93	2.4	16	0.2323	-0.731	0.871	0.991
21-Dec-93	2.4	17	0.2472	-0.683	0.871	0.990
16-Nov-94	2.4	18	0.2621	-0.637	0.880	0.990
14-Jan-99		19	0.2770	-0.592		
14-Sep-95	2.6	20	0.2918	-0.548	0.969	0.990
14-Dec-94	2.8	21	0.3067	-0.505	1.033	0.990
23-Sep-98	3.1	22	0.3216	-0.463	1.145	0.990
2-Oct-91	3.3	23	0.3364	-0.422	1.198	0.990
10-Feb-99	3.4	24	0.3513	-0.382	1.228	0.990
21-Jan-94	3.8	25	0.3662	-0.342	1.329	0.991
25-Aug-98	4.4	26	0.3810	-0.303	1.472	0.990
15-Dec-98	4.4	27	0.3959	-0.264	1.484	0.990
15-Aug-95	4.6	28	0.4108	-0.226	1.537	0.989
9-Mar-99	4.9	29	0.4257	-0.187	1.589	0.989
9-Mar-99	4.9	30	0.4405	-0.150	1.593	0.988
24-Jun-94	5.0	31	0.4554	-0.112	1.604	0.988
4-Jan-99	5.2	32	0.4703	-0.075	1.652	0.988
26-Jul-95	6.1	33	0.4851	-0.037	1.808	0.988
12-Jul-95	6.7	34	0.5000	0.000	1.897	0.987
24-Nov-98	6.7	35	0.5149	0.037	1.904	0.986
27-Jul-98	7.0	36	0.5297	0.075	1.952	0.985
21-Jan-99	7.7	37	0.5446	0.112	2.042	0.984
7-Mar-94	7.7	38	0.5595	0.150	2.044	0.983
16-May-91		39	0.5743	0.187		
15-May-91		40	0.5892	0.226		
9-Feb-95	8.5	41	0.6041	0.264	2.143	0.982
17-May-91		42	0.6190	0.303		
12-Apr-99	9.2	43	0.6338	0.342	2.216	0.980
11-Jan-95	10.2	44	0.6487	0.382	2.322	0.979
20-May-94	10.9	45	0.6636	0.422	2.390	0.978

8-Jun-94	11.3	46	0.6784	0.463	2.423	0.976
23-Mar-94	11.5	47	0.6933	0.505	2.445	0.975
6-Apr-94	11.6	48	0.7082	0.548	2.450	0.973
28-Jun-95	12.3	49	0.7230	0.592	2.509	0.971
5-Nov-97	12.5	50	0.7379	0.637	2.524	0.968
6-May-99	13.2	51	0.7528	0.683	2.582	0.965
8-Mar-95	14.3	52	0.7677	0.731	2.661	0.962
25-Jun-98	14.4	53	0.7825	0.781	2.669	0.958
3-May-94	15.3	54	0.7974	0.832	2.730	0.955
27-Apr-95	16.7	55	0.8123	0.886	2.814	0.952
18-Apr-94	21.7	56	0.8271	0.943	3.075	0.949
24-May-95	22.6	57	0.8420	1.003	3.116	0.947
13-Jun-95	22.6	58	0.8569	1.066	3.118	0.944
14-Apr-95	23.1	59	0.8717	1.135	3.139	0.936
20-Apr-99	26.3	60	0.8866	1.209	3.269	0.922
11-May-95	28.9	61	0.9015	1.290	3.365	0.906
1-Jun-99	31.2	62	0.9164	1.381	3.441	0.886
27-May-99	38.4	63	0.9312	1.485	3.648	0.855
25-May-99	41.0	64	0.9461	1.608	3.714	
11-May-98	41.3	65	0.9610	1.762	3.721	
23-Mar-95	47.1	66	0.9758	1.974	3.853	
24-Apr-98	102.5	67	0.9907	2.354	4.630	

update for EV, CV:

dPb		**SF268**		6	6.42
LN Analysis		**dPb**		0.37	0.368

Concentration

Avg:	6
SD:	2
CV:	0.37
Min:	3
Max:	15
Median:	6

Conc. Data, EV=6.42 ug/L CV=0.368

Data-based LN

u	ln[tCd]	[tCd]
3	2.9	18
0	1.80	6
-3	0.73	2

				0.977	0.977
u=mLn(Conc.)+b:				6.2	6.24
update for r2, EV, CV:	**r2=0.977, EV=6.24 ug/L CV=0.427; max r2=0.98**			0.427	0.427
	r2 u,lnConc:	0.977	u	lnConc.	Conc.
	slope, m:	2.444	3	2.97	20
	intercept, b:	-4.270	0	1.75	6
	N:	63	-3	0.52	2
	E[Conc]:	6.2	Parameter Estimates		
	SD[Conc]:	3	from LN regression		
	CV[Conc]:	0.43	update graph label		

	dPb	N: 67				max r2 0.979
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
15-May-91		1	0.0093	-2.354		
16-May-91		2	0.0242	-1.974		
17-May-91		3	0.0390	-1.762		
14-Jan-99		4	0.0539	-1.608		
10-Feb-99	2.7	5	0.0688	-1.485	0.993	0.977
25-May-99	3.1	6	0.0836	-1.381	1.131	0.979
9-Mar-99	3.6	7	0.0985	-1.290	1.281	0.978
9-Mar-99	3.6	8	0.1134	-1.209	1.281	0.977
20-Apr-99	3.7	9	0.1283	-1.135	1.308	0.976
6-May-99	3.7	10	0.1431	-1.066	1.308	0.975
3-Oct-91	4	11	0.1580	-1.003	1.386	0.974
4-Oct-91	4	12	0.1729	-0.943	1.386	0.973
5-Oct-91	4	13	0.1877	-0.886	1.386	0.971
11-Jan-95	4	14	0.2026	-0.832	1.386	0.970
21-Jan-99	4	15	0.2175	-0.781	1.386	0.969
1-Jun-99	4	16	0.2323	-0.731	1.386	0.968
15-Dec-98	4.1	17	0.2472	-0.683	1.411	0.968
27-May-99	4.1	18	0.2621	-0.637	1.411	0.967
19-Oct-98	4.6	19	0.2770	-0.592	1.526	0.969
17-Nov-98	4.6	20	0.2918	-0.548	1.526	0.967
12-Apr-99	4.8	21	0.3067	-0.505	1.569	0.966
1-Oct-91	5	22	0.3216	-0.463	1.609	0.964
1-Dec-93	5	23	0.3364	-0.422	1.609	0.963
17-Feb-94	5	24	0.3513	-0.382	1.609	0.961
7-Mar-94	5	25	0.3662	-0.342	1.609	0.959
18-Apr-94	5	26	0.3810	-0.303	1.609	0.957
23-Jul-94	5	27	0.3959	-0.264	1.609	0.956
4-Jan-99	5	28	0.4108	-0.226	1.609	0.955
29-Oct-93	6	29	0.4257	-0.187	1.792	0.955
21-Dec-93	6	30	0.4405	-0.150	1.792	0.957
21-Jan-94	6	31	0.4554	-0.112	1.792	0.958
6-Apr-94	6	32	0.4703	-0.075	1.792	0.959
20-May-94	6	33	0.4851	-0.037	1.792	0.958
24-Jun-94	6	34	0.5000	0.000	1.792	0.958
14-Dec-94	6	35	0.5149	0.037	1.792	0.956
9-Feb-95	6	36	0.5297	0.075	1.792	0.954
11-May-95	6	37	0.5446	0.112	1.792	0.951
24-May-95	6	38	0.5595	0.150	1.792	0.949
11-May-98	6	39	0.5743	0.187	1.792	0.946
27-Oct-98	6	40	0.5892	0.226	1.792	0.943
15-Jul-99	6	41	0.6041	0.264	1.792	0.941
3-May-94	7	42	0.6190	0.303	1.946	0.942
16-Aug-94	7	43	0.6338	0.342	1.946	0.943
5-Oct-94	7	44	0.6487	0.382	1.946	0.942
8-Mar-95	7	45	0.6636	0.422	1.946	0.940

27-Apr-95	7	46	0.6784	0.463	1.946	0.936
12-Jul-95	7	47	0.6933	0.505	1.946	0.932
14-Sep-95	7	48	0.7082	0.548	1.946	0.926
2-Oct-91	8	49	0.7230	0.592	2.079	0.920
23-Mar-94	8	50	0.7379	0.637	2.079	0.931
8-Jun-94	8	51	0.7528	0.683	2.079	0.941
16-Nov-94	8	52	0.7677	0.731	2.079	0.950
14-Apr-95	8	53	0.7825	0.781	2.079	0.958
15-Aug-95	8	54	0.7974	0.832	2.079	0.964
23-Sep-98	8	55	0.8123	0.886	2.079	0.968
24-Nov-98	8	56	0.8271	0.943	2.079	0.968
9-Aug-99	8	57	0.8420	1.003	2.079	0.965
30-Aug-99	8	58	0.8569	1.066	2.079	0.959
28-Jun-95	9	59	0.8717	1.135	2.197	0.956
26-Jul-95	9	60	0.8866	1.209	2.197	0.960
25-Aug-98	9	61	0.9015	1.290	2.197	0.955
23-Mar-95	10	62	0.9164	1.381	2.303	0.942
13-Jun-95	10	63	0.9312	1.485	2.303	0.963
25-Jun-98	10	64	0.9461	1.608	2.303	
27-Jul-98	11	65	0.9610	1.762	2.398	
5-Nov-97	13.1	66	0.9758	1.974	2.573	
24-Apr-98	15	67	0.9907	2.354	2.708	

update for EV, CV:

dPb		**SF268**			363	363
LN Analysis		**dPb**			1.28	1.28
Discharge, Q		**Q Data, EV=363 cfs CV=1.28**				
Avg:	**363**	**Q Data-based LN**				
SD:	**466**	u	lnQ	Q		
CV:	**1.28**	3	8.4	4305		
Min:	**5**	0	5.41	223		
Max:	**2,460**	-3	2.45	12		
Median:	**194**					

					0.935	0.935
					504.2	504
u=mLn(Q)+b:					2.34	2.34
update for r2, EV, CV:	**r2=0.935, EV=504 cfs CV=2.34; max r2=0.98**					
r2 u,lnQ:	0.935	u	lnQ	Q		
slope, m:	0.732	3	9.39	11942		
intercept, b:	-3.873	0	5.29	198		
N: 63		-3	1.19	3		
E[Q]:	504.2	Parameter Estimates				
SD[Q]:	1178	from LN regression				
CV[Q]:	2.34	update graph label				

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 #DIV/0! r2 forward
		N: 67				
update and rank for new data						
15-Jul-99	5	1	0.0093	-2.354	1.609	0.935
9-Aug-99	5	2	0.0242	-1.974	1.609	0.931
30-Aug-99	5	3	0.0390	-1.762	1.609	0.940
5-Oct-94	46	4	0.0539	-1.608	3.829	0.970
16-Nov-94	56	5	0.0688	-1.485	4.025	0.971
16-Aug-94	59	6	0.0836	-1.381	4.078	0.973
27-Oct-98	64	7	0.0985	-1.290	4.159	0.974
1-Oct-91	67.3	8	0.1134	-1.209	4.209	0.976
19-Oct-98	68	9	0.1283	-1.135	4.220	0.977
14-Sep-95	70	10	0.1431	-1.066	4.248	0.978
4-Oct-91	72.5	11	0.1580	-1.003	4.284	0.979
5-Oct-91	73	12	0.1729	-0.943	4.290	0.979
23-Sep-98	73	13	0.1877	-0.886	4.290	0.979
29-Oct-93	74	14	0.2026	-0.832	4.304	0.979
21-Dec-93	74	15	0.2175	-0.781	4.304	0.978
17-Feb-94	75	16	0.2323	-0.731	4.317	0.977
2-Oct-91	77	17	0.2472	-0.683	4.344	0.976
3-Oct-91	77	18	0.2621	-0.637	4.344	0.975
1-Dec-93	77	19	0.2770	-0.592	4.344	0.974
23-Jul-94	87	20	0.2918	-0.548	4.466	0.974
14-Dec-94	87	21	0.3067	-0.505	4.466	0.973
25-Aug-98	90	22	0.3216	-0.463	4.500	0.973
17-Nov-98	94	23	0.3364	-0.422	4.543	0.973
15-Aug-95	108	24	0.3513	-0.382	4.682	0.974
21-Jan-94	117	25	0.3662	-0.342	4.762	0.975
27-Jul-98	119	26	0.3810	-0.303	4.779	0.975
26-Jul-95	126	27	0.3959	-0.264	4.836	0.975
24-Jun-94	154	28	0.4108	-0.226	5.037	0.976
24-Nov-98	156	29	0.4257	-0.187	5.050	0.975
12-Jul-95	177	30	0.4405	-0.150	5.176	0.975
5-Nov-97	177	31	0.4554	-0.112	5.176	0.974
4-Jan-99	194	32	0.4703	-0.075	5.268	0.973
15-Dec-98	200	33	0.4851	-0.037	5.298	0.971
10-Feb-99	235	34	0.5000	0.000	5.460	0.970
9-Mar-99	253	35	0.5149	0.037	5.533	0.969
28-Jun-95	254	36	0.5297	0.075	5.537	0.968
9-Mar-99	254	37	0.5446	0.112	5.537	0.966
8-Jun-94	262	38	0.5595	0.150	5.568	0.964
9-Feb-95	264	39	0.5743	0.187	5.576	0.962
23-Mar-94	268	40	0.5892	0.226	5.591	0.959
25-Jun-98	268	41	0.6041	0.264	5.591	0.957
7-Mar-94	287	42	0.6190	0.303	5.659	0.955
14-Jan-99		43	0.6338	0.342		
20-May-94	338	44	0.6487	0.382	5.823	0.952
12-Apr-99	355	45	0.6636	0.422	5.872	0.949

21-Jan-99	358	46	0.6784	0.463	5.881	0.945
6-Apr-94	359	47	0.6933	0.505	5.883	0.941
8-Mar-95	380	48	0.7082	0.548	5.940	0.939
3-May-94	407	49	0.7230	0.592	6.009	0.937
13-Jun-95	420	50	0.7379	0.637	6.040	0.935
27-Apr-95	443	51	0.7528	0.683	6.094	0.936
11-Jan-95	474	52	0.7677	0.731	6.161	0.942
14-Apr-95	536	53	0.7825	0.781	6.284	0.958
6-May-99	664	54	0.7974	0.832	6.498	0.976
24-May-95	699	55	0.8123	0.886	6.550	0.977
18-Apr-94	805	56	0.8271	0.943	6.691	0.983
23-Mar-95	876	57	0.8420	1.003	6.775	0.979
11-May-95	896	58	0.8569	1.066	6.798	0.972
16-May-91		59	0.8717	1.135		
15-May-91		60	0.8866	1.209		
17-May-91		61	0.9015	1.290		
24-Apr-98	1270	62	0.9164	1.381	7.147	0.955
11-May-98	1280	63	0.9312	1.485	7.155	0.980
20-Apr-99	1320	64	0.9461	1.608	7.185	0.996
1-Jun-99	1450	65	0.9610	1.762	7.279	1.000
27-May-99	1740	66	0.9758	1.974	7.462	1.000
25-May-99	2460	67	0.9907	2.354	7.808	#DIV/0!

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF268	**Date:**	20-Jun-00
Chemical:	dZn	**Analyst:**	J.MacLachlan
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	35,104	403	947	1,264	0.00	0.00	0.00
SD:	954	468	425	779	1.00	1.00	1.00
CV:	0.03	1.16	0.45	0.62			
Min:	33,373	46	184	413.4	-0.76	-1.80	-1.09
Max:	36,402	2,460	1,780	3,865	4.39	1.96	3.34
Median:	34,843	253	876	1,128	-0.32	-0.17	-0.18

dZn	SF268		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.544)		update r2	0.54	0.544	r2:	0.032	0.037
r2 Q,[COC]:	0.54	[tCd]	Q		m:	0.0879	0.00021
slope, m:	-0.7	1,185	46.0		b:	-2681	-1.82
intercept, b:	1216.1	947	403.2				
N: 67		-429	2460				
LnConc. = mLn(Q)+b (r2=0.812)		update r2	0.81	0.812			
r2 lnQ,ln[COC]:	0.81	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.46	7.48	3.83	1,772	46		
intercept, b:	9.24	6.48	6.00	653	403		
N: 67		5.65	7.81	285	2,460		

N= 67

	Sampling Date	Q Discharge cfs	dZn Concentration ug/L	dZn Load lbs/day	Ln Q	Ln dZn Conc.	Ln dZn Load	dZn SF268 Standardized Values = (x - Avg)/SD Q	Conc	Load	for graph 0
update for new data											
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis				
MFG	15-May-91	1040	451	2523.4	6.95	6.11	7.83	1.36	-1.17	1.62	
MFG	16-May-91	1010	430	2336.5	6.92	6.06	7.76	1.30	-1.22	1.38	
MFG	17-May-91	1100	368	2177.8	7.00	5.91	7.69	1.49	-1.36	1.17	
MFG	1-Oct-91	67.3	1520	550.4	4.21	7.33	6.31	-0.72	1.35	-0.92	
MFG	2-Oct-91	77	1660	687.7	4.34	7.41	6.53	-0.70	1.68	-0.74	
MFG	3-Oct-91	77	1650	683.5	4.34	7.41	6.53	-0.70	1.66	-0.75	
MFG	4-Oct-91	72.5	1750	682.6	4.28	7.47	6.53	-0.71	1.89	-0.75	
MFG	5-Oct-91	73	1660	651.9	4.29	7.41	6.48	-0.70	1.68	-0.79	
IDEQ	29-Oct-93	74	1300	517.6	4.30	7.17	6.25	-0.70	0.83	-0.96	
IDEQ	1-Dec-93	77	1340	555.1	4.34	7.20	6.32	-0.70	0.93	-0.91	
IDEQ	21-Dec-93	74	1520	605.1	4.30	7.33	6.41	-0.70	1.35	-0.85	
IDEQ	21-Jan-94	117	1080	679.8	4.76	6.98	6.52	-0.61	0.31	-0.75	
IDEQ	17-Feb-94	75	1410	568.9	4.32	7.25	6.34	-0.70	1.09	-0.89	
IDEQ	7-Mar-94	287	1020	1574.9	5.66	6.93	7.36	-0.25	0.17	0.40	
IDEQ	23-Mar-94	268	1130	1629.3	5.59	7.03	7.40	-0.29	0.43	0.47	
IDEQ	6-Apr-94	359	735	1419.6	5.88	6.60	7.26	-0.09	-0.50	0.20	
IDEQ	18-Apr-94	805	494	2139.5	6.69	6.20	7.67	0.86	-1.07	1.12	
IDEQ	3-May-94	407	541	1184.6	6.01	6.29	7.08	0.01	-0.95	-0.10	
IDEQ	20-May-94	338	526	956.5	5.82	6.27	6.86	-0.14	-0.99	-0.39	
IDEQ	8-Jun-94	262	800	1127.6	5.57	6.68	7.03	-0.30	-0.35	-0.18	
IDEQ	24-Jun-94	154	932	772.2	5.04	6.84	6.65	-0.53	-0.03	-0.63	
IDEQ	23-Jul-94	87	984	460.6	4.47	6.89	6.13	-0.68	0.09	-1.03	
IDEQ	16-Aug-94	59	1380	438.0	4.08	7.23	6.08	-0.73	1.02	-1.06	
IDEQ	5-Oct-94	46	1720	425.7	3.83	7.45	6.05	-0.76	1.82	-1.08	
IDEQ	16-Nov-94	56	1770	533.3	4.03	7.48	6.28	-0.74	1.94	-0.94	
IDEQ	14-Dec-94	87	1780	833.1	4.47	7.48	6.73	-0.68	1.96	-0.55	
IDEQ	11-Jan-95	474	780	1989.1	6.16	6.66	7.60	0.15	-0.39	0.93	
IDEQ	9-Feb-95	264	842	1195.9	5.58	6.74	7.09	-0.30	-0.25	-0.09	
IDEQ	8-Mar-95	380	876	1790.9	5.94	6.78	7.49	-0.05	-0.17	0.68	
IDEQ	23-Mar-95	876	820	3864.6	6.78	6.71	8.26	1.01	-0.30	3.34	
IDEQ	14-Apr-95	536	843	2430.9	6.28	6.74	7.80	0.28	-0.24	1.50	
IDEQ	27-Apr-95	443	780	1859.0	6.09	6.66	7.53	0.08	-0.39	0.76	
IDEQ	11-May-95	896	427	2058.3	6.80	6.06	7.63	1.05	-1.22	1.02	
IDEQ	24-May-95	699	465	1748.7	6.55	6.14	7.47	0.63	-1.13	0.62	
IDEQ	13-Jun-95	420	526	1188.5	6.04	6.27	7.08	0.04	-0.99	-0.10	
IDEQ	28-Jun-95	254	699	955.2	5.54	6.55	6.86	-0.32	-0.58	-0.40	
IDEQ	12-Jul-95	177	841	800.9	5.18	6.73	6.69	-0.48	-0.25	-0.59	
IDEQ	26-Jul-95	126	1010	684.7	4.84	6.92	6.53	-0.59	0.15	-0.74	
IDEQ	15-Aug-95	108	1160	674.0	4.68	7.06	6.51	-0.63	0.50	-0.76	
IDEQ	14-Sep-95	70	1280	482.0	4.25	7.15	6.18	-0.71	0.78	-1.00	
URS	5-Nov-97	177	1190	1133.2	5.18	7.08	7.03	-0.48	0.57	-0.17	
IDEQ	24-Apr-98	1270	425	2903.9	7.15	6.05	7.97	1.85	-1.23	2.11	
URS	11-May-98	1280	324	2231.2	7.15	5.78	7.71	1.87	-1.47	1.24	
IDEQ	25-Jun-98	268	708	1020.8	5.59	6.56	6.93	-0.29	-0.56	-0.31	
IDEQ	27-Jul-98	119	748	478.9	4.78	6.62	6.17	-0.61	-0.47	-1.01	

IDEQ	25-Aug-98	90	1020	493.9	4.50	6.93	6.20	-0.67	0.17	-0.99
IDEQ	23-Sep-98	73	1100	432.0	4.29	7.00	6.07	-0.70	0.36	-1.07
USGS	19-Oct-98	68	1130	413.4	4.22	7.03	6.02	-0.72	0.43	-1.09
IDEQ	27-Oct-98	64	1290	444.2	4.16	7.16	6.10	-0.72	0.81	-1.05
USGS	17-Nov-98	94	1410	713.1	4.54	7.25	6.57	-0.66	1.09	-0.71
IDEQ	24-Nov-98	156	1580	1326.1	5.05	7.37	7.19	-0.53	1.49	0.08
USGS	15-Dec-98	200	1110	1194.4	5.30	7.01	7.09	-0.43	0.38	-0.09
IDEQ	4-Jan-99	194	1010	1054.2	5.27	6.92	6.96	-0.45	0.15	-0.27
IDEQ	14-Jan-99	315	762	1291.4	5.75	6.64	7.16	-0.19	-0.43	0.04
USGS	21-Jan-99	358	778	1498.5	5.88	6.66	7.31	-0.10	-0.40	0.30
USGS	10-Feb-99	235	1060	1340.2	5.46	6.97	7.20	-0.36	0.27	0.10
USGS	9-Mar-99	253	1060	1442.8	5.53	6.97	7.27	-0.32	0.27	0.23
USGS	9-Mar-99	254	1060	1448.5	5.54	6.97	7.28	-0.32	0.27	0.24
USGS	12-Apr-99	355	662	1264.4	5.87	6.50	7.14	-0.10	-0.67	0.00
USGS	20-Apr-99	1320	505	3586.3	7.19	6.22	8.18	1.96	-1.04	2.98
USGS	6-May-99	664	561	2004.1	6.50	6.33	7.60	0.56	-0.91	0.95
USGS	25-May-99	2460	184	2435.2	7.81	5.21	7.80	4.39	-1.80	1.50
USGS	27-May-99	1740	228	2134.4	7.46	5.43	7.67	2.85	-1.69	1.12
USGS	1-Jun-99	1450	237	1848.8	7.28	5.47	7.52	2.23	-1.67	0.75
USGS	15-Jul-99	406	444	969.8	6.01	6.10	6.88	0.01	-1.18	-0.38
USGS	9-Aug-99	168	714	645.3	5.12	6.57	6.47	-0.50	-0.55	-0.79
USGS	30-Aug-99	113	819	497.9	4.73	6.71	6.21	-0.62	-0.30	-0.98

dZn

Concentration over time analysis

	dZn	SF268		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.073**	**-0.00015**
	Time	**Ln[COC]**	**[COC]**		
first:	15-May-91	6.99	1,085		
mid:	24-May-95	6.77	872		
last:	30-Aug-99	6.54	692		
	LnConc.=mTime+b >'96 r2, m:			**0.383**	**-0.00442**
	17-Nov-98	7.09	1,203		
	30-Aug-99	5.83	340		

Load over time analysis

	dZn	SF268		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.009**	**0.00006**
	Time	**LnLoad**	**Load**		
first:	15-May-91	6.86	954		
mid:	24-May-95	6.95	1,040		
last:	30-Aug-99	7.04	1,140		
	LnLoad=mTime+b >'96 r2, m:			**0.006**	**-0.00044**
	17-Nov-98	7.25	1,412		
	30-Aug-99	7.13	1,244		

max r2: 0.990

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.073	-0.00015	11.94
0.098	-0.00018	12.89
0.134	-0.00021	14.03
0.191	-0.00025	15.55
0.177	-0.00024	15.37
0.158	-0.00024	15.05
0.139	-0.00023	14.67
0.116	-0.00021	14.13
0.094	-0.00019	13.57
0.085	-0.00019	13.29
0.076	-0.00018	12.95
0.064	-0.00016	12.44
0.059	-0.00016	12.28
0.049	-0.00014	11.78
0.045	-0.00014	11.64
0.039	-0.00013	11.35
0.041	-0.00014	11.61
0.055	-0.00016	12.46
0.069	-0.00019	13.27
0.088	-0.00021	14.22
0.092	-0.00022	14.58
0.090	-0.00023	14.72
0.087	-0.00023	14.76
0.072	-0.00021	14.14
0.052	-0.00018	12.99
0.032	-0.00014	11.63
0.015	-0.00010	10.04
0.015	-0.00010	10.13
0.014	-0.00010	10.03
0.011	-0.00009	9.81
0.010	-0.00009	9.73
0.008	-0.00008	9.53
0.007	-0.00008	9.57
0.023	-0.00015	12.04
0.047	-0.00023	14.93
0.080	-0.00032	18.20
0.103	-0.00040	21.05
0.117	-0.00048	23.95
0.118	-0.00057	27.00
0.106	-0.00068	31.26
0.092	-0.00111	46.61
0.064	-0.00107	45.14
0.126	-0.00161	64.70
0.295	-0.00259	100.34
0.360	-0.00312	119.41

max r2: 0.997

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.009	0.00006	4.90
0.019	0.00009	3.85
0.034	0.00012	2.74
0.055	0.00015	1.53
0.044	0.00014	1.98
0.038	0.00013	2.20
0.032	0.00013	2.46
0.026	0.00012	2.78
0.019	0.00011	3.25
0.013	0.00009	3.91
0.008	0.00007	4.54
0.005	0.00005	5.13
0.003	0.00004	5.62
0.001	0.00002	6.37
0.002	0.00003	5.92
0.003	0.00005	5.38
0.005	0.00006	4.97
0.011	0.00009	3.93
0.012	0.00009	3.66
0.012	0.00009	3.70
0.013	0.00010	3.47
0.009	0.00009	3.87
0.003	0.00005	5.28
0.000	0.00000	6.99
0.003	-0.00005	8.95
0.012	-0.00010	10.67
0.019	-0.00013	11.66
0.012	-0.00010	10.77
0.012	-0.00011	10.98
0.007	-0.00009	10.15
0.000	0.00000	6.90
0.005	0.00007	4.43
0.015	0.00013	2.30
0.039	0.00022	-0.84
0.072	0.00031	-4.23
0.093	0.00038	-6.75
0.104	0.00044	-8.93
0.104	0.00049	-10.84
0.090	0.00054	-12.35
0.074	0.00062	-15.47
0.013	0.00044	-9.04
0.018	0.00062	-15.43
0.085	0.00139	-43.14
0.199	0.00226	-74.99
0.232	0.00267	-89.56

0.423	-0.00367	139.61	0.179	0.00244	-81.46
0.435	-0.00401	151.70	0.124	0.00211	-69.48
0.431	-0.00424	160.22	0.063	0.00150	-47.34
0.418	-0.00440	165.83	0.013	0.00066	-16.83
0.383	-0.00442	166.61	0.006	-0.00044	23.25
0.329	-0.00422	159.46	0.053	-0.00129	53.94
0.248	-0.00371	141.09	0.068	-0.00160	65.37
0.195	-0.00346	131.98	0.104	-0.00215	85.21
0.148	-0.00317	121.19	0.179	-0.00303	117.22
0.129	-0.00323	123.51	0.244	-0.00388	148.23
0.104	-0.00322	123.26	0.299	-0.00487	183.88
0.037	-0.00206	80.86	0.412	-0.00649	242.86
0.001	-0.00024	15.04	0.509	-0.00800	297.81
0.100	0.00357	-123.51	0.709	-0.01117	412.81
0.275	0.00629	-222.62	0.962	-0.01448	533.25
0.492	0.00956	-341.33	0.950	-0.01412	520.40
0.983	0.01502	-539.85	0.992	-0.01584	582.85
0.990	0.01424	-511.58	0.997	-0.01523	560.50

update for EV, CV:

dZn **SF268**

LN Analysis **dZn**

Load **Load Data, EV=1260 lbs/day CV=0.616**

Avg:	**1,264**	**Load Data-based LN**		
SD:	**779**	u	ln tCd Load	tCd Load
CV:	**0.62**	3	8.7	5901
Min:	**413.4**	0	6.98	1076
Max:	**3,865**	-3	5.28	196.3
Median:	**1,128**			
		1,264	1260	
		0.62	0.616	

u=mLn(Load)+ b:

update for r2, EV, CV: **r2=0.964, EV=1280lbs/day CV=0.691; max r2=0.98**

r2 u,lnLoad:	0.964	u	lnLoad	Load		
slope, m:	1.600	3	8.84	6889		
intercept, b:	#######	0	6.96	1056		
N:	67	-3	5.09	161.9		
E[Load]:	1284.1	Parameter Estimates			0.964	0.964
SD[Load]:	888	from LN regression			1284.1	1280
CV[Load]:	0.69	update graph label			0.7	0.691
					max r2	
	dZn	N: 67			0.980	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
19-Oct-98	**413.4**	1	0.0093	-2.354	6.024	0.964
5-Oct-94	**425.7**	2	0.0242	-1.974	6.054	0.974
23-Sep-98	**432.0**	3	0.0390	-1.762	6.068	0.978
16-Aug-94	**438.0**	4	0.0539	-1.608	6.082	0.980
27-Oct-98	**444.2**	5	0.0688	-1.485	6.096	0.980
23-Jul-94	**460.6**	6	0.0836	-1.381	6.132	0.980
27-Jul-98	**478.9**	7	0.0985	-1.290	6.171	0.980
14-Sep-95	**482.0**	8	0.1134	-1.209	6.178	0.980
25-Aug-98	**493.9**	9	0.1283	-1.135	6.202	0.979
30-Aug-99	**497.9**	10	0.1431	-1.066	6.210	0.978
29-Oct-93	**517.6**	11	0.1580	-1.003	6.249	0.977
16-Nov-94	**533.3**	12	0.1729	-0.943	6.279	0.976
1-Oct-91	**550.4**	13	0.1877	-0.886	6.311	0.974
1-Dec-93	**555.1**	14	0.2026	-0.832	6.319	0.973
17-Feb-94	**568.9**	15	0.2175	-0.781	6.344	0.972
21-Dec-93	**605.1**	16	0.2323	-0.731	6.405	0.971
9-Aug-99	**645.3**	17	0.2472	-0.683	6.470	0.970
5-Oct-91	**651.9**	18	0.2621	-0.637	6.480	0.968
15-Aug-95	**674.0**	19	0.2770	-0.592	6.513	0.967
21-Jan-94	**679.8**	20	0.2918	-0.548	6.522	0.965
4-Oct-91	**682.6**	21	0.3067	-0.505	6.526	0.964
3-Oct-91	**683.5**	22	0.3216	-0.463	6.527	0.963
26-Jul-95	**684.7**	23	0.3364	-0.422	6.529	0.963
2-Oct-91	**687.7**	24	0.3513	-0.382	6.533	0.964
17-Nov-98	**713.1**	25	0.3662	-0.342	6.570	0.967
24-Jun-94	**772.2**	26	0.3810	-0.303	6.649	0.971
12-Jul-95	**800.9**	27	0.3959	-0.264	6.686	0.973
14-Dec-94	**833.1**	28	0.4108	-0.226	6.725	0.976
28-Jun-95	**955.2**	29	0.4257	-0.187	6.862	0.979
20-May-94	**956.5**	30	0.4405	-0.150	6.863	0.978
15-Jul-99	**969.8**	31	0.4554	-0.112	6.877	0.978
25-Jun-98	**1020.8**	32	0.4703	-0.075	6.928	0.978
4-Jan-99	**1054.2**	33	0.4851	-0.037	6.960	0.978
8-Jun-94	**1127.6**	34	0.5000	0.000	7.028	0.978
5-Nov-97	**1133.2**	35	0.5149	0.037	7.033	0.977
3-May-94	**1184.6**	36	0.5297	0.075	7.077	0.976
13-Jun-95	**1188.5**	37	0.5446	0.112	7.080	0.974
15-Dec-98	**1194.4**	38	0.5595	0.150	7.085	0.973
9-Feb-95	**1195.9**	39	0.5743	0.187	7.087	0.972
12-Apr-99	**1264.4**	40	0.5892	0.226	7.142	0.972
14-Jan-99	**1291.4**	41	0.6041	0.264	7.163	0.972
24-Nov-98	**1326.1**	42	0.6190	0.303	7.190	0.971
10-Feb-99	**1340.2**	43	0.6338	0.342	7.201	0.970
6-Apr-94	**1419.6**	44	0.6487	0.382	7.258	0.970
9-Mar-99	**1442.8**	45	0.6636	0.422	7.274	0.969

9-Mar-99	1448.5	46	0.6784	0.463	7.278	0.968
21-Jan-99	1498.5	47	0.6933	0.505	7.312	0.970
7-Mar-94	1574.9	48	0.7082	0.548	7.362	0.971
23-Mar-94	1629.3	49	0.7230	0.592	7.396	0.971
24-May-95	1748.7	50	0.7379	0.637	7.467	0.970
8-Mar-95	1790.9	51	0.7528	0.683	7.490	0.967
1-Jun-99	1848.8	52	0.7677	0.731	7.522	0.964
27-Apr-95	1859.0	53	0.7825	0.781	7.528	0.960
11-Jan-95	1989.1	54	0.7974	0.832	7.595	0.956
6-May-99	2004.1	55	0.8123	0.886	7.603	0.955
11-May-95	2058.3	56	0.8271	0.943	7.630	0.952
27-May-99	2134.4	57	0.8420	1.003	7.666	0.950
18-Apr-94	2139.5	58	0.8569	1.066	7.668	0.952
17-May-91	2177.8	59	0.8717	1.135	7.686	0.949
11-May-98	2231.2	60	0.8866	1.209	7.710	0.944
16-May-91	2336.5	61	0.9015	1.290	7.756	0.935
14-Apr-95	2430.9	62	0.9164	1.381	7.796	0.927
25-May-99	2435.2	63	0.9312	1.485	7.798	0.920
15-May-91	2523.4	64	0.9461	1.608	7.833	
24-Apr-98	2903.9	65	0.9610	1.762	7.974	
20-Apr-99	3586.3	66	0.9758	1.974	8.185	
23-Mar-95	3864.6	67	0.9907	2.354	8.260	

update for EV, CV:

dZn		**SF268**	947	947
LN Analysis		**dZn**	0.45	0.449

Concentration

Conc. Data, EV=947 ug/L CV=0.449

Avg:	**947**
SD:	**425**
CV:	**0.45**
Min:	**184**
Max:	**1,780**
Median:	**876**

Data-based LN

u	ln[tCd]	[tCd]
3	8.0	3122
0	6.76	864
-3	5.48	239

				0.950	0.95
u=mLn(Conc.)+b:				976.2	976
update for r2, EV, CV:	**r2=0.95, EV=976 ug/L CV=0.594; max r2=0.96**			0.594	0.594
r2 u,lnConc:	0.950	u	lnConc.	Conc.	
slope, m:	1.818	3	8.38	4370	
intercept, b:	-12.239	0	6.73	839	
N:	67	-3	5.08	161	
E[Conc]:	976.2	Parameter Estimates			
SD[Conc]:	580	from LN regression			
CV[Conc]:	0.59	update graph label			

	dZn	N: 67				max r2 0.958
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
25-May-99	184	1	0.0093	-2.354	5.215	0.950
27-May-99	228	2	0.0242	-1.974	5.429	0.949
1-Jun-99	237	3	0.0390	-1.762	5.468	0.949
11-May-98	324	4	0.0539	-1.608	5.781	0.956
17-May-91	368	5	0.0688	-1.485	5.908	0.955
24-Apr-98	425	6	0.0836	-1.381	6.052	0.953
11-May-95	427	7	0.0985	-1.290	6.057	0.951
16-May-91	430	8	0.1134	-1.209	6.064	0.948
15-Jul-99	444	9	0.1283	-1.135	6.096	0.947
15-May-91	451	10	0.1431	-1.066	6.111	0.945
24-May-95	465	11	0.1580	-1.003	6.142	0.945
18-Apr-94	494	12	0.1729	-0.943	6.203	0.945
20-Apr-99	505	13	0.1877	-0.886	6.225	0.945
20-May-94	526	14	0.2026	-0.832	6.265	0.945
13-Jun-95	526	15	0.2175	-0.781	6.265	0.946
3-May-94	541	16	0.2323	-0.731	6.293	0.949
6-May-99	561	17	0.2472	-0.683	6.330	0.953
12-Apr-99	662	18	0.2621	-0.637	6.495	0.958
28-Jun-95	699	19	0.2770	-0.592	6.550	0.957
25-Jun-98	708	20	0.2918	-0.548	6.562	0.955
9-Aug-99	714	21	0.3067	-0.505	6.571	0.953
6-Apr-94	735	22	0.3216	-0.463	6.600	0.951
27-Jul-98	748	23	0.3364	-0.422	6.617	0.948
14-Jan-99	762	24	0.3513	-0.382	6.636	0.946
21-Jan-99	778	25	0.3662	-0.342	6.657	0.943
11-Jan-95	780	26	0.3810	-0.303	6.659	0.941
27-Apr-95	780	27	0.3959	-0.264	6.659	0.938
8-Jun-94	800	28	0.4108	-0.226	6.685	0.936
30-Aug-99	819	29	0.4257	-0.187	6.708	0.934
23-Mar-95	820	30	0.4405	-0.150	6.709	0.931
12-Jul-95	841	31	0.4554	-0.112	6.735	0.930
9-Feb-95	842	32	0.4703	-0.075	6.736	0.927
14-Apr-95	843	33	0.4851	-0.037	6.737	0.927
8-Mar-95	876	34	0.5000	0.000	6.775	0.929
24-Jun-94	932	35	0.5149	0.037	6.837	0.929
23-Jul-94	984	36	0.5297	0.075	6.892	0.927
26-Jul-95	1010	37	0.5446	0.112	6.918	0.922
4-Jan-99	1010	38	0.5595	0.150	6.918	0.918
7-Mar-94	1020	39	0.5743	0.187	6.928	0.913
25-Aug-98	1020	40	0.5892	0.226	6.928	0.907
10-Feb-99	1060	41	0.6041	0.264	6.966	0.902
9-Mar-99	1060	42	0.6190	0.303	6.966	0.895
9-Mar-99	1060	43	0.6338	0.342	6.966	0.888
21-Jan-94	1080	44	0.6487	0.382	6.985	0.881
23-Sep-98	1100	45	0.6636	0.422	7.003	0.874

15-Dec-98	1110	46	0.6784	0.463	7.012	0.866
23-Mar-94	1130	47	0.6933	0.505	7.030	0.858
19-Oct-98	1130	48	0.7082	0.548	7.030	0.850
15-Aug-95	1160	49	0.7230	0.592	7.056	0.847
5-Nov-97	1190	50	0.7379	0.637	7.082	0.847
14-Sep-95	1280	51	0.7528	0.683	7.155	0.850
27-Oct-98	1290	52	0.7677	0.731	7.162	0.836
29-Oct-93	1300	53	0.7825	0.781	7.170	0.823
1-Dec-93	1340	54	0.7974	0.832	7.200	0.815
16-Aug-94	1380	55	0.8123	0.886	7.230	0.803
17-Feb-94	1410	56	0.8271	0.943	7.251	0.787
17-Nov-98	1410	57	0.8420	1.003	7.251	0.769
1-Oct-91	1520	58	0.8569	1.066	7.326	0.813
21-Dec-93	1520	59	0.8717	1.135	7.326	0.787
24-Nov-98	1580	60	0.8866	1.209	7.365	0.821
3-Oct-91	1650	61	0.9015	1.290	7.409	0.849
2-Oct-91	1660	62	0.9164	1.381	7.415	0.804
5-Oct-91	1660	63	0.9312	1.485	7.415	0.732
5-Oct-94	1720	64	0.9461	1.608	7.450	
4-Oct-91	1750	65	0.9610	1.762	7.467	
16-Nov-94	1770	66	0.9758	1.974	7.479	
14-Dec-94	1780	67	0.9907	2.354	7.484	

update for EV, CV:

dZn		SF268			403	403
LN Analysis		dZn			1.16	1.16
Discharge, Q		**Q Data, EV=403 cfs CV=1.16**				
Avg:	403	**Q Data-based LN**				
SD:	468	u	lnQ	Q		
CV:	1.16	3	8.3	4210		
Min:	46	0	5.57	263		
Max:	2,460	-3	2.80	16		
Median:	253					
					0.953	0.953
					417.7	418
	u=mLn(Q)+b:				1.48	1.48
update for r2, EV, CV:	**r2=0.953, EV=418 cfs CV=1.48; max r2=0.99**					
	r2 u,lnQ:	0.953	u	lnQ	Q	
	slope, m:	0.929	3	8.69	5915	
	intercept, b:	-5.067	0	5.46	234	
	N:	67	-3	2.23	9	
	E[Q]:	417.7	Parameter Estimates			
	SD[Q]:	618	from LN regression			
	CV[Q]:	1.48	update graph label			

Date	Q Discharge cfs Ranked	N: 67 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.985 r2 forward
update and rank for new data						
5-Oct-94	46	1	0.0093	-2.354	3.829	0.953
16-Nov-94	56	2	0.0242	-1.974	4.025	0.961
16-Aug-94	59	3	0.0390	-1.762	4.078	0.967
27-Oct-98	64	4	0.0539	-1.608	4.159	0.972
1-Oct-91	67.3	5	0.0688	-1.485	4.209	0.975
19-Oct-98	68	6	0.0836	-1.381	4.220	0.979
14-Sep-95	70	7	0.0985	-1.290	4.248	0.981
4-Oct-91	72.5	8	0.1134	-1.209	4.284	0.982
5-Oct-91	73	9	0.1283	-1.135	4.290	0.984
23-Sep-98	73	10	0.1431	-1.066	4.290	0.984
29-Oct-93	74	11	0.1580	-1.003	4.304	0.985
21-Dec-93	74	12	0.1729	-0.943	4.304	0.984
17-Feb-94	75	13	0.1877	-0.886	4.317	0.984
2-Oct-91	77	14	0.2026	-0.832	4.344	0.983
3-Oct-91	77	15	0.2175	-0.781	4.344	0.982
1-Dec-93	77	16	0.2323	-0.731	4.344	0.982
23-Jul-94	87	17	0.2472	-0.683	4.466	0.981
14-Dec-94	87	18	0.2621	-0.637	4.466	0.980
25-Aug-98	90	19	0.2770	-0.592	4.500	0.980
17-Nov-98	94	20	0.2918	-0.548	4.543	0.979
15-Aug-95	108	21	0.3067	-0.505	4.682	0.979
30-Aug-99	113	22	0.3216	-0.463	4.727	0.979
21-Jan-94	117	23	0.3364	-0.422	4.762	0.978
27-Jul-98	119	24	0.3513	-0.382	4.779	0.978
26-Jul-95	126	25	0.3662	-0.342	4.836	0.978
24-Jun-94	154	26	0.3810	-0.303	5.037	0.978
24-Nov-98	156	27	0.3959	-0.264	5.050	0.977
9-Aug-99	168	28	0.4108	-0.226	5.124	0.976
12-Jul-95	177	29	0.4257	-0.187	5.176	0.975
5-Nov-97	177	30	0.4405	-0.150	5.176	0.973
4-Jan-99	194	31	0.4554	-0.112	5.268	0.972
15-Dec-98	200	32	0.4703	-0.075	5.298	0.971
10-Feb-99	235	33	0.4851	-0.037	5.460	0.969
9-Mar-99	253	34	0.5000	0.000	5.533	0.968
28-Jun-95	254	35	0.5149	0.037	5.537	0.967
9-Mar-99	254	36	0.5297	0.075	5.537	0.966
8-Jun-94	262	37	0.5446	0.112	5.568	0.964
9-Feb-95	264	38	0.5595	0.150	5.576	0.962
23-Mar-94	268	39	0.5743	0.187	5.591	0.959
25-Jun-98	268	40	0.5892	0.226	5.591	0.957
7-Mar-94	287	41	0.6041	0.264	5.659	0.955
14-Jan-99	315	42	0.6190	0.303	5.753	0.952
20-May-94	338	43	0.6338	0.342	5.823	0.949
12-Apr-99	355	44	0.6487	0.382	5.872	0.945
21-Jan-99	358	45	0.6636	0.422	5.881	0.941

6-Apr-94	359	46	0.6784	0.463	5.883	0.936
8-Mar-95	380	47	0.6933	0.505	5.940	0.932
15-Jul-99	406	48	0.7082	0.548	6.006	0.928
3-May-94	407	49	0.7230	0.592	6.009	0.923
13-Jun-95	420	50	0.7379	0.637	6.040	0.920
27-Apr-95	443	51	0.7528	0.683	6.094	0.921
11-Jan-95	474	52	0.7677	0.731	6.161	0.929
14-Apr-95	536	53	0.7825	0.781	6.284	0.947
6-May-99	664	54	0.7974	0.832	6.498	0.970
24-May-95	699	55	0.8123	0.886	6.550	0.973
18-Apr-94	805	56	0.8271	0.943	6.691	0.981
23-Mar-95	876	57	0.8420	1.003	6.775	0.981
11-May-95	896	58	0.8569	1.066	6.798	0.977
16-May-91	1010	59	0.8717	1.135	6.918	0.976
15-May-91	1040	60	0.8866	1.209	6.947	0.972
17-May-91	1100	61	0.9015	1.290	7.003	0.965
24-Apr-98	1270	62	0.9164	1.381	7.147	0.955
11-May-98	1280	63	0.9312	1.485	7.155	0.980
20-Apr-99	1320	64	0.9461	1.608	7.185	
1-Jun-99	1450	65	0.9610	1.762	7.279	
27-May-99	1740	66	0.9758	1.974	7.462	
25-May-99	2460	67	0.9907	2.354	7.808	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SF268 **Date:** 20-Jun-00
Chemical: tCd **Analyst:** J.MacLachlan
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	35,104	403	7	10	0.00	0.00	0.00
SD:	954	468	3	9	1.00	1.00	1.00
CV:	0.03	1.16	0.40	0.94			
Min:	33,373	46	2	2.7	-0.76	-1.77	-0.78
Max:	36,402	2,460	14	53	4.39	2.73	4.51
Median:	34,843	253	7	8	-0.32	-0.02	-0.26

tCd SF268 : Concentration v. Discharge, Q

Conc. = mQ+b (r2=0.409)	update r2	0.41	0.409		Q = mTime +b		LnQ = mTime +b	
r2 Q,[COC]:	0.41	[tCd]	Q		r2:	0.032	0.037	
slope, m:	-0.004	8	46.0		m:	0.0879	0.00021	
intercept, b:	8.1	7	403.2		b:	-2681	-1.82	
N: 67		-1	2460					
LnConc. = mLn(Q)+b (r2=0.683)	update r2	0.68	0.683					
r2 lnQ,ln[COC]:	0.68	ln[tCd]	ln Q	[tCd]	Q			
slope, m:	-0.37	2.40	3.83	11	46			
intercept, b:	3.80	1.60	6.00	5	403			
N: 67		0.94	7.81	3	2,460			

N= 67

	Sampling Date	Q Discharge	tCd Concentration	tCd Load	Ln Q	Ln tCd Conc.	Ln tCd Load	tCd SF268 Standardized Values = (x - Avg)/SD		for graph 0
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	1040	2.4	13.4	6.95	0.88	2.60	1.36	-1.59	0.35
MFG	16-May-91	1010	1.9	10.3	6.92	0.64	2.33	1.30	-1.77	0.02
MFG	17-May-91	1100	2.1	12.4	7.00	0.74	2.52	1.49	-1.70	0.24
MFG	1-Oct-91	67.3	12.5	4.5	4.21	2.53	1.51	-0.72	2.18	-0.59
MFG	2-Oct-91	77	14	5.8	4.34	2.64	1.76	-0.70	2.73	-0.45
MFG	3-Oct-91	77	8	3.3	4.34	2.08	1.20	-0.70	0.50	-0.72
MFG	4-Oct-91	72.5	8	3.1	4.28	2.08	1.14	-0.71	0.50	-0.74
MFG	5-Oct-91	73	8.8	3.5	4.29	2.17	1.24	-0.70	0.80	-0.70
IDEQ	29-Oct-93	74	7.7	3.1	4.30	2.04	1.12	-0.70	0.39	-0.74
IDEQ	1-Dec-93	77	8.6	3.6	4.34	2.15	1.27	-0.70	0.72	-0.69
IDEQ	21-Dec-93	74	11	4.4	4.30	2.40	1.48	-0.70	1.62	-0.60
IDEQ	21-Jan-94	117	6.7	4.2	4.76	1.90	1.44	-0.61	0.02	-0.62
IDEQ	17-Feb-94	75	8.6	3.5	4.32	2.15	1.24	-0.70	0.72	-0.70
IDEQ	7-Mar-94	287	5.3	8.2	5.66	1.67	2.10	-0.25	-0.51	-0.20
IDEQ	23-Mar-94	268	6.5	9.4	5.59	1.87	2.24	-0.29	-0.06	-0.08
IDEQ	6-Apr-94	359	5.1	9.9	5.88	1.63	2.29	-0.09	-0.58	-0.03
IDEQ	18-Apr-94	805	4.8	20.8	6.69	1.57	3.03	0.86	-0.69	1.12
IDEQ	3-May-94	407	4	8.8	6.01	1.39	2.17	0.01	-0.99	-0.14
IDEQ	20-May-94	338	4.1	7.5	5.82	1.41	2.01	-0.14	-0.95	-0.28
IDEQ	8-Jun-94	262	5.2	7.3	5.57	1.65	1.99	-0.30	-0.54	-0.29
IDEQ	24-Jun-94	154	6.6	5.5	5.04	1.89	1.70	-0.53	-0.02	-0.49
IDEQ	23-Jul-94	87	7.8	3.7	4.47	2.05	1.29	-0.68	0.43	-0.68
IDEQ	16-Aug-94	59	10.4	3.3	4.08	2.34	1.19	-0.73	1.39	-0.72
IDEQ	5-Oct-94	46	11	2.7	3.83	2.40	1.00	-0.76	1.62	-0.78
IDEQ	16-Nov-94	56	13	3.9	4.03	2.56	1.37	-0.74	2.36	-0.65
IDEQ	14-Dec-94	87	13	6.1	4.47	2.56	1.81	-0.68	2.36	-0.42
IDEQ	11-Jan-95	474	6.1	15.6	6.16	1.81	2.74	0.15	-0.21	0.57
IDEQ	9-Feb-95	264	5.8	8.2	5.58	1.76	2.11	-0.30	-0.32	-0.20
IDEQ	8-Mar-95	380	6.8	13.9	5.94	1.92	2.63	-0.05	0.05	0.40
IDEQ	23-Mar-95	876	7	33.0	6.78	1.95	3.50	1.01	0.13	2.41
IDEQ	14-Apr-95	536	5.9	17.0	6.28	1.77	2.83	0.28	-0.28	0.73
IDEQ	27-Apr-95	443	5.2	12.4	6.09	1.65	2.52	0.08	-0.54	0.24
IDEQ	11-May-95	896	5	24.1	6.80	1.61	3.18	1.05	-0.62	1.47
IDEQ	24-May-95	699	3.6	13.5	6.55	1.28	2.61	0.63	-1.14	0.36
IDEQ	13-Jun-95	420	3.7	8.4	6.04	1.31	2.12	0.04	-1.10	-0.18
IDEQ	28-Jun-95	254	6.5	8.9	5.54	1.87	2.18	-0.32	-0.06	-0.13
IDEQ	12-Jul-95	177	6.5	6.2	5.18	1.87	1.82	-0.48	-0.06	-0.41
IDEQ	26-Jul-95	126	7.4	5.0	4.84	2.00	1.61	-0.59	0.28	-0.54
IDEQ	15-Aug-95	108	7.8	4.5	4.68	2.05	1.51	-0.63	0.43	-0.59
IDEQ	14-Sep-95	70	8.2	3.1	4.25	2.10	1.13	-0.71	0.57	-0.74
URS	5-Nov-97	177	7.4	7.0	5.18	2.00	1.95	-0.48	0.28	-0.32
IDEQ	24-Apr-98	1270	6.8	46.5	7.15	1.92	3.84	1.85	0.05	3.83
URS	11-May-98	1280	2.3	15.8	7.15	0.83	2.76	1.87	-1.62	0.60
IDEQ	25-Jun-98	268	4.9	7.1	5.59	1.59	1.96	-0.29	-0.65	-0.32
IDEQ	27-Jul-98	119	6.5	4.2	4.78	1.87	1.43	-0.61	-0.06	-0.63

IDEQ	25-Aug-98	90	7.2	3.5	4.50	1.97	1.25	-0.67	0.20	-0.70
IDEQ	23-Sep-98	73	8.6	3.4	4.29	2.15	1.22	-0.70	0.72	-0.71
USGS	19-Oct-98	68	9	3.3	4.22	2.20	1.19	-0.72	0.87	-0.72
IDEQ	27-Oct-98	64	8.1	2.8	4.16	2.09	1.03	-0.72	0.54	-0.77
USGS	17-Nov-98	94	9	4.6	4.54	2.20	1.52	-0.66	0.87	-0.59
IDEQ	24-Nov-98	156	10	8.4	5.05	2.30	2.13	-0.53	1.25	-0.18
USGS	15-Dec-98	200	7	7.5	5.30	1.95	2.02	-0.43	0.13	-0.27
IDEQ	4-Jan-99	194	7.5	7.8	5.27	2.01	2.06	-0.45	0.31	-0.24
IDEQ	14-Jan-99	315	5.2	8.8	5.75	1.65	2.18	-0.19	-0.54	-0.14
USGS	21-Jan-99	358	5	9.6	5.88	1.61	2.26	-0.10	-0.62	-0.05
USGS	10-Feb-99	235	7	8.9	5.46	1.95	2.18	-0.36	0.13	-0.13
USGS	9-Mar-99	253	7	9.5	5.53	1.95	2.25	-0.32	0.13	-0.06
USGS	9-Mar-99	254	7	9.6	5.54	1.95	2.26	-0.32	0.13	-0.06
USGS	12-Apr-99	355	5	9.5	5.87	1.61	2.26	-0.10	-0.62	-0.06
USGS	20-Apr-99	1320	5	35.5	7.19	1.61	3.57	1.96	-0.62	2.68
USGS	6-May-99	664	4	14.3	6.50	1.39	2.66	0.56	-0.99	0.44
USGS	25-May-99	2460	4	52.9	7.81	1.39	3.97	4.39	-0.99	4.51
USGS	27-May-99	1740	2	18.7	7.46	0.69	2.93	2.85	-1.73	0.91
USGS	1-Jun-99	1450	2	15.6	7.28	0.69	2.75	2.23	-1.73	0.58
USGS	15-Jul-99	406	3.5	7.6	6.01	1.25	2.03	0.01	-1.18	-0.26
USGS	9-Aug-99	168	5.8	5.2	5.12	1.76	1.66	-0.50	-0.32	-0.51
USGS	30-Aug-99	113	6.6	4.0	4.73	1.89	1.39	-0.62	-0.02	-0.64

tCd

Concentration over time analysis r2 Slope, m

	tCd	SF268		Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.011	-0.00005
	Time	Ln[COC]	[COC]		
first:	15-May-91	1.89	7		
mid:	24-May-95	1.82	6		
last:	30-Aug-99	1.74	6		
	LnConc.=mTime+b >'96 r2, m:			0.316	-0.00288
	17-Nov-98	2.03	8		
	30-Aug-99	1.21	3		

Load over time analysis

	tCd	SF268		Load over time	
	LnLoad=mTime+b All data r2, m:			0.046	0.00016
	Time	LnLoad	Load		
first:	15-May-91	1.76	6		
mid:	24-May-95	1.99	7		
last:	30-Aug-99	2.24	9		
	LnLoad=mTime+b >'96 r2, m:			0.021	0.00109
	17-Nov-98	2.19	9		
	30-Aug-99	2.51	12		

	max r2: 0.985			max r2: 0.994		
	Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.011	-0.00005	3.56	0.046	0.00016	-3.48
	0.029	-0.00008	4.66	0.059	0.00018	-4.38
	0.072	-0.00012	6.18	0.070	0.00020	-5.11
	0.143	-0.00017	7.82	0.087	0.00023	-6.19
	0.120	-0.00016	7.34	0.080	0.00023	-6.05
	0.091	-0.00014	6.63	0.079	0.00023	-6.22
	0.085	-0.00014	6.60	0.065	0.00022	-5.60
	0.079	-0.00013	6.57	0.049	0.00019	-4.77
	0.067	-0.00013	6.37	0.036	0.00017	-3.94
	0.063	-0.00013	6.27	0.026	0.00015	-3.10
	0.055	-0.00012	6.04	0.019	0.00013	-2.37
	0.043	-0.00010	5.50	0.015	0.00011	-1.81
	0.041	-0.00010	5.50	0.010	0.00009	-1.16
	0.034	-0.00010	5.20	0.005	0.00007	-0.22
	0.039	-0.00010	5.47	0.005	0.00007	-0.26
	0.038	-0.00010	5.49	0.006	0.00007	-0.48
	0.044	-0.00011	5.85	0.007	0.00008	-0.79
	0.053	-0.00013	6.34	0.015	0.00012	-2.19
	0.072	-0.00015	7.15	0.017	0.00013	-2.47
	0.094	-0.00017	8.01	0.016	0.00013	-2.52
	0.107	-0.00019	8.58	0.016	0.00013	-2.54
	0.108	-0.00020	8.80	0.012	0.00012	-2.05
	0.102	-0.00019	8.73	0.006	0.00008	-0.74
	0.082	-0.00018	8.09	0.001	0.00003	0.93
	0.062	-0.00015	7.24	0.001	-0.00003	3.19
	0.037	-0.00012	5.93	0.005	-0.00008	4.98
	0.016	-0.00008	4.42	0.009	-0.00011	6.04
	0.015	-0.00008	4.44	0.005	-0.00008	5.08
	0.016	-0.00008	4.58	0.006	-0.00009	5.53
	0.012	-0.00007	4.32	0.003	-0.00007	4.66
	0.008	-0.00006	3.92	0.001	0.00003	1.09
	0.008	-0.00006	3.97	0.005	0.00009	-1.14
	0.011	-0.00008	4.48	0.011	0.00014	-2.78
	0.016	-0.00010	5.29	0.040	0.00027	-7.59
	0.044	-0.00017	7.90	0.067	0.00037	-11.26
	0.095	-0.00027	11.34	0.079	0.00044	-13.61
	0.100	-0.00030	12.54	0.102	0.00054	-17.43
	0.110	-0.00035	14.44	0.107	0.00062	-20.35
	0.105	-0.00040	16.30	0.098	0.00070	-23.05
	0.096	-0.00049	19.54	0.081	0.00081	-27.20
	0.097	-0.00086	32.90	0.020	0.00069	-22.75
	0.084	-0.00094	35.57	0.017	0.00075	-25.00
	0.076	-0.00096	36.60	0.130	0.00203	-71.24
	0.282	-0.00187	69.56	0.241	0.00298	-105.77
	0.375	-0.00235	86.90	0.269	0.00343	-122.07

0.409	-0.00266	98.20	0.240	0.00345	-122.87
0.420	-0.00290	106.81	0.191	0.00322	-114.36
0.392	-0.00295	108.43	0.136	0.00280	-99.13
0.350	-0.00288	106.01	0.081	0.00218	-76.65
0.316	-0.00288	106.10	0.021	0.00109	-37.26
0.259	-0.00268	98.76	0.001	0.00025	-6.77
0.172	-0.00219	81.13	0.000	-0.00008	5.42
0.131	-0.00203	75.13	0.006	-0.00072	28.37
0.077	-0.00162	60.15	0.024	-0.00148	56.18
0.072	-0.00171	63.58	0.050	-0.00237	88.30
0.073	-0.00194	72.04	0.091	-0.00359	132.67
0.022	-0.00116	43.49	0.175	-0.00559	205.49
0.000	0.00004	-0.14	0.274	-0.00771	282.63
0.087	0.00257	-91.99	0.495	-0.01216	444.33
0.199	0.00424	-152.86	0.749	-0.01653	603.00
0.458	0.00717	-259.15	0.693	-0.01652	602.58
0.693	0.01011	-366.30	0.831	-0.02074	756.41
0.985	0.01346	-487.89	0.994	-0.01601	584.19

update for EV, CV:

tCd		SF268		
LN Analysis		tCd		
Load		**Load Data, EV=10.1 lbs/day CV=0.939**		
Avg:	10	**Load Data-based LN**		
SD:	9	u	ln tCd Load	tCd Load
CV:	0.94	3	4.4	80
Min:	2.7	0	2.00	7
Max:	53	-3	-0.39	0.7
Median:	8			
		10	10.1	
		0.94	0.939	

u=mLn(Load)+ b:

update for r2, EV, CV: **r2=0.951, EV=10lbs/day CV=0.845; max r2=0.98**

r2 u,lnLoad:	0.951	u	lnLoad	Load			
slope, m:	1.362	3	4.24	69			
intercept, b:	-2.769	0	2.03	8			
N:	67	-3	-0.17	0.8			
E[Load]:	10.0	Parameter Estimates				0.951	0.951
SD[Load]:	8	from LN regression				10.0	10
CV[Load]:	0.85	update graph label				0.8	0.845
						max r2	
	tCd	N: 67				0.982	
	Load	i	i-3/8 / N+1/4	u	Ln	r2	
Date	lbs/day	rank	plotting points	y-axis	x-axis	forward	
	Ranked						
update and rank for new data							
5-Oct-94	2.7	1	0.0093	-2.354	1.001	0.951	
27-Oct-98	2.8	2	0.0242	-1.974	1.026	0.962	
29-Oct-93	3.1	3	0.0390	-1.762	1.120	0.967	
14-Sep-95	3.1	4	0.0539	-1.608	1.128	0.972	
4-Oct-91	3.1	5	0.0688	-1.485	1.138	0.976	
19-Oct-98	3.3	6	0.0836	-1.381	1.192	0.978	
16-Aug-94	3.3	7	0.0985	-1.290	1.194	0.980	
3-Oct-91	3.3	8	0.1134	-1.209	1.198	0.981	
23-Sep-98	3.4	9	0.1283	-1.135	1.217	0.982	
5-Oct-91	3.5	10	0.1431	-1.066	1.240	0.982	
17-Feb-94	3.5	11	0.1580	-1.003	1.244	0.982	
25-Aug-98	3.5	12	0.1729	-0.943	1.249	0.982	
1-Dec-93	3.6	13	0.1877	-0.886	1.271	0.981	
23-Jul-94	3.7	14	0.2026	-0.832	1.295	0.980	
16-Nov-94	3.9	15	0.2175	-0.781	1.365	0.979	
30-Aug-99	4.0	16	0.2323	-0.731	1.389	0.978	
27-Jul-98	4.2	17	0.2472	-0.683	1.426	0.977	
21-Jan-94	4.2	18	0.2621	-0.637	1.439	0.976	
21-Dec-93	4.4	19	0.2770	-0.592	1.477	0.975	
1-Oct-91	4.5	20	0.2918	-0.548	1.510	0.974	
15-Aug-95	4.5	21	0.3067	-0.505	1.511	0.973	
17-Nov-98	4.6	22	0.3216	-0.463	1.515	0.972	
26-Jul-95	5.0	23	0.3364	-0.422	1.613	0.970	
9-Aug-99	5.2	24	0.3513	-0.382	1.657	0.969	
24-Jun-94	5.5	25	0.3662	-0.342	1.699	0.968	
2-Oct-91	5.8	26	0.3810	-0.303	1.758	0.966	
14-Dec-94	6.1	27	0.3959	-0.264	1.806	0.965	
12-Jul-95	6.2	28	0.4108	-0.226	1.823	0.963	
5-Nov-97	7.0	29	0.4257	-0.187	1.953	0.962	
25-Jun-98	7.1	30	0.4405	-0.150	1.955	0.963	
8-Jun-94	7.3	31	0.4554	-0.112	1.992	0.964	
20-May-94	7.5	32	0.4703	-0.075	2.009	0.965	
15-Dec-98	7.5	33	0.4851	-0.037	2.019	0.966	
15-Jul-99	7.6	34	0.5000	0.000	2.034	0.967	
4-Jan-99	7.8	35	0.5149	0.037	2.058	0.967	
7-Mar-94	8.2	36	0.5297	0.075	2.102	0.968	
9-Feb-95	8.2	37	0.5446	0.112	2.109	0.970	
13-Jun-95	8.4	38	0.5595	0.150	2.124	0.971	
24-Nov-98	8.4	39	0.5743	0.187	2.127	0.973	
3-May-94	8.8	40	0.5892	0.226	2.170	0.973	
14-Jan-99	8.8	41	0.6041	0.264	2.176	0.975	
10-Feb-99	8.9	42	0.6190	0.303	2.180	0.976	
28-Jun-95	8.9	43	0.6338	0.342	2.184	0.976	
23-Mar-94	9.4	44	0.6487	0.382	2.238	0.976	
9-Mar-99	9.5	45	0.6636	0.422	2.254	0.976	

12-Apr-99	9.5	46	0.6784	0.463	2.256	0.976
9-Mar-99	9.6	47	0.6933	0.505	2.258	0.975
21-Jan-99	9.6	48	0.7082	0.548	2.265	0.973
6-Apr-94	9.9	49	0.7230	0.592	2.287	0.970
16-May-91	10.3	50	0.7379	0.637	2.334	0.968
27-Apr-95	12.4	51	0.7528	0.683	2.517	0.965
17-May-91	12.4	52	0.7677	0.731	2.520	0.965
15-May-91	13.4	53	0.7825	0.781	2.597	0.963
24-May-95	13.5	54	0.7974	0.832	2.606	0.964
8-Mar-95	13.9	55	0.8123	0.886	2.632	0.963
6-May-99	14.3	56	0.8271	0.943	2.660	0.960
11-Jan-95	15.6	57	0.8420	1.003	2.744	0.956
1-Jun-99	15.6	58	0.8569	1.066	2.747	0.953
11-May-98	15.8	59	0.8717	1.135	2.762	0.945
14-Apr-95	17.0	60	0.8866	1.209	2.834	0.934
27-May-99	18.7	61	0.9015	1.290	2.930	0.920
18-Apr-94	20.8	62	0.9164	1.381	3.034	0.902
11-May-95	24.1	63	0.9312	1.485	3.182	0.888
23-Mar-95	33.0	64	0.9461	1.608	3.496	
20-Apr-99	35.5	65	0.9610	1.762	3.570	
24-Apr-98	46.5	66	0.9758	1.974	3.839	
25-May-99	52.9	67	0.9907	2.354	3.969	

update for EV, CV:

tCd		SF268	7	6.66
LN Analysis		tCd	0.40	0.403

Concentration

Conc. Data, EV=6.66 ug/L CV=0.403

		Data-based LN		
Avg:	7	u	ln[tCd]	[tCd]
SD:	3	3	3.0	20
CV:	0.40	2	1.82	6
Min:	2	0	0.66	2
Max:	14	-3		
Median:	7			

u=mLn(Conc.)+b: 0.940 0.94

update for r2, EV, CV: **r2=0.94, EV=6.81 ug/L CV=0.509; max r2=0.98** 6.8 6.81; 0.509 0.509

r2 u,lnConc:	0.940	u	lnConc.	Conc.
slope, m:	2.082	3	3.24	26
intercept, b:	-3.754	0	1.80	6
N:	67	-3	0.36	1
E[Conc]:	6.8	Parameter Estimates		
SD[Conc]:	3	from LN regression		
CV[Conc]:	0.51	update graph label		

	tCd	N: 67				max r2 0.982
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
16-May-91	1.9	1	0.0093	-2.354	0.642	0.940
27-May-99	2	2	0.0242	-1.974	0.693	0.934
1-Jun-99	2	3	0.0390	-1.762	0.693	0.931
17-May-91	2.1	4	0.0539	-1.608	0.742	0.935
11-May-98	2.3	5	0.0688	-1.485	0.833	0.944
15-May-91	2.4	6	0.0836	-1.381	0.875	0.957
15-Jul-99	3.5	7	0.0985	-1.290	1.253	0.977
24-May-95	3.6	8	0.1134	-1.209	1.281	0.977
13-Jun-95	3.7	9	0.1283	-1.135	1.308	0.977
3-May-94	4	10	0.1431	-1.066	1.386	0.978
6-May-99	4	11	0.1580	-1.003	1.386	0.977
25-May-99	4	12	0.1729	-0.943	1.386	0.978
20-May-94	4.1	13	0.1877	-0.886	1.411	0.980
18-Apr-94	4.8	14	0.2026	-0.832	1.569	0.982
25-Jun-98	4.9	15	0.2175	-0.781	1.589	0.981
11-May-95	5	16	0.2323	-0.731	1.609	0.981
21-Jan-99	5	17	0.2472	-0.683	1.609	0.980
12-Apr-99	5	18	0.2621	-0.637	1.609	0.979
20-Apr-99	5	19	0.2770	-0.592	1.609	0.978
6-Apr-94	5.1	20	0.2918	-0.548	1.629	0.977
8-Jun-94	5.2	21	0.3067	-0.505	1.649	0.976
27-Apr-95	5.2	22	0.3216	-0.463	1.649	0.976
14-Jan-99	5.2	23	0.3364	-0.422	1.649	0.975
7-Mar-94	5.3	24	0.3513	-0.382	1.668	0.976
9-Feb-95	5.8	25	0.3662	-0.342	1.758	0.977
9-Aug-99	5.8	26	0.3810	-0.303	1.758	0.976
14-Apr-95	5.9	27	0.3959	-0.264	1.775	0.974
11-Jan-95	6.1	28	0.4108	-0.226	1.808	0.973
23-Mar-94	6.5	29	0.4257	-0.187	1.872	0.972
28-Jun-95	6.5	30	0.4405	-0.150	1.872	0.973
12-Jul-95	6.5	31	0.4554	-0.112	1.872	0.974
27-Jul-98	6.5	32	0.4703	-0.075	1.872	0.974
24-Jun-94	6.6	33	0.4851	-0.037	1.887	0.974
30-Aug-99	6.6	34	0.5000	0.000	1.887	0.974
21-Jan-94	6.7	35	0.5149	0.037	1.902	0.973
8-Mar-95	6.8	36	0.5297	0.075	1.917	0.972
24-Apr-98	6.8	37	0.5446	0.112	1.917	0.972
23-Mar-95	7	38	0.5595	0.150	1.946	0.971
15-Dec-98	7	39	0.5743	0.187	1.946	0.972
10-Feb-99	7	40	0.5892	0.226	1.946	0.971
9-Mar-99	7	41	0.6041	0.264	1.946	0.970
9-Mar-99	7	42	0.6190	0.303	1.946	0.969
25-Aug-98	7.2	43	0.6338	0.342	1.974	0.967
26-Jul-95	7.4	44	0.6487	0.382	2.001	0.965
5-Nov-97	7.4	45	0.6636	0.422	2.001	0.963

4-Jan-99	7.5	46	0.6784	0.463	2.015	0.961
29-Oct-93	7.7	47	0.6933	0.505	2.041	0.958
23-Jul-94	7.8	48	0.7082	0.548	2.054	0.956
15-Aug-95	7.8	49	0.7230	0.592	2.054	0.954
3-Oct-91	8	50	0.7379	0.637	2.079	0.950
4-Oct-91	8	51	0.7528	0.683	2.079	0.946
27-Oct-98	8.1	52	0.7677	0.731	2.092	0.941
14-Sep-95	8.2	53	0.7825	0.781	2.104	0.935
1-Dec-93	8.6	54	0.7974	0.832	2.152	0.927
17-Feb-94	8.6	55	0.8123	0.886	2.152	0.920
23-Sep-98	8.6	56	0.8271	0.943	2.152	0.909
5-Oct-91	8.8	57	0.8420	1.003	2.175	0.896
19-Oct-98	9	58	0.8569	1.066	2.197	0.881
17-Nov-98	9	59	0.8717	1.135	2.197	0.863
24-Nov-98	10	60	0.8866	1.209	2.303	0.881
16-Aug-94	10.4	61	0.9015	1.290	2.342	0.860
21-Dec-93	11	62	0.9164	1.381	2.398	0.828
5-Oct-94	11	63	0.9312	1.485	2.398	0.764
1-Oct-91	12.5	64	0.9461	1.608	2.526	
16-Nov-94	13	65	0.9610	1.762	2.565	
14-Dec-94	13	66	0.9758	1.974	2.565	
2-Oct-91	14	67	0.9907	2.354	2.639	

update for EV, CV:

tCd		SF268			403	403
LN Analysis		tCd			1.16	1.16
Discharge, Q		Q Data, EV=403 cfs CV=1.16				
Avg:	403	Q Data-based LN				
SD:	468	u	lnQ	Q		
CV:	1.16	3	8.3	4210		
Min:	46	0	5.57	263		
Max:	2,460	-3	2.80	16		
Median:	253					
					0.953	0.953
					417.7	418
	u=mLn(Q)+b:				1.48	1.48
update for r2, EV, CV:	r2=0.953, EV=418 cfs CV=1.48; max r2=0.99					
	r2 u,lnQ:	0.953	u	lnQ	Q	
	slope, m:	0.929	3	8.69	5915	
	intercept, b:	-5.067	0	5.46	234	
	N:	67	-3	2.23	9	
	E[Q]:	417.7	Parameter Estimates			
	SD[Q]:	618	from LN regression			
	CV[Q]:	1.48	update graph label			

	Q	N: 67				max r2 0.985
	Discharge	i	i-3/8 / N+1/4	u	Ln	r2
Date	cfs	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
5-Oct-94	46	1	0.0093	-2.354	3.829	0.953
16-Nov-94	56	2	0.0242	-1.974	4.025	0.961
16-Aug-94	59	3	0.0390	-1.762	4.078	0.967
27-Oct-98	64	4	0.0539	-1.608	4.159	0.972
1-Oct-91	67.3	5	0.0688	-1.485	4.209	0.975
19-Oct-98	68	6	0.0836	-1.381	4.220	0.979
14-Sep-95	70	7	0.0985	-1.290	4.248	0.981
4-Oct-91	72.5	8	0.1134	-1.209	4.284	0.982
5-Oct-91	73	9	0.1283	-1.135	4.290	0.984
23-Sep-98	73	10	0.1431	-1.066	4.290	0.984
29-Oct-93	74	11	0.1580	-1.003	4.304	0.985
21-Dec-93	74	12	0.1729	-0.943	4.304	0.984
17-Feb-94	75	13	0.1877	-0.886	4.317	0.984
2-Oct-91	77	14	0.2026	-0.832	4.344	0.983
3-Oct-91	77	15	0.2175	-0.781	4.344	0.982
1-Dec-93	77	16	0.2323	-0.731	4.344	0.982
23-Jul-94	87	17	0.2472	-0.683	4.466	0.981
14-Dec-94	87	18	0.2621	-0.637	4.466	0.980
25-Aug-98	90	19	0.2770	-0.592	4.500	0.980
17-Nov-98	94	20	0.2918	-0.548	4.543	0.979
15-Aug-95	108	21	0.3067	-0.505	4.682	0.979
30-Aug-99	113	22	0.3216	-0.463	4.727	0.979
21-Jan-94	117	23	0.3364	-0.422	4.762	0.978
27-Jul-98	119	24	0.3513	-0.382	4.779	0.978
26-Jul-95	126	25	0.3662	-0.342	4.836	0.978
24-Jun-94	154	26	0.3810	-0.303	5.037	0.978
24-Nov-98	156	27	0.3959	-0.264	5.050	0.977
9-Aug-99	168	28	0.4108	-0.226	5.124	0.976
12-Jul-95	177	29	0.4257	-0.187	5.176	0.975
5-Nov-97	177	30	0.4405	-0.150	5.176	0.973
4-Jan-99	194	31	0.4554	-0.112	5.268	0.972
15-Dec-98	200	32	0.4703	-0.075	5.298	0.971
10-Feb-99	235	33	0.4851	-0.037	5.460	0.969
9-Mar-99	253	34	0.5000	0.000	5.533	0.968
28-Jun-95	254	35	0.5149	0.037	5.537	0.967
9-Mar-99	254	36	0.5297	0.075	5.537	0.966
8-Jun-94	262	37	0.5446	0.112	5.568	0.964
9-Feb-95	264	38	0.5595	0.150	5.576	0.962
23-Mar-94	268	39	0.5743	0.187	5.591	0.959
25-Jun-98	268	40	0.5892	0.226	5.591	0.957
7-Mar-94	287	41	0.6041	0.264	5.659	0.955
14-Jan-99	315	42	0.6190	0.303	5.753	0.952
20-May-94	338	43	0.6338	0.342	5.823	0.949
12-Apr-99	355	44	0.6487	0.382	5.872	0.945
21-Jan-99	358	45	0.6636	0.422	5.881	0.941

6-Apr-94	359	46	0.6784	0.463	5.883	0.936
8-Mar-95	380	47	0.6933	0.505	5.940	0.932
15-Jul-99	406	48	0.7082	0.548	6.006	0.928
3-May-94	407	49	0.7230	0.592	6.009	0.923
13-Jun-95	420	50	0.7379	0.637	6.040	0.920
27-Apr-95	443	51	0.7528	0.683	6.094	0.921
11-Jan-95	474	52	0.7677	0.731	6.161	0.929
14-Apr-95	536	53	0.7825	0.781	6.284	0.947
6-May-99	664	54	0.7974	0.832	6.498	0.970
24-May-95	699	55	0.8123	0.886	6.550	0.973
18-Apr-94	805	56	0.8271	0.943	6.691	0.981
23-Mar-95	876	57	0.8420	1.003	6.775	0.981
11-May-95	896	58	0.8569	1.066	6.798	0.977
16-May-91	1010	59	0.8717	1.135	6.918	0.976
15-May-91	1040	60	0.8866	1.209	6.947	0.972
17-May-91	1100	61	0.9015	1.290	7.003	0.965
24-Apr-98	1270	62	0.9164	1.381	7.147	0.955
11-May-98	1280	63	0.9312	1.485	7.155	0.980
20-Apr-99	1320	64	0.9461	1.608	7.185	
1-Jun-99	1450	65	0.9610	1.762	7.279	
27-May-99	1740	66	0.9758	1.974	7.462	
25-May-99	2460	67	0.9907	2.354	7.808	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SF268 **Date:** 20-Jun-00
Chemical: tPb **Analyst:** J.MacLachlan
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	35,104	403	37	216	0.00	0.00	0.00
SD:	954	468	83	744	1.00	1.00	1.00
CV:	0.03	1.16	2.24	3.45			
Min:	33,373	46	5	2.0	-0.76	-0.39	-0.29
Max:	36,402	2,460	526	4,500	4.39	5.89	5.76
Median:	34,843	253	14	15	-0.32	-0.28	-0.27

tPb SF268 : Concentration v. Discharge, Q

						Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.417)		update r2	0.42	0.417		r2:	0.032	0.037
r2 Q,[COC]:	0.42	[tCd]	Q			m:	0.0879	0.00021
slope, m:	0.1	-4	46.0			b:	-2681	-1.82
intercept, b:	-9.0	37	403.2					
N: 67		272	2460					
LnConc. = mLn(Q)+b (r2=0.362)			update r2	0.36	0.362			
r2 lnQ,ln[COC]:	0.36	ln[tCd]	ln Q	[tCd]	Q			
slope, m:	0.53	1.98	3.83	7	46			
intercept, b:	-0.05	3.14	6.00	23	403			
N: 67		4.10	7.81	61	2,460			

N= 67

	Sampling Date	Q Discharge cfs	tPb Concentration ug/L	tPb Load lbs/day	Ln Q	Ln tPb Conc.	Ln tPb Load	for graph 0 tPb SF268 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data										
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	1040	14	78.3	6.95	2.64	4.36	1.36	-0.28	-0.18
MFG	16-May-91	1010	13	70.6	6.92	2.56	4.26	1.30	-0.29	-0.19
MFG	17-May-91	1100	10	59.2	7.00	2.30	4.08	1.49	-0.33	-0.21
MFG	1-Oct-91	67.3	14	5.1	4.21	2.64	1.62	-0.72	-0.28	-0.28
MFG	2-Oct-91	77	14	5.8	4.34	2.64	1.76	-0.70	-0.28	-0.28
MFG	3-Oct-91	77	10	4.1	4.34	2.30	1.42	-0.70	-0.33	-0.28
MFG	4-Oct-91	72.5	12	4.7	4.28	2.48	1.54	-0.71	-0.30	-0.28
MFG	5-Oct-91	73	13	5.1	4.29	2.56	1.63	-0.70	-0.29	-0.28
IDEQ	29-Oct-93	74	11	4.4	4.30	2.40	1.48	-0.70	-0.31	-0.28
IDEQ	1-Dec-93	77	7	2.9	4.34	1.95	1.06	-0.70	-0.36	-0.29
IDEQ	21-Dec-93	74	5	2.0	4.30	1.61	0.69	-0.70	-0.39	-0.29
IDEQ	21-Jan-94	117	5	3.1	4.76	1.61	1.15	-0.61	-0.39	-0.29
IDEQ	17-Feb-94	75	10	4.0	4.32	2.30	1.40	-0.70	-0.33	-0.28
IDEQ	7-Mar-94	287	16	24.7	5.66	2.77	3.21	-0.25	-0.25	-0.26
IDEQ	23-Mar-94	268	17	24.5	5.59	2.83	3.20	-0.29	-0.24	-0.26
IDEQ	6-Apr-94	359	23	44.4	5.88	3.14	3.79	-0.09	-0.17	-0.23
IDEQ	18-Apr-94	805	170	736.3	6.69	5.14	6.60	0.86	1.60	0.70
IDEQ	3-May-94	407	12	26.3	6.01	2.48	3.27	0.01	-0.30	-0.25
IDEQ	20-May-94	338	15	27.3	5.82	2.71	3.31	-0.14	-0.27	-0.25
IDEQ	8-Jun-94	262	15	21.1	5.57	2.71	3.05	-0.30	-0.27	-0.26
IDEQ	24-Jun-94	154	12	9.9	5.04	2.48	2.30	-0.53	-0.30	-0.28
IDEQ	23-Jul-94	87	16	7.5	4.47	2.77	2.01	-0.68	-0.25	-0.28
IDEQ	16-Aug-94	59	14	4.4	4.08	2.64	1.49	-0.73	-0.28	-0.28
IDEQ	5-Oct-94	46	15	3.7	3.83	2.71	1.31	-0.76	-0.27	-0.28
IDEQ	16-Nov-94	56	16	4.8	4.03	2.77	1.57	-0.74	-0.25	-0.28
IDEQ	14-Dec-94	87	13	6.1	4.47	2.56	1.81	-0.68	-0.29	-0.28
IDEQ	11-Jan-95	474	33	84.2	6.16	3.50	4.43	0.15	-0.05	-0.18
IDEQ	9-Feb-95	264	26	36.9	5.58	3.26	3.61	-0.30	-0.13	-0.24
IDEQ	8-Mar-95	380	9	18.4	5.94	2.20	2.91	-0.05	-0.34	-0.26
IDEQ	23-Mar-95	876	22	103.7	6.78	3.09	4.64	1.01	-0.18	-0.15
IDEQ	14-Apr-95	536	17	49.0	6.28	2.83	3.89	0.28	-0.24	-0.22
IDEQ	27-Apr-95	443	13	31.0	6.09	2.56	3.43	0.08	-0.29	-0.25
IDEQ	11-May-95	896	38	183.2	6.80	3.64	5.21	1.05	0.01	-0.04
IDEQ	24-May-95	699	14	52.6	6.55	2.64	3.96	0.63	-0.28	-0.22
IDEQ	13-Jun-95	420	14	31.6	6.04	2.64	3.45	0.04	-0.28	-0.25
IDEQ	28-Jun-95	254	15	20.5	5.54	2.71	3.02	-0.32	-0.27	-0.26
IDEQ	12-Jul-95	177	10	9.5	5.18	2.30	2.25	-0.48	-0.33	-0.28
IDEQ	26-Jul-95	126	12	8.1	4.84	2.48	2.10	-0.59	-0.30	-0.28
IDEQ	15-Aug-95	108	11	6.4	4.68	2.40	1.85	-0.63	-0.31	-0.28
IDEQ	14-Sep-95	70	11	4.1	4.25	2.40	1.42	-0.71	-0.31	-0.28
URS	5-Nov-97	177	19.3	18.4	5.18	2.96	2.91	-0.48	-0.21	-0.26
IDEQ	24-Apr-98	1270	526	3593.9	7.15	6.27	8.19	1.85	5.89	4.54
URS	11-May-98	1280	19.1	131.5	7.15	2.95	4.88	1.87	-0.22	-0.11
IDEQ	25-Jun-98	268	15	21.6	5.59	2.71	3.07	-0.29	-0.27	-0.26
IDEQ	27-Jul-98	119	14	9.0	4.78	2.64	2.19	-0.61	-0.28	-0.28

IDEQ	25-Aug-98	90	13	6.3	4.50	2.56	1.84	-0.67	-0.29	-0.28
IDEQ	23-Sep-98	73	14	5.5	4.29	2.64	1.70	-0.70	-0.28	-0.28
USGS	19-Oct-98	68	10	3.7	4.22	2.30	1.30	-0.72	-0.33	-0.28
IDEQ	27-Oct-98	64	10	3.4	4.16	2.30	1.24	-0.72	-0.33	-0.28
USGS	17-Nov-98	94	14	7.1	4.54	2.64	1.96	-0.66	-0.28	-0.28
IDEQ	24-Nov-98	156	14	11.7	5.05	2.64	2.46	-0.53	-0.28	-0.27
USGS	15-Dec-98	200	8	8.6	5.30	2.08	2.15	-0.43	-0.35	-0.28
IDEQ	4-Jan-99	194	12	12.5	5.27	2.48	2.53	-0.45	-0.39	-0.27
IDEQ	14-Jan-99	315	16	27.1	5.75	2.77	3.30	-0.19	-0.25	-0.25
USGS	21-Jan-99	358	8	15.4	5.88	2.08	2.73	-0.10	-0.35	-0.27
USGS	10-Feb-99	235	8	10.1	5.46	2.08	2.31	-0.36	-0.35	-0.28
USGS	9-Mar-99	253	11	15.0	5.53	2.40	2.71	-0.32	-0.31	-0.27
USGS	9-Mar-99	254	11	15.0	5.54	2.40	2.71	-0.32	-0.31	-0.27
USGS	12-Apr-99	355	130	248.3	5.87	4.87	5.51	-0.10	1.12	0.64
USGS	20-Apr-99	1320	260	1846.4	7.19	5.56	7.52	1.96	2.69	2.19
USGS	6-May-99	664	16	57.2	6.50	2.77	4.05	0.56	-0.25	-0.21
USGS	25-May-99	2460	340	4499.8	7.81	5.83	8.41	4.39	3.65	5.76
USGS	27-May-99	1740	180	1685.0	7.46	5.19	7.43	2.85	1.72	1.97
USGS	1-Jun-99	1450	39	304.2	7.28	3.66	5.72	2.23	0.02	0.12
USGS	15-Jul-99	406	14.6	31.9	6.01	2.68	3.46	0.01	-0.27	-0.25
USGS	9-Aug-99	168	14.4	13.0	5.12	2.67	2.57	-0.50	-0.27	-0.27
USGS	30-Aug-99	113	11.6	7.1	4.73	2.45	1.95	-0.62	-0.31	-0.28

tPb

Concentration over time analysis

				r2	Slope, m
	tPb	**SF268**		**Concentration over time**	
	LnConc.=mTime+b All data r2, m:			**0.073**	**0.00026**
	Time	**Ln[COC]**	**[COC]**		
first:	15-May-91	2.40	11		
mid:	24-May-95	2.78	16		
last:	30-Aug-99	3.18	24		
	LnConc.=mTime+b >'96 r2, m:			**0.111**	**0.00482**
	17-Nov-98	2.55	13		
	30-Aug-99	3.93	51		

Load over time analysis

	tPb	**SF268**		**Load over time**	
	LnLoad=mTime+b All data r2, m:			**0.065**	**0.00046**
	Time	**LnLoad**	**Load**		
first:	15-May-91	2.28	10		
mid:	24-May-95	2.96	19		
last:	30-Aug-99	3.68	40		
	LnLoad=mTime+b >'96 r2, m:			**0.133**	**0.00879**
	17-Nov-98	2.71	15		
	30-Aug-99	5.23	186		

max r2: 0.738 — **Forward time Regression on Ln Concentration(t)**

max r2: 0.927 — **Forward time Regression on Ln Load(t)**

r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.073	0.00026	-6.19	0.065	0.00046	-13.23
0.073	0.00026	-6.44	0.081	0.00053	-15.48
0.072	0.00027	-6.64	0.098	0.00060	-17.94
0.067	0.00027	-6.55	0.118	0.00067	-20.57
0.067	0.00028	-6.82	0.109	0.00066	-20.22
0.067	0.00028	-7.14	0.101	0.00065	-19.99
0.062	0.00028	-7.02	0.090	0.00063	-19.23
0.059	0.00029	-7.18	0.079	0.00061	-18.52
0.058	0.00029	-7.50	0.069	0.00059	-17.81
0.054	0.00029	-7.30	0.061	0.00056	-16.67
0.046	0.00027	-6.56	0.051	0.00051	-14.97
0.036	0.00024	-5.38	0.039	0.00045	-12.69
0.026	0.00020	-4.10	0.030	0.00040	-10.75
0.021	0.00018	-3.54	0.023	0.00035	-8.95
0.021	0.00018	-3.51	0.023	0.00035	-9.24
0.020	0.00018	-3.56	0.023	0.00036	-9.53
0.022	0.00020	-4.02	0.026	0.00039	-10.66
0.051	0.00029	-7.38	0.051	0.00054	-15.91
0.047	0.00028	-7.15	0.053	0.00056	-16.76
0.046	0.00029	-7.24	0.056	0.00059	-17.76
0.044	0.00029	-7.32	0.057	0.00061	-18.44
0.040	0.00028	-7.02	0.052	0.00059	-17.87
0.039	0.00029	-7.20	0.044	0.00056	-16.68
0.037	0.00028	-7.13	0.033	0.00049	-14.28
0.035	0.00028	-7.16	0.022	0.00041	-11.21
0.034	0.00029	-7.30	0.014	0.00033	-8.25
0.030	0.00028	-6.99	0.008	0.00025	-5.36
0.040	0.00033	-8.78	0.012	0.00032	-8.15
0.047	0.00037	-10.25	0.014	0.00036	-9.31
0.037	0.00034	-9.13	0.012	0.00034	-8.79
0.042	0.00037	-10.36	0.021	0.00046	-13.19
0.042	0.00039	-11.01	0.026	0.00055	-16.12
0.038	0.00039	-10.85	0.029	0.00060	-18.12
0.057	0.00050	-14.97	0.055	0.00087	-27.85
0.055	0.00052	-15.73	0.073	0.00106	-34.89
0.053	0.00055	-16.73	0.087	0.00125	-41.67
0.052	0.00060	-18.59	0.096	0.00144	-48.57
0.040	0.00058	-17.98	0.089	0.00156	-52.77
0.032	0.00061	-18.99	0.079	0.00171	-58.34
0.020	0.00062	-19.38	0.061	0.00193	-66.11
0.007	0.00065	-20.23	0.026	0.00220	-75.87
0.007	0.00074	-23.48	0.023	0.00242	-84.05
0.125	0.00302	-106.24	0.149	0.00601	-214.08
0.147	0.00360	-127.35	0.249	0.00846	-302.68
0.155	0.00402	-142.55	0.281	0.00980	-351.52

0.158	0.00440	-156.24	0.278	0.01051	-377.30
0.155	0.00470	-167.21	0.259	0.01082	-388.39
0.154	0.00502	-178.91	0.230	0.01077	-386.48
0.134	0.00496	-176.50	0.186	0.01001	-359.16
0.111	0.00482	-171.42	0.133	0.00879	-314.78
0.101	0.00493	-175.36	0.096	0.00786	-280.88
0.090	0.00504	-179.33	0.069	0.00715	-255.05
0.053	0.00411	-145.85	0.035	0.00543	-192.62
0.032	0.00342	-120.64	0.013	0.00355	-124.61
0.019	0.00289	-101.41	0.004	0.00223	-76.69
0.000	0.00009	0.34	0.002	-0.00155	60.96
0.033	-0.00442	164.26	0.049	-0.00886	326.26
0.134	-0.00941	345.51	0.164	-0.01717	628.28
0.492	-0.01991	727.07	0.538	-0.03464	1263.39
0.466	-0.02099	766.30	0.629	-0.04176	1522.16
0.342	-0.01815	663.17	0.563	-0.04184	1524.91
0.738	-0.02957	1078.40	0.902	-0.06043	2201.11
0.729	-0.02334	851.77	0.927	-0.05281	1923.85

update for EV, CV:

tPb
LN Analysis
SF268
tPb

Load

Load Data, EV=216 lbs/day CV=3.45

Avg:	216
SD:	744
CV:	3.45
Min:	2.0
Max:	4,500
Median:	15

Load Data-based LN

u	ln tCd Load	tCd Load
3	8.9	7278
0	4.09	60
-3	-0.71	0.5

216	216
3.45	3.45

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.881, EV=130lbs/day CV=5.89; max r2=0.96**

r2 u,lnLoad:	0.881	u	lnLoad	Load
slope, m:	0.529	3	8.75	6320
intercept, b:	-1.629	0	3.08	22
N:	67	-3	-2.59	0.1
E[Load]:	129.9	Parameter Estimates		
SD[Load]:	765	from LN regression		
CV[Load]:	5.89	update graph label		

0.881	0.881
129.9	130
5.9	5.89

max r2
0.961

tPb N: 67

Date	Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
21-Dec-93	2.0	1	0.0093	-2.354	0.688	0.881
1-Dec-93	2.9	2	0.0242	-1.974	1.065	0.890
21-Jan-94	3.1	3	0.0390	-1.762	1.147	0.899
27-Oct-98	3.4	4	0.0539	-1.608	1.236	0.906
19-Oct-98	3.7	5	0.0688	-1.485	1.297	0.912
5-Oct-94	3.7	6	0.0836	-1.381	1.312	0.918
17-Feb-94	4.0	7	0.0985	-1.290	1.395	0.922
3-Oct-91	4.1	8	0.1134	-1.209	1.421	0.926
14-Sep-95	4.1	9	0.1283	-1.135	1.421	0.930
29-Oct-93	4.4	10	0.1431	-1.066	1.477	0.932
16-Aug-94	4.4	11	0.1580	-1.003	1.492	0.935
4-Oct-91	4.7	12	0.1729	-0.943	1.543	0.937
16-Nov-94	4.8	13	0.1877	-0.886	1.573	0.939
1-Oct-91	5.1	14	0.2026	-0.832	1.623	0.940
5-Oct-91	5.1	15	0.2175	-0.781	1.630	0.942
23-Sep-98	5.5	16	0.2323	-0.731	1.704	0.943
2-Oct-91	5.8	17	0.2472	-0.683	1.758	0.944
14-Dec-94	6.1	18	0.2621	-0.637	1.806	0.945
25-Aug-98	6.3	19	0.2770	-0.592	1.840	0.946
15-Aug-95	6.4	20	0.2918	-0.548	1.855	0.946
30-Aug-99	7.1	21	0.3067	-0.505	1.953	0.946
17-Nov-98	7.1	22	0.3216	-0.463	1.957	0.947
23-Jul-94	7.5	23	0.3364	-0.422	2.013	0.947
26-Jul-95	8.1	24	0.3513	-0.382	2.096	0.947
15-Dec-98	8.6	25	0.3662	-0.342	2.153	0.947
27-Jul-98	9.0	26	0.3810	-0.303	2.193	0.948
12-Jul-95	9.5	27	0.3959	-0.264	2.254	0.948
24-Jun-94	9.9	28	0.4108	-0.226	2.297	0.948
10-Feb-99	10.1	29	0.4257	-0.187	2.314	0.948
24-Nov-98	11.7	30	0.4405	-0.150	2.464	0.947
4-Jan-99	12.5	31	0.4554	-0.112	2.528	0.947
9-Aug-99	13.0	32	0.4703	-0.075	2.566	0.948
9-Mar-99	15.0	33	0.4851	-0.037	2.706	0.948
9-Mar-99	15.0	34	0.5000	0.000	2.710	0.949
21-Jan-99	15.4	35	0.5149	0.037	2.735	0.950
5-Nov-97	18.4	36	0.5297	0.075	2.911	0.950
8-Mar-95	18.4	37	0.5446	0.112	2.912	0.951
28-Jun-95	20.5	38	0.5595	0.150	3.020	0.952
8-Jun-94	21.1	39	0.5743	0.187	3.051	0.954
25-Jun-98	21.6	40	0.5892	0.226	3.074	0.956
23-Mar-94	24.5	41	0.6041	0.264	3.199	0.957
7-Mar-94	24.7	42	0.6190	0.303	3.207	0.959
3-May-94	26.3	43	0.6338	0.342	3.269	0.960
14-Jan-99	27.1	44	0.6487	0.382	3.300	0.961
20-May-94	27.3	45	0.6636	0.422	3.306	0.961

27-Apr-95	31.0	46	0.6784	0.463	3.433	0.961
13-Jun-95	31.6	47	0.6933	0.505	3.454	0.961
15-Jul-99	31.9	48	0.7082	0.548	3.462	0.960
9-Feb-95	36.9	49	0.7230	0.592	3.609	0.958
6-Apr-94	44.4	50	0.7379	0.637	3.794	0.956
14-Apr-95	49.0	51	0.7528	0.683	3.892	0.954
24-May-95	52.6	52	0.7677	0.731	3.964	0.953
6-May-99	57.2	53	0.7825	0.781	4.046	0.950
17-May-91	59.2	54	0.7974	0.832	4.081	0.946
16-May-91	70.6	55	0.8123	0.886	4.258	0.940
15-May-91	78.3	56	0.8271	0.943	4.361	0.932
11-Jan-95	84.2	57	0.8420	1.003	4.433	0.922
23-Mar-95	103.7	58	0.8569	1.066	4.641	0.909
11-May-98	131.5	59	0.8717	1.135	4.879	0.893
11-May-95	183.2	60	0.8866	1.209	5.210	0.873
12-Apr-99	248.3	61	0.9015	1.290	5.515	0.846
1-Jun-99	304.2	62	0.9164	1.381	5.718	0.809
18-Apr-94	736.3	63	0.9312	1.485	6.602	0.846
27-May-99	1685.0	64	0.9461	1.608	7.430	
20-Apr-99	1846.4	65	0.9610	1.762	7.521	
24-Apr-98	3593.9	66	0.9758	1.974	8.187	
25-May-99	4499.8	67	0.9907	2.354	8.412	

		update for EV, CV:			
tPb		SF268		37	37.1
LN Analysis		tPb		2.24	2.24

Concentration — Conc. Data, EV=37.1 ug/L CV=2.24

		Data-based LN		
Avg:	37	u	ln[tCd]	[tCd]
SD:	83	3	6.7	840
CV:	2.24	0	2.72	15
Min:	5	-3	-1.30	0.3
Max:	526			
Median:	14			

				0.693	0.693
u=mLn(Conc.)+b:				32.3	32.3
update for r2, EV, CV:	r2=0.693, EV=32.3 ug/L CV=1.58; max r2=0.98			1.578	1.58
r2 u,lnConc:	0.693	u	lnConc.	Conc.	
slope, m:	0.895	3	6.20	494	
intercept, b:	-2.550	0	2.85	17	
N:	67	-3	-0.50	1	
E[Conc]:	32.3	Parameter Estimates			
SD[Conc]:	51	from LN regression			
CV[Conc]:	1.58	update graph label			

	tPb	N: 67				max r2 0.982
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
21-Dec-93	5	1	0.0093	-2.354	1.609	0.693
21-Jan-94	5	2	0.0242	-1.974	1.609	0.691
1-Dec-93	7	3	0.0390	-1.762	1.946	0.684
15-Dec-98	8	4	0.0539	-1.608	2.079	0.685
21-Jan-99	8	5	0.0688	-1.485	2.079	0.688
10-Feb-99	8	6	0.0836	-1.381	2.079	0.690
8-Mar-95	9	7	0.0985	-1.290	2.197	0.690
17-May-91	10	8	0.1134	-1.209	2.303	0.694
3-Oct-91	10	9	0.1283	-1.135	2.303	0.699
17-Feb-94	10	10	0.1431	-1.066	2.303	0.705
12-Jul-95	10	11	0.1580	-1.003	2.303	0.709
19-Oct-98	10	12	0.1729	-0.943	2.303	0.713
27-Oct-98	10	13	0.1877	-0.886	2.303	0.717
29-Oct-93	11	14	0.2026	-0.832	2.398	0.720
15-Aug-95	11	15	0.2175	-0.781	2.398	0.725
14-Sep-95	11	16	0.2323	-0.731	2.398	0.730
9-Mar-99	11	17	0.2472	-0.683	2.398	0.735
9-Mar-99	11	18	0.2621	-0.637	2.398	0.739
30-Aug-99	11.6	19	0.2770	-0.592	2.451	0.743
4-Oct-91	12	20	0.2918	-0.548	2.485	0.748
3-May-94	12	21	0.3067	-0.505	2.485	0.754
24-Jun-94	12	22	0.3216	-0.463	2.485	0.760
26-Jul-95	12	23	0.3364	-0.422	2.485	0.765
4-Jan-99	12	24	0.3513	-0.382	2.485	0.770
16-May-91	13	25	0.3662	-0.342	2.565	0.775
5-Oct-91	13	26	0.3810	-0.303	2.565	0.782
14-Dec-94	13	27	0.3959	-0.264	2.565	0.789
27-Apr-95	13	28	0.4108	-0.226	2.565	0.796
25-Aug-98	13	29	0.4257	-0.187	2.565	0.802
15-May-91	14	30	0.4405	-0.150	2.639	0.808
1-Oct-91	14	31	0.4554	-0.112	2.639	0.817
2-Oct-91	14	32	0.4703	-0.075	2.639	0.826
16-Aug-94	14	33	0.4851	-0.037	2.639	0.834
24-May-95	14	34	0.5000	0.000	2.639	0.842
13-Jun-95	14	35	0.5149	0.037	2.639	0.850
27-Jul-98	14	36	0.5297	0.075	2.639	0.858
23-Sep-98	14	37	0.5446	0.112	2.639	0.865
17-Nov-98	14	38	0.5595	0.150	2.639	0.872
24-Nov-98	14	39	0.5743	0.187	2.639	0.879
9-Aug-99	14.4	40	0.5892	0.226	2.667	0.885
15-Jul-99	14.6	41	0.6041	0.264	2.681	0.891
20-May-94	15	42	0.6190	0.303	2.708	0.898
8-Jun-94	15	43	0.6338	0.342	2.708	0.905
5-Oct-94	15	44	0.6487	0.382	2.708	0.911
28-Jun-95	15	45	0.6636	0.422	2.708	0.917

25-Jun-98	15	46	0.6784	0.463	2.708	0.921
7-Mar-94	16	47	0.6933	0.505	2.773	0.925
23-Jul-94	16	48	0.7082	0.548	2.773	0.930
16-Nov-94	16	49	0.7230	0.592	2.773	0.933
14-Jan-99	16	50	0.7379	0.637	2.773	0.935
6-May-99	16	51	0.7528	0.683	2.773	0.934
23-Mar-94	17	52	0.7677	0.731	2.833	0.932
14-Apr-95	17	53	0.7825	0.781	2.833	0.928
11-May-98	19.1	54	0.7974	0.832	2.950	0.922
5-Nov-97	19.3	55	0.8123	0.886	2.960	0.914
23-Mar-95	22	56	0.8271	0.943	3.091	0.903
6-Apr-94	23	57	0.8420	1.003	3.135	0.888
9-Feb-95	26	58	0.8569	1.066	3.258	0.870
11-Jan-95	33	59	0.8717	1.135	3.497	0.847
11-May-95	38	60	0.8866	1.209	3.638	0.817
1-Jun-99	39	61	0.9015	1.290	3.664	0.786
12-Apr-99	130	62	0.9164	1.381	4.868	0.982
18-Apr-94	170	63	0.9312	1.485	5.136	0.981
27-May-99	180	64	0.9461	1.608	5.193	
20-Apr-99	260	65	0.9610	1.762	5.561	
25-May-99	340	66	0.9758	1.974	5.829	
24-Apr-98	526	67	0.9907	2.354	6.265	

update for EV, CV:

tPb		**SF268**			403	403
LN Analysis		**tPb**			1.16	1.16
Discharge, Q		**Q Data, EV=403 cfs CV=1.16**				
Avg:	403	**Q Data-based LN**				
SD:	468	u	lnQ	Q		
CV:	1.16	3	8.3	4210		
Min:	46	0	5.57	263		
Max:	2,460	-3	2.80	16		
Median:	253					
					0.953	0.953
					417.7	418
	u=mLn(Q)+b:				1.48	1.48

update for r2, EV, CV: **r2=0.953, EV=418 cfs CV=1.48; max r2=0.99**

r2 u,lnQ:	0.953	u	lnQ	Q
slope, m:	0.929	3	8.69	5915
intercept, b:	-5.067	0	5.46	234
N:	67	-3	2.23	9
E[Q]:	417.7	Parameter Estimates		
SD[Q]:	618	from LN regression		
CV[Q]:	1.48	update graph label		

	Q	N: 67				max r2 0.985
	Discharge	i	i-3/8 / N+1/4	u	Ln	r2
Date	cfs	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
5-Oct-94	46	1	0.0093	-2.354	3.829	0.953
16-Nov-94	56	2	0.0242	-1.974	4.025	0.961
16-Aug-94	59	3	0.0390	-1.762	4.078	0.967
27-Oct-98	64	4	0.0539	-1.608	4.159	0.972
1-Oct-91	67.3	5	0.0688	-1.485	4.209	0.975
19-Oct-98	68	6	0.0836	-1.381	4.220	0.979
14-Sep-95	70	7	0.0985	-1.290	4.248	0.981
4-Oct-91	72.5	8	0.1134	-1.209	4.284	0.982
5-Oct-91	73	9	0.1283	-1.135	4.290	0.984
23-Sep-98	73	10	0.1431	-1.066	4.290	0.984
29-Oct-93	74	11	0.1580	-1.003	4.304	0.985
21-Dec-93	74	12	0.1729	-0.943	4.304	0.984
17-Feb-94	75	13	0.1877	-0.886	4.317	0.984
2-Oct-91	77	14	0.2026	-0.832	4.344	0.983
3-Oct-91	77	15	0.2175	-0.781	4.344	0.982
1-Dec-93	77	16	0.2323	-0.731	4.344	0.982
23-Jul-94	87	17	0.2472	-0.683	4.466	0.981
14-Dec-94	87	18	0.2621	-0.637	4.466	0.980
25-Aug-98	90	19	0.2770	-0.592	4.500	0.980
17-Nov-98	94	20	0.2918	-0.548	4.543	0.979
15-Aug-95	108	21	0.3067	-0.505	4.682	0.979
30-Aug-99	113	22	0.3216	-0.463	4.727	0.979
21-Jan-94	117	23	0.3364	-0.422	4.762	0.978
27-Jul-98	119	24	0.3513	-0.382	4.779	0.978
26-Jul-95	126	25	0.3662	-0.342	4.836	0.978
24-Jun-94	154	26	0.3810	-0.303	5.037	0.978
24-Nov-98	156	27	0.3959	-0.264	5.050	0.977
9-Aug-99	168	28	0.4108	-0.226	5.124	0.976
12-Jul-95	177	29	0.4257	-0.187	5.176	0.975
5-Nov-97	177	30	0.4405	-0.150	5.176	0.973
4-Jan-99	194	31	0.4554	-0.112	5.268	0.972
15-Dec-98	200	32	0.4703	-0.075	5.298	0.971
10-Feb-99	235	33	0.4851	-0.037	5.460	0.969
9-Mar-99	253	34	0.5000	0.000	5.533	0.968
28-Jun-95	254	35	0.5149	0.037	5.537	0.967
9-Mar-99	254	36	0.5297	0.075	5.537	0.966
8-Jun-94	262	37	0.5446	0.112	5.568	0.964
9-Feb-95	264	38	0.5595	0.150	5.576	0.962
23-Mar-94	268	39	0.5743	0.187	5.591	0.959
25-Jun-98	268	40	0.5892	0.226	5.591	0.957
7-Mar-94	287	41	0.6041	0.264	5.659	0.955
14-Jan-99	315	42	0.6190	0.303	5.753	0.952
20-May-94	338	43	0.6338	0.342	5.823	0.949
12-Apr-99	355	44	0.6487	0.382	5.872	0.945
21-Jan-99	358	45	0.6636	0.422	5.881	0.941

6-Apr-94	359	46	0.6784	0.463	5.883	0.936
8-Mar-95	380	47	0.6933	0.505	5.940	0.932
15-Jul-99	406	48	0.7082	0.548	6.006	0.928
3-May-94	407	49	0.7230	0.592	6.009	0.923
13-Jun-95	420	50	0.7379	0.637	6.040	0.920
27-Apr-95	443	51	0.7528	0.683	6.094	0.921
11-Jan-95	474	52	0.7677	0.731	6.161	0.929
14-Apr-95	536	53	0.7825	0.781	6.284	0.947
6-May-99	664	54	0.7974	0.832	6.498	0.970
24-May-95	699	55	0.8123	0.886	6.550	0.973
18-Apr-94	805	56	0.8271	0.943	6.691	0.981
23-Mar-95	876	57	0.8420	1.003	6.775	0.981
11-May-95	896	58	0.8569	1.066	6.798	0.977
16-May-91	1010	59	0.8717	1.135	6.918	0.976
15-May-91	1040	60	0.8866	1.209	6.947	0.972
17-May-91	1100	61	0.9015	1.290	7.003	0.965
24-Apr-98	1270	62	0.9164	1.381	7.147	0.955
11-May-98	1280	63	0.9312	1.485	7.155	0.980
20-Apr-99	1320	64	0.9461	1.608	7.185	
1-Jun-99	1450	65	0.9610	1.762	7.279	
27-May-99	1740	66	0.9758	1.974	7.462	
25-May-99	2460	67	0.9907	2.354	7.808	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.		see comment
Station:	SF268	Date: 20-Jun-00
Chemical:	tZn	Analyst: J.MacLachlan
Notes:		

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	35,104	403	959	1,435		0.00	0.00	0.00
SD:	954	468	400	1,263		1.00	1.00	1.00
CV:	0.03	1.16	0.42	0.88				
Min:	33,373	46	250	365.8		-0.76	-1.77	-0.85
Max:	36,402	2,460	1,750	7,941		4.39	1.98	5.15
Median:	34,843	253	897	1,073		-0.32	-0.15	-0.29

tZn SF268		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.409)	update r2	0.41	0.409		r2:	0.032	0.037
r2 Q,[COC]:	0.41	[tCd]	Q		m:	0.0879	0.00021
slope, m:	-0.5	1,154	46.0		b:	-2681	-1.82
intercept, b:	1179.4	959	403.2				
N: 67		-165	2460				
LnConc. = mLn(Q)+b (r2=0.699)	update r2	0.70	0.699				
r2 lnQ,ln[COC]:	0.70	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.37	7.37	3.83	1,581	46		
intercept, b:	8.76	6.57	6.00	715	403		
N: 67		5.91	7.81	370	2,460		

N= 67

	Sampling Date	Q Discharge	tZn Concentration	tZn Load	Ln Q	Ln tZn	Ln tZn	tZn SF268 Standardized Values = (x - Avg)/SD		for graph 0
update for new data		cfs	ug/L	lbs/day		Conc.	Load	Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	1040	458	2562.6	6.95	6.13	7.85	1.36	-1.25	0.89
MFG	16-May-91	1010	439	2385.4	6.92	6.08	7.78	1.30	-1.30	0.75
MFG	17-May-91	1100	417	2467.8	7.00	6.03	7.81	1.49	-1.35	0.82
MFG	1-Oct-91	67.3	1620	586.6	4.21	7.39	6.37	-0.72	1.65	-0.67
MFG	2-Oct-91	77	1730	716.7	4.34	7.46	6.57	-0.70	1.93	-0.57
MFG	3-Oct-91	77	1750	725.0	4.34	7.47	6.59	-0.70	1.98	-0.56
MFG	4-Oct-91	72.5	1720	670.9	4.28	7.45	6.51	-0.71	1.90	-0.60
MFG	5-Oct-91	73	1640	644.1	4.29	7.40	6.47	-0.70	1.70	-0.63
IDEQ	29-Oct-93	74	1280	509.6	4.30	7.15	6.23	-0.70	0.80	-0.73
IDEQ	1-Dec-93	77	1350	559.3	4.34	7.21	6.33	-0.70	0.98	-0.69
IDEQ	21-Dec-93	74	1590	633.0	4.30	7.37	6.45	-0.70	1.58	-0.63
IDEQ	21-Jan-94	117	1090	686.1	4.76	6.99	6.53	-0.61	0.33	-0.59
IDEQ	17-Feb-94	75	1380	556.8	4.32	7.23	6.32	-0.70	1.05	-0.70
IDEQ	7-Mar-94	287	1030	1590.4	5.66	6.94	7.37	-0.25	0.18	0.12
IDEQ	23-Mar-94	268	1130	1629.3	5.59	7.03	7.40	-0.29	0.43	0.15
IDEQ	6-Apr-94	359	754	1456.3	5.88	6.63	7.28	-0.09	-0.51	0.02
IDEQ	18-Apr-94	805	677	2932.0	6.69	6.52	7.98	0.86	-0.70	1.18
IDEQ	3-May-94	407	522	1143.0	6.01	6.26	7.04	0.01	-1.09	-0.23
IDEQ	20-May-94	338	536	974.7	5.82	6.28	6.88	-0.14	-1.06	-0.36
IDEQ	8-Jun-94	262	761	1072.7	5.57	6.63	6.98	-0.30	-0.49	-0.29
IDEQ	24-Jun-94	154	904	749.0	5.04	6.81	6.62	-0.53	-0.14	-0.54
IDEQ	23-Jul-94	87	950	444.7	4.47	6.86	6.10	-0.68	-0.02	-0.78
IDEQ	16-Aug-94	59	1330	422.2	4.08	7.19	6.05	-0.73	0.93	-0.80
IDEQ	5-Oct-94	46	1680	415.8	3.83	7.43	6.03	-0.76	1.80	-0.81
IDEQ	16-Nov-94	56	1710	515.2	4.03	7.44	6.24	-0.74	1.88	-0.73
IDEQ	14-Dec-94	87	1730	809.7	4.47	7.46	6.70	-0.68	1.93	-0.49
IDEQ	11-Jan-95	474	820	2091.1	6.16	6.71	7.65	0.15	-0.35	0.52
IDEQ	9-Feb-95	264	841	1194.5	5.58	6.73	7.09	-0.30	-0.29	-0.19
IDEQ	8-Mar-95	380	897	1833.8	5.94	6.80	7.51	-0.05	-0.15	0.32
IDEQ	23-Mar-95	876	855	4029.5	6.78	6.75	8.30	1.01	-0.26	2.05
IDEQ	14-Apr-95	536	840	2422.3	6.28	6.73	7.79	0.28	-0.30	0.78
IDEQ	27-Apr-95	443	767	1828.0	6.09	6.64	7.51	0.08	-0.48	0.31
IDEQ	11-May-95	896	551	2656.1	6.80	6.31	7.88	1.05	-1.02	0.97
IDEQ	24-May-95	699	476	1790.1	6.55	6.17	7.49	0.63	-1.21	0.28
IDEQ	13-Jun-95	420	526	1188.5	6.04	6.27	7.08	0.04	-1.08	-0.20
IDEQ	28-Jun-95	254	694	948.4	5.54	6.54	6.85	-0.32	-0.66	-0.39
IDEQ	12-Jul-95	177	824	784.7	5.18	6.71	6.67	-0.48	-0.34	-0.51
IDEQ	26-Jul-95	126	1020	691.4	4.84	6.93	6.54	-0.59	0.15	-0.59
IDEQ	15-Aug-95	108	1120	650.8	4.68	7.02	6.48	-0.63	0.40	-0.62
IDEQ	14-Sep-95	70	1270	478.3	4.25	7.15	6.17	-0.71	0.78	-0.76
URS	5-Nov-97	177	1190	1133.2	5.18	7.08	7.03	-0.48	0.58	-0.24
IDEQ	24-Apr-98	1270	694	4741.8	7.15	6.54	8.46	1.85	-0.66	2.62
URS	11-May-98	1280	370	2548.0	7.15	5.91	7.84	1.87	-1.47	0.88
IDEQ	25-Jun-98	268	678	977.6	5.59	6.52	6.89	-0.29	-0.70	-0.36
IDEQ	27-Jul-98	119	763	488.5	4.78	6.64	6.19	-0.61	-0.49	-0.75

IDEQ	25-Aug-98	90	1050	508.4	4.50	6.96	6.23	-0.67	0.23	-0.73
IDEQ	23-Sep-98	73	1070	420.2	4.29	6.98	6.04	-0.70	0.28	-0.80
USGS	19-Oct-98	68	1000	365.8	4.22	6.91	5.90	-0.72	0.10	-0.85
IDEQ	27-Oct-98	64	1130	389.1	4.16	7.03	5.96	-0.72	0.43	-0.83
USGS	17-Nov-98	94	1400	708.0	4.54	7.24	6.56	-0.66	1.10	-0.58
IDEQ	24-Nov-98	156	1560	1309.3	5.05	7.35	7.18	-0.53	1.50	-0.10
USGS	15-Dec-98	200	1100	1183.6	5.30	7.00	7.08	-0.43	0.35	-0.20
IDEQ	4-Jan-99	194	989	1032.2	5.27	6.90	6.94	-0.45	0.07	-0.32
IDEQ	14-Jan-99	315	766	1298.1	5.75	6.64	7.17	-0.19	-0.48	-0.11
USGS	21-Jan-99	358	820	1579.4	5.88	6.71	7.36	-0.10	-0.35	0.11
USGS	10-Feb-99	235	1100	1390.7	5.46	7.00	7.24	-0.36	0.35	-0.04
USGS	9-Mar-99	253	1000	1361.1	5.53	6.91	7.22	-0.32	0.18	-0.06
USGS	9-Mar-99	254	1000	1366.5	5.54	6.91	7.22	-0.32	0.19	-0.05
USGS	12-Apr-99	355	730	1394.2	5.87	6.59	7.24	-0.10	-0.57	-0.03
USGS	20-Apr-99	1320	670	4758.1	7.19	6.51	8.47	1.96	-0.72	2.63
USGS	6-May-99	664	500	1786.2	6.50	6.21	7.49	0.56	-1.15	0.28
USGS	25-May-99	2460	600	7940.9	7.81	6.40	8.98	4.39	-0.90	5.15
USGS	27-May-99	1740	330	3089.2	7.46	5.80	8.04	2.85	-1.57	1.31
USGS	1-Jun-99	1450	250	1950.3	7.28	5.52	7.58	2.23	-1.77	0.41
USGS	15-Jul-99	406	432	943.6	6.01	6.07	6.85	0.01	-1.32	-0.39
USGS	9-Aug-99	168	655	592.0	5.12	6.48	6.38	-0.50	-0.76	-0.67
USGS	30-Aug-99	113	728	442.6	4.73	6.59	6.09	-0.62	-0.58	-0.79

tZn

Concentration over time analysis

	tZn	SF268		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.071**	**-0.00013**
	Time	**Ln[COC]**	**[COC]**		
first:	15-May-91	6.99	1,085		
mid:	24-May-95	6.80	902		
last:	30-Aug-99	6.61	741		
	LnConc.=mTime+b >'96 r2, m:			**0.507**	**-0.00390**
	17-Nov-98	7.11	1,226		
	30-Aug-99	6.00	402		

Load over time analysis

	tZn	SF268		
				Load over time
	LnLoad=mTime+b All data r2, m:			**0.012** **0.00008**
	Time	**LnLoad**	**Load**	
first:	15-May-91	6.86	954	
mid:	24-May-95	6.98	1,076	
last:	30-Aug-99	7.11	1,221	
	LnLoad=mTime+b >'96 r2, m:			**0.000** **0.00007**
	17-Nov-98	7.27	1,440	
	30-Aug-99	7.29	1,471	

max r2: 0.917

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.071	-0.00013	11.18
0.102	-0.00015	12.12
0.146	-0.00018	13.23
0.211	-0.00022	14.59
0.191	-0.00021	14.32
0.168	-0.00020	13.92
0.142	-0.00019	13.43
0.116	-0.00017	12.88
0.091	-0.00016	12.29
0.082	-0.00015	12.03
0.071	-0.00014	11.69
0.057	-0.00012	11.12
0.051	-0.00012	10.96
0.041	-0.00011	10.49
0.036	-0.00010	10.34
0.030	-0.00009	10.06
0.033	-0.00010	10.29
0.040	-0.00011	10.70
0.057	-0.00014	11.55
0.078	-0.00016	12.45
0.086	-0.00017	12.87
0.086	-0.00018	13.05
0.085	-0.00018	13.14
0.069	-0.00017	12.59
0.047	-0.00013	11.49
0.026	-0.00010	10.21
0.009	-0.00006	8.71
0.009	-0.00006	8.72
0.008	-0.00006	8.66
0.006	-0.00005	8.42
0.004	-0.00005	8.26
0.003	-0.00004	8.13
0.004	-0.00005	8.28
0.012	-0.00009	9.81
0.039	-0.00016	12.53
0.082	-0.00025	15.71
0.116	-0.00033	18.48
0.142	-0.00041	21.38
0.145	-0.00048	24.06
0.139	-0.00060	28.41
0.127	-0.00099	42.57
0.092	-0.00097	41.87
0.120	-0.00121	50.43
0.319	-0.00205	80.82
0.419	-0.00255	99.15

max r2: 0.971

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.012	0.00008	4.14
0.023	0.00011	3.08
0.036	0.00014	1.94
0.056	0.00018	0.58
0.048	0.00017	0.93
0.043	0.00017	1.07
0.038	0.00016	1.23
0.032	0.00015	1.53
0.025	0.00014	1.98
0.019	0.00012	2.65
0.014	0.00011	3.28
0.010	0.00009	3.81
0.007	0.00008	4.30
0.004	0.00006	5.08
0.005	0.00007	4.62
0.007	0.00008	4.09
0.009	0.00010	3.65
0.019	0.00014	2.17
0.020	0.00014	1.93
0.019	0.00014	1.92
0.020	0.00015	1.76
0.016	0.00014	2.20
0.008	0.00010	3.67
0.002	0.00005	5.44
0.000	-0.00001	7.45
0.003	-0.00006	9.26
0.006	-0.00009	10.34
0.003	-0.00006	9.36
0.003	-0.00007	9.61
0.001	-0.00005	8.76
0.001	0.00005	5.44
0.008	0.00011	3.02
0.016	0.00017	1.01
0.041	0.00028	-3.07
0.067	0.00038	-6.63
0.081	0.00045	-9.24
0.087	0.00051	-11.50
0.085	0.00057	-13.41
0.074	0.00062	-15.29
0.058	0.00070	-18.33
0.012	0.00056	-13.08
0.015	0.00071	-18.70
0.087	0.00178	-57.41
0.186	0.00280	-94.51
0.208	0.00323	-109.82

0.504	-0.00304	116.90	0.168	0.00307	-104.17
0.514	-0.00330	126.11	0.127	0.00282	-95.07
0.515	-0.00351	133.71	0.076	0.00224	-73.85
0.522	-0.00374	142.30	0.027	0.00131	-40.36
0.507	-0.00390	147.92	0.000	0.00007	4.57
0.451	-0.00373	141.97	0.010	-0.00080	36.45
0.362	-0.00329	125.85	0.017	-0.00118	50.14
0.303	-0.00313	120.14	0.035	-0.00182	73.38
0.252	-0.00300	115.13	0.074	-0.00286	111.16
0.248	-0.00325	124.35	0.115	-0.00390	149.06
0.225	-0.00344	131.21	0.152	-0.00508	191.83
0.122	-0.00262	101.52	0.228	-0.00705	263.52
0.042	-0.00155	62.55	0.324	-0.00931	345.32
0.008	0.00071	-19.49	0.531	-0.01402	516.83
0.086	0.00237	-79.99	0.739	-0.01840	675.87
0.310	0.00488	-171.11	0.692	-0.01880	690.62
0.466	0.00687	-243.57	0.852	-0.02399	879.14
0.917	0.01034	-369.92	0.971	-0.01912	702.16

update for EV, CV:

tZn
LN Analysis

SF268
tZn

Load

Load Data, EV=1430 lbs/day CV=0.88

Avg:	1,435
SD:	1,263
CV:	0.88
Min:	365.8
Max:	7,941
Median:	1,073

Load Data-based LN

u	ln tCd Load	tCd Load
3	9.3	10453
0	6.98	1077
-3	4.71	111.0

1,435	1430
0.88	0.88

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.968, EV=1430lbs/day CV=0.831; max r2=0.99**

r2 u,lnLoad:	0.968	u	lnLoad	Load
slope, m:	1.380	3	9.18	9662
intercept, b:	-9.662	0	7.00	1099
N:	67	-3	4.83	124.9
E[Load]:	1428.6	Parameter Estimates		
SD[Load]:	1187	from LN regression		
CV[Load]:	0.83	update graph label		

0.968	0.968
1428.6	1430
0.8	0.831

max r2
0.993

N: 67

Date	tZn Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
19-Oct-98	365.8	1	0.0093	-2.354	5.902	0.968
27-Oct-98	389.1	2	0.0242	-1.974	5.964	0.978
5-Oct-94	415.8	3	0.0390	-1.762	6.030	0.983
23-Sep-98	420.2	4	0.0539	-1.608	6.041	0.986
16-Aug-94	422.2	5	0.0688	-1.485	6.045	0.989
30-Aug-99	442.6	6	0.0836	-1.381	6.093	0.990
23-Jul-94	444.7	7	0.0985	-1.290	6.097	0.991
14-Sep-95	478.3	8	0.1134	-1.209	6.170	0.991
27-Jul-98	488.5	9	0.1283	-1.135	6.191	0.992
25-Aug-98	508.4	10	0.1431	-1.066	6.231	0.992
29-Oct-93	509.6	11	0.1580	-1.003	6.234	0.993
16-Nov-94	515.2	12	0.1729	-0.943	6.245	0.993
17-Feb-94	556.8	13	0.1877	-0.886	6.322	0.993
1-Dec-93	559.3	14	0.2026	-0.832	6.327	0.993
1-Oct-91	586.6	15	0.2175	-0.781	6.374	0.993
9-Aug-99	592.0	16	0.2323	-0.731	6.384	0.992
21-Dec-93	633.0	17	0.2472	-0.683	6.450	0.992
5-Oct-91	644.1	18	0.2621	-0.637	6.468	0.992
15-Aug-95	650.8	19	0.2770	-0.592	6.478	0.992
4-Oct-91	670.9	20	0.2918	-0.548	6.509	0.992
21-Jan-94	686.1	21	0.3067	-0.505	6.531	0.991
26-Jul-95	691.4	22	0.3216	-0.463	6.539	0.991
17-Nov-98	708.0	23	0.3364	-0.422	6.562	0.991
2-Oct-91	716.7	24	0.3513	-0.382	6.575	0.990
3-Oct-91	725.0	25	0.3662	-0.342	6.586	0.990
24-Jun-94	749.0	26	0.3810	-0.303	6.619	0.990
12-Jul-95	784.7	27	0.3959	-0.264	6.665	0.990
14-Dec-94	809.7	28	0.4108	-0.226	6.697	0.990
15-Jul-99	943.6	29	0.4257	-0.187	6.850	0.989
28-Jun-95	948.4	30	0.4405	-0.150	6.855	0.989
20-May-94	974.7	31	0.4554	-0.112	6.882	0.989
25-Jun-98	977.6	32	0.4703	-0.075	6.885	0.988
4-Jan-99	1032.2	33	0.4851	-0.037	6.939	0.988
8-Jun-94	1072.7	34	0.5000	0.000	6.978	0.987
5-Nov-97	1133.2	35	0.5149	0.037	7.033	0.987
3-May-94	1143.0	36	0.5297	0.075	7.041	0.986
15-Dec-98	1183.6	37	0.5446	0.112	7.076	0.986
13-Jun-95	1188.5	38	0.5595	0.150	7.080	0.986
9-Feb-95	1194.5	39	0.5743	0.187	7.085	0.985
14-Jan-99	1298.1	40	0.5892	0.226	7.169	0.984
24-Nov-98	1309.3	41	0.6041	0.264	7.177	0.984
9-Mar-99	1361.1	42	0.6190	0.303	7.216	0.984
9-Mar-99	1366.5	43	0.6338	0.342	7.220	0.983
10-Feb-99	1390.7	44	0.6487	0.382	7.238	0.982
12-Apr-99	1394.2	45	0.6636	0.422	7.240	0.981

6-Apr-94	1456.3	46	0.6784	0.463	7.284	0.980
21-Jan-99	1579.4	47	0.6933	0.505	7.365	0.978
7-Mar-94	1590.4	48	0.7082	0.548	7.372	0.977
23-Mar-94	1629.3	49	0.7230	0.592	7.396	0.975
6-May-99	1786.2	50	0.7379	0.637	7.488	0.973
24-May-95	1790.1	51	0.7528	0.683	7.490	0.973
27-Apr-95	1828.0	52	0.7677	0.731	7.511	0.971
8-Mar-95	1833.8	53	0.7825	0.781	7.514	0.968
1-Jun-99	1950.3	54	0.7974	0.832	7.576	0.964
11-Jan-95	2091.1	55	0.8123	0.886	7.645	0.960
16-May-91	2385.4	56	0.8271	0.943	7.777	0.955
14-Apr-95	2422.3	57	0.8420	1.003	7.792	0.961
17-May-91	2467.8	58	0.8569	1.066	7.811	0.965
11-May-98	2548.0	59	0.8717	1.135	7.843	0.967
15-May-91	2562.6	60	0.8866	1.209	7.849	0.968
11-May-95	2656.1	61	0.9015	1.290	7.885	0.961
18-Apr-94	2932.0	62	0.9164	1.381	7.983	0.950
27-May-99	3089.2	63	0.9312	1.485	8.036	0.932
23-Mar-95	4029.5	64	0.9461	1.608	8.301	
24-Apr-98	4741.8	65	0.9610	1.762	8.464	
20-Apr-99	4758.1	66	0.9758	1.974	8.468	
25-May-99	7948.9	67	0.9907	2.354	8.980	

		update for EV, CV:			
tZn		SF268		959	959
LN Analysis		tZn		0.42	0.418
Concentration		**Conc. Data, EV=959 ug/L CV=0.418**			
Avg:	959	Data-based LN			
SD:	400	u	ln[tCd]	[tCd]	
CV:	0.42	3	8.0	2946	
Min:	250	0	6.79	885	
Max:	1,750	-3	5.58	266	
Median:	897				

					0.974	0.974
	u=mLn(Conc.)+b:				972.5	973
update for r2, EV, CV:	r2=0.974, EV=973 ug/L CV=0.491; max r2=0.97				0.491	0.491
	r2 u,lnConc:	0.974	u	lnConc.	Conc.	
	slope, m:	2.150	3	8.17	3523	
	intercept, b:	-14.560	0	6.77	873	
	N:	67	-3	5.38	216	
	E[Conc]:	972.5	Parameter Estimates			
	SD[Conc]:	478	from LN regression			
	CV[Conc]:	0.49	update graph label			

	tZn	N: 67				max r2 0.974
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
1-Jun-99	250	1	0.0093	-2.354	5.521	0.974
27-May-99	330	2	0.0242	-1.974	5.799	0.974
11-May-98	370	3	0.0390	-1.762	5.914	0.973
17-May-91	417	4	0.0539	-1.608	6.033	0.971
15-Jul-99	432	5	0.0688	-1.485	6.068	0.970
16-May-91	439	6	0.0836	-1.381	6.084	0.968
15-May-91	458	7	0.0985	-1.290	6.127	0.967
24-May-95	476	8	0.1134	-1.209	6.165	0.966
6-May-99	500	9	0.1283	-1.135	6.215	0.965
3-May-94	522	10	0.1431	-1.066	6.258	0.964
13-Jun-95	526	11	0.1580	-1.003	6.265	0.963
20-May-94	536	12	0.1729	-0.943	6.284	0.962
11-May-95	551	13	0.1877	-0.886	6.312	0.962
25-May-99	600	14	0.2026	-0.832	6.397	0.963
9-Aug-99	655	15	0.2175	-0.781	6.485	0.961
20-Apr-99	670	16	0.2323	-0.731	6.507	0.960
18-Apr-94	677	17	0.2472	-0.683	6.518	0.958
25-Jun-98	678	18	0.2621	-0.637	6.519	0.956
28-Jun-95	694	19	0.2770	-0.592	6.542	0.954
24-Apr-98	694	20	0.2918	-0.548	6.542	0.951
30-Aug-99	728	21	0.3067	-0.505	6.590	0.949
12-Apr-99	730	22	0.3216	-0.463	6.593	0.947
6-Apr-94	754	23	0.3364	-0.422	6.625	0.944
8-Jun-94	761	24	0.3513	-0.382	6.635	0.942
27-Jul-98	763	25	0.3662	-0.342	6.637	0.939
14-Jan-99	766	26	0.3810	-0.303	6.641	0.936
27-Apr-95	767	27	0.3959	-0.264	6.642	0.933
11-Jan-95	820	28	0.4108	-0.226	6.709	0.931
21-Jan-99	820	29	0.4257	-0.187	6.709	0.928
12-Jul-95	824	30	0.4405	-0.150	6.714	0.924
14-Apr-95	840	31	0.4554	-0.112	6.733	0.921
9-Feb-95	841	32	0.4703	-0.075	6.735	0.917
23-Mar-95	855	33	0.4851	-0.037	6.751	0.915
8-Mar-95	897	34	0.5000	0.000	6.799	0.912
24-Jun-94	904	35	0.5149	0.037	6.807	0.907
23-Jul-94	950	36	0.5297	0.075	6.856	0.903
4-Jan-99	989	37	0.5446	0.112	6.897	0.897
19-Oct-98	1000	38	0.5595	0.150	6.908	0.891
9-Mar-99	1000	39	0.5743	0.187	6.908	0.885
9-Mar-99	1000	40	0.5892	0.226	6.908	0.878
26-Jul-95	1020	41	0.6041	0.264	6.928	0.870
7-Mar-94	1030	42	0.6190	0.303	6.937	0.861
25-Aug-98	1050	43	0.6338	0.342	6.957	0.851
23-Sep-98	1070	44	0.6487	0.382	6.975	0.841
21-Jan-94	1090	45	0.6636	0.422	6.994	0.829

15-Dec-98	1100	46	0.6784	0.463	7.003	0.816
10-Feb-99	1100	47	0.6933	0.505	7.003	0.801
15-Aug-95	1120	48	0.7082	0.548	7.021	0.786
23-Mar-94	1130	49	0.7230	0.592	7.030	0.770
27-Oct-98	1130	50	0.7379	0.637	7.030	0.755
5-Nov-97	1190	51	0.7528	0.683	7.082	0.750
14-Sep-95	1270	52	0.7677	0.731	7.147	0.739
29-Oct-93	1280	53	0.7825	0.781	7.155	0.713
16-Aug-94	1330	54	0.7974	0.832	7.193	0.689
1-Dec-93	1350	55	0.8123	0.886	7.208	0.656
17-Feb-94	1380	56	0.8271	0.943	7.230	0.624
17-Nov-98	1400	57	0.8420	1.003	7.244	0.602
24-Nov-98	1560	58	0.8569	1.066	7.352	0.759
21-Dec-93	1590	59	0.8717	1.135	7.371	0.747
1-Oct-91	1620	60	0.8866	1.209	7.390	0.732
5-Oct-91	1640	61	0.9015	1.290	7.402	0.707
5-Oct-94	1680	62	0.9164	1.381	7.427	0.795
16-Nov-94	1710	63	0.9312	1.485	7.444	0.938
4-Oct-91	1720	64	0.9461	1.608	7.450	
2-Oct-91	1730	65	0.9610	1.762	7.456	
14-Dec-94	1730	66	0.9758	1.974	7.456	
3-Oct-91	1750	67	0.9907	2.354	7.467	

update for EV, CV:

tZn		SF268			403	403
LN Analysis		tZn			1.16	1.16
Discharge, Q		**Q Data, EV=403 cfs CV=1.16**				
Avg:	403	Q Data-based LN				
SD:	468	u	lnQ	Q		
CV:	1.16	3	8.3	4210		
Min:	46	0	5.57	263		
Max:	2,460	-3	2.80	16		
Median:	253					
					0.953	0.953
					417.7	418
		u=mLn(Q)+b:			1.48	1.48
update for r2, EV, CV:		r2=0.953, EV=418 cfs CV=1.48; max r2=0.99				
	r2 u,lnQ:	0.953	u	lnQ	Q	
	slope, m:	0.929	3	8.69	5915	
	intercept, b:	-5.067	0	5.46	234	
	N:	67	-3	2.23	9	
	E[Q]:	417.7	Parameter Estimates			
	SD[Q]:	618	from LN regression			
	CV[Q]:	1.48	update graph label			

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.985 r2 forward
		N: 67				
update and rank for new data						
5-Oct-94	46	1	0.0093	-2.354	3.829	0.953
16-Nov-94	56	2	0.0242	-1.974	4.025	0.961
16-Aug-94	59	3	0.0390	-1.762	4.078	0.967
27-Oct-98	64	4	0.0539	-1.608	4.159	0.972
1-Oct-91	67.3	5	0.0688	-1.485	4.209	0.975
19-Oct-98	68	6	0.0836	-1.381	4.220	0.979
14-Sep-95	70	7	0.0985	-1.290	4.248	0.981
4-Oct-91	72.5	8	0.1134	-1.209	4.284	0.982
5-Oct-91	73	9	0.1283	-1.135	4.290	0.984
23-Sep-98	73	10	0.1431	-1.066	4.290	0.984
29-Oct-93	74	11	0.1580	-1.003	4.304	0.985
21-Dec-93	74	12	0.1729	-0.943	4.304	0.984
17-Feb-94	75	13	0.1877	-0.886	4.317	0.984
2-Oct-91	77	14	0.2026	-0.832	4.344	0.983
3-Oct-91	77	15	0.2175	-0.781	4.344	0.982
1-Dec-93	77	16	0.2323	-0.731	4.344	0.982
23-Jul-94	87	17	0.2472	-0.683	4.466	0.981
14-Dec-94	87	18	0.2621	-0.637	4.466	0.980
25-Aug-98	90	19	0.2770	-0.592	4.500	0.980
17-Nov-98	94	20	0.2918	-0.548	4.543	0.979
15-Aug-95	108	21	0.3067	-0.505	4.682	0.979
30-Aug-99	113	22	0.3216	-0.463	4.727	0.979
21-Jan-94	117	23	0.3364	-0.422	4.762	0.978
27-Jul-98	119	24	0.3513	-0.382	4.779	0.978
26-Jul-95	126	25	0.3662	-0.342	4.836	0.978
24-Jun-94	154	26	0.3810	-0.303	5.037	0.978
24-Nov-98	156	27	0.3959	-0.264	5.050	0.977
9-Aug-99	168	28	0.4108	-0.226	5.124	0.976
12-Jul-95	177	29	0.4257	-0.187	5.176	0.975
5-Nov-97	177	30	0.4405	-0.150	5.176	0.973
4-Jan-99	194	31	0.4554	-0.112	5.268	0.972
15-Dec-98	200	32	0.4703	-0.075	5.298	0.971
10-Feb-99	235	33	0.4851	-0.037	5.460	0.969
9-Mar-99	253	34	0.5000	0.000	5.533	0.968
28-Jun-95	254	35	0.5149	0.037	5.537	0.967
9-Mar-99	254	36	0.5297	0.075	5.537	0.966
8-Jun-94	262	37	0.5446	0.112	5.568	0.964
9-Feb-95	264	38	0.5595	0.150	5.576	0.962
23-Mar-94	268	39	0.5743	0.187	5.591	0.959
25-Jun-98	268	40	0.5892	0.226	5.591	0.957
7-Mar-94	287	41	0.6041	0.264	5.659	0.955
14-Jan-99	315	42	0.6190	0.303	5.753	0.952
20-May-94	338	43	0.6338	0.342	5.823	0.949
12-Apr-99	355	44	0.6487	0.382	5.872	0.945
21-Jan-99	358	45	0.6636	0.422	5.881	0.941

6-Apr-94	359	46	0.6784	0.463	5.883	0.936
8-Mar-95	380	47	0.6933	0.505	5.940	0.932
15-Jul-99	406	48	0.7082	0.548	6.006	0.928
3-May-94	407	49	0.7230	0.592	6.009	0.923
13-Jun-95	420	50	0.7379	0.637	6.040	0.920
27-Apr-95	443	51	0.7528	0.683	6.094	0.921
11-Jan-95	474	52	0.7677	0.731	6.161	0.929
14-Apr-95	536	53	0.7825	0.781	6.284	0.947
6-May-99	664	54	0.7974	0.832	6.498	0.970
24-May-95	699	55	0.8123	0.886	6.550	0.973
18-Apr-94	805	56	0.8271	0.943	6.691	0.981
23-Mar-95	876	57	0.8420	1.003	6.775	0.981
11-May-95	896	58	0.8569	1.066	6.798	0.977
16-May-91	1010	59	0.8717	1.135	6.918	0.976
15-May-91	1040	60	0.8866	1.209	6.947	0.972
17-May-91	1100	61	0.9015	1.290	7.003	0.965
24-Apr-98	1270	62	0.9164	1.381	7.147	0.955
11-May-98	1280	63	0.9312	1.485	7.155	0.980
20-Apr-99	1320	64	0.9461	1.608	7.185	
1-Jun-99	1450	65	0.9610	1.762	7.279	
27-May-99	1740	66	0.9758	1.974	7.462	
25-May-99	2460	67	0.9907	2.354	7.808	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF270	Date:	27-Jun-00
Chemical:	dCd	Analyst:	B.Walthall
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	34,925	349	11	16		0.00	0.00	0.00
SD:	626	330	6	12		1.00	1.00	1.00
CV:	0.02	0.94	0.52	0.77				
Min:	34,271	55	3	3.3		-0.89	-1.35	-1.03
Max:	36,228	1,230	31	63		2.67	3.38	3.87
Median:	34,739	197	10	13		-0.46	-0.22	-0.26

dCd SF270			: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.265)		update r2	0.27	0.265		r2:	0.017	0.022
r2 Q,[COC]:	0.27	[dCd]	Q			m:	0.0681	0.00023
slope, m:	0.0	14	55.0			b:	-2030	-2.57
intercept, b:	14.5	11	349.4					
N: 45		3	1230					
LnConc. = mLn(Q)+b (r2=0.425)		update r2	0.43	0.425				
r2 lnQ,ln[COC]:	0.43	ln[dCd]	ln Q	[dCd]	Q			
slope, m:	-0.32	2.76	4.01	16	55			
intercept, b:	4.03	2.17	5.86	9	349			
N: 45		1.77	7.11	6	1,230			

N= 45

	Sampling Date	Q Discharge	dCd Concentration	dCd Load	Ln Q	Ln dCd Conc.	Ln dCd Load	dCd SF270 Standardized Values = (x - Avg)/SD Q	for graph 0 Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
IDEQ	29-Oct-93	69.4	9.9	3.7	4.24	2.29	1.31	-0.85	-0.23	-1.00
IDEQ	1-Dec-93	69.4	12.3	4.6	4.24	2.51	1.52	-0.85	0.18	-0.92
IDEQ	21-Dec-93	69.4	17.2	6.4	4.24	2.84	1.86	-0.85	1.02	-0.77
IDEQ	21-Dec-93	75.05	17.2	6.9	4.32	2.84	1.94	-0.83	1.02	-0.73
IDEQ	21-Jan-94	117.39	17	10.7	4.77	2.83	2.37	-0.70	0.98	-0.42
IDEQ	21-Jan-94	124.87	17	11.4	4.83	2.83	2.44	-0.68	0.98	-0.36
IDEQ	17-Feb-94	74.32	14	5.6	4.31	2.64	1.72	-0.83	0.47	-0.84
IDEQ	7-Mar-94	313.19	10	16.8	5.75	2.30	2.82	-0.11	-0.22	0.08
IDEQ	23-Mar-94	283.62	11	16.8	5.65	2.40	2.82	-0.20	-0.05	0.08
IDEQ	6-Apr-94	394.31	8.2	17.4	5.98	2.10	2.86	0.14	-0.53	0.13
IDEQ	18-Apr-94	957.4	6.3	32.5	6.86	1.84	3.48	1.84	-0.85	1.36
IDEQ	3-May-94	1009.84	5.4	29.3	6.92	1.69	3.38	2.00	-1.01	1.11
IDEQ	20-May-94	435.57	5.1	12.0	6.08	1.63	2.48	0.26	-1.06	-0.32
IDEQ	8-Jun-94	262	7	9.9	5.57	1.95	2.29	-0.27	-0.73	-0.49
IDEQ	24-Jun-94	155.53	8.9	7.4	5.05	2.19	2.01	-0.59	-0.41	-0.69
IDEQ	23-Jul-94	86.25	8	3.7	4.46	2.08	1.31	-0.80	-0.56	-1.00
IDEQ	16-Aug-94	69.4	10.2	3.8	4.24	2.32	1.34	-0.85	-0.18	-0.99
IDEQ	9-Sep-94	62.45	10.5	3.5	4.13	2.35	1.26	-0.87	-0.13	-1.01
IDEQ	5-Oct-94	54.98	11	3.3	4.01	2.40	1.18	-0.89	-0.05	-1.03
IDEQ	16-Nov-94	96.4	30	15.6	4.57	3.40	2.74	-0.77	3.21	-0.02
IDEQ	14-Dec-94	113.97	31	19.0	4.74	3.43	2.94	-0.71	3.38	0.26
IDEQ	11-Jan-95	466.16	17	42.6	6.14	2.83	3.75	0.35	0.98	2.20
IDEQ	9-Feb-95	526.86	8.1	23.0	6.27	2.09	3.13	0.54	-0.54	0.58
IDEQ	8-Mar-95	386.4	7.9	16.4	5.96	2.07	2.80	0.11	-0.58	0.05
IDEQ	23-Mar-95	1170.56	10	63.0	7.07	2.30	4.14	2.49	-0.22	3.87
IDEQ	14-Apr-95	603.44	7.9	25.6	6.40	2.07	3.24	0.77	-0.58	0.80
IDEQ	27-Apr-95	498.21	7.4	19.8	6.21	2.00	2.99	0.45	-0.66	0.33
IDEQ	11-May-95	1088.15	5.8	34.0	6.99	1.76	3.53	2.24	-0.94	1.49
IDEQ	24-May-95	772.69	5.4	22.4	6.65	1.69	3.11	1.28	-1.01	0.54
IDEQ	13-Jun-95	448.51	5.3	12.8	6.11	1.67	2.55	0.30	-1.02	-0.25
IDEQ	28-Jun-95	280.46	7.7	11.6	5.64	2.04	2.45	-0.21	-0.61	-0.35
IDEQ	12-Jul-95	196.51	9.7	10.3	5.28	2.27	2.33	-0.46	-0.27	-0.46
IDEQ	26-Jul-95	145.29	10	7.8	4.98	2.30	2.06	-0.62	-0.22	-0.66
IDEQ	15-Aug-95	135.53	11	8.0	4.91	2.40	2.08	-0.65	-0.05	-0.64
IDEQ	14-Sep-95	86.25	11	5.1	4.46	2.40	1.63	-0.80	-0.05	-0.88
URS	4-Nov-97	183	12.9	12.7	5.21	2.56	2.54	-0.50	0.28	-0.26
IDEQ	24-Apr-98	779.1	4.8	20.1	6.66	1.57	3.00	1.30	-1.11	0.35
URS	11-May-98	1230	3.4	22.5	7.11	1.22	3.11	2.67	-1.35	0.55
IDEQ	29-May-98	577.1	6.7	20.8	6.36	1.90	3.04	0.69	-0.78	0.41
IDEQ	29-Sep-98	68.2	13	4.8	4.22	2.56	1.56	-0.85	0.30	-0.91
IDEQ	8-Oct-98	70.6	14	5.3	4.26	2.64	1.67	-0.85	0.47	-0.87
IDEQ	24-Nov-98	139.4	24	18.0	4.94	3.18	2.89	-0.64	2.18	0.18
IDEQ	4-Jan-99	159.8	12	10.3	5.07	2.48	2.33	-0.58	0.12	-0.45
IDEQ	14-Jan-99	614.2	13	43.0	6.42	2.56	3.76	0.80	0.30	2.23
IDEQ	9-Mar-99	201.5	12	13.0	5.31	2.48	2.57	-0.45	0.12	-0.23

dCd

Concentration over time analysis

	dCd	SF270		r2	Slope, m
	LnConc.=mTime+b All data r2, m:			Concentration over time	
				0.001	-0.00002
	Time	Ln[COC]	[COC]		
first:	29-Oct-93	2.32	10		
mid:	9-Feb-95	2.31	10		
last:	9-Mar-99	2.29	10		
	LnConc.=mTime+b >'96 r2, m:			#REF!	#REF!
	#REF!	#REF!	#REF!		
	9-Mar-99	#REF!	#REF!		

Load over time analysis

	dCd	SF270			
	LnLoad=mTime+b All data r2, m:			Load over time	
				0.031	0.00021
	Time	LnLoad	Load		
first:	29-Oct-93	2.36	11		
mid:	9-Feb-95	2.46	12		
last:	9-Mar-99	2.77	16		
	LnLoad=mTime+b >'96 r2, m:			#REF!	#REF!
	#REF!	#REF!	#REF!		
	9-Mar-99	#REF!	#REF!		

	max r2:	0.610		max r2:	0.397	
	Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.001	-0.00002	2.96	0.031	0.00021	-4.84
	0.001	-0.00002	3.00	0.021	0.00017	-3.38
	0.000	-0.00001	2.74	0.014	0.00013	-2.15
	0.000	0.00001	2.00	0.009	0.00011	-1.30
	0.002	0.00003	1.17	0.006	0.00009	-0.48
	0.005	0.00006	0.32	0.005	0.00008	-0.26
	0.012	0.00008	-0.63	0.004	0.00008	-0.11
	0.018	0.00010	-1.32	0.001	0.00004	1.18
	0.020	0.00011	-1.53	0.002	0.00005	0.79
	0.023	0.00012	-1.91	0.003	0.00006	0.37
	0.022	0.00012	-1.82	0.004	0.00008	-0.15
	0.016	0.00010	-1.23	0.011	0.00013	-1.87
	0.008	0.00007	-0.28	0.020	0.00017	-3.57
	0.003	0.00004	0.89	0.020	0.00018	-3.68
	0.001	0.00002	1.54	0.018	0.00017	-3.40
	0.000	0.00002	1.75	0.012	0.00014	-2.46
	0.000	0.00000	2.22	0.003	0.00007	0.14
	0.000	0.00000	2.19	0.000	-0.00001	3.00
	0.000	0.00001	2.08	0.008	-0.00010	6.41
	0.000	0.00001	1.84	0.042	-0.00022	10.47
	0.013	0.00009	-1.03	0.044	-0.00023	10.88
	0.067	0.00019	-4.37	0.042	-0.00023	10.80
	0.121	0.00024	-6.47	0.022	-0.00016	8.38
	0.120	0.00025	-6.66	0.015	-0.00013	7.44
	0.117	0.00025	-6.77	0.014	-0.00013	7.39
	0.134	0.00028	-7.70	0.000	0.00000	2.68
	0.132	0.00029	-7.93	0.004	0.00006	0.34
	0.123	0.00029	-7.93	0.012	0.00011	-1.50
	0.093	0.00025	-6.74	0.061	0.00025	-6.44
	0.056	0.00020	-4.74	0.128	0.00037	-10.75
	0.019	0.00012	-1.81	0.155	0.00044	-13.05
	0.007	0.00008	-0.41	0.179	0.00051	-15.66
	0.006	0.00008	-0.53	0.195	0.00059	-18.58
	0.007	0.00010	-1.21	0.167	0.00063	-19.98
	0.021	0.00023	-5.79	0.141	0.00075	-24.23
	0.213	0.00176	-61.00	0.004	-0.00026	12.05
	0.610	0.00404	-143.54	0.018	-0.00081	31.91
	0.518	0.00387	-137.27	0.002	-0.00034	14.99
	0.242	0.00197	-68.63	0.022	0.00124	-42.13
	0.082	-0.00122	46.80	0.397	0.00830	-297.53
	0.218	-0.00238	88.73	0.218	0.00628	-224.23

update for EV, CV:

dCd
LN Analysis
SF270
dCd

Load

Load Data, EV=15.9 lbs/day CV=0.768

Avg:	16	**Load Data-based LN**	
SD:	12	u	ln dCd Load	dCd Load
CV:	0.77	3	4.6	97
Min:	3.3	0	2.53	13
Max:	63	-3	0.49	1.6
Median:	13			
		16	15.9	
		0.77	0.768	

u=mLn(Load)+ b:

update for r2, EV, CV: **r2=0.982, EV=16.4lbs/day CV=0.904; max r2=0.99**

r2 u,lnLoad:	0.982	u	lnLoad	Load	
slope, m:	1.294	3	4.81	123	
intercept, b:	-3.232	0	2.50	12	
N:	45	-3	0.18	1.2	
E[Load]:	16.4	Parameter Estimates			0.982 0.982
SD[Load]:	15	from LN regression			16.4 16.4
CV[Load]:	0.90	update graph label			0.9 0.904

max r2 0.991

Date	dCd Load lbs/day Ranked	N: 45 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
5-Oct-94	3.3	1	0.0138	-2.203	1.180	0.982
9-Sep-94	3.5	2	0.0359	-1.800	1.261	0.987
29-Oct-93	3.7	3	0.0580	-1.572	1.307	0.988
23-Jul-94	3.7	4	0.0801	-1.404	1.312	0.987
16-Aug-94	3.8	5	0.1022	-1.269	1.337	0.986
1-Dec-93	4.6	6	0.1243	-1.154	1.524	0.986
29-Sep-98	4.8	7	0.1464	-1.052	1.562	0.985
14-Sep-95	5.1	8	0.1685	-0.960	1.630	0.985
8-Oct-98	5.3	9	0.1906	-0.876	1.671	0.985
17-Feb-94	5.6	10	0.2127	-0.797	1.722	0.986
21-Dec-93	6.4	11	0.2348	-0.723	1.860	0.988
21-Dec-93	6.9	12	0.2569	-0.653	1.938	0.988
24-Jun-94	7.4	13	0.2790	-0.586	2.008	0.988
26-Jul-95	7.8	14	0.3011	-0.521	2.056	0.988
15-Aug-95	8.0	15	0.3232	-0.459	2.082	0.989
8-Jun-94	9.9	16	0.3453	-0.398	2.289	0.991
12-Jul-95	10.3	17	0.3674	-0.339	2.328	0.990
4-Jan-99	10.3	18	0.3895	-0.281	2.334	0.989
21-Jan-94	10.7	19	0.4116	-0.223	2.374	0.989
21-Jan-94	11.4	20	0.4337	-0.167	2.435	0.988
28-Jun-95	11.6	21	0.4558	-0.111	2.453	0.987
20-May-94	12.0	22	0.4779	-0.055	2.481	0.986
4-Nov-97	12.7	23	0.5000	0.000	2.542	0.985
13-Jun-95	12.8	24	0.5221	0.055	2.549	0.984
9-Mar-99	13.0	25	0.5442	0.111	2.566	0.983
16-Nov-94	15.6	26	0.5663	0.167	2.745	0.983
8-Mar-95	16.4	27	0.5884	0.223	2.799	0.983
23-Mar-94	16.8	28	0.6105	0.281	2.820	0.984
7-Mar-94	16.8	29	0.6326	0.339	2.824	0.985
6-Apr-94	17.4	30	0.6547	0.398	2.856	0.984
24-Nov-98	18.0	31	0.6768	0.459	2.890	0.983
14-Dec-94	19.0	32	0.6989	0.521	2.945	0.982
27-Apr-95	19.8	33	0.7210	0.586	2.987	0.982
24-Apr-98	20.1	34	0.7431	0.653	3.002	0.982
29-May-98	20.8	35	0.7652	0.723	3.035	0.980
24-May-95	22.4	36	0.7873	0.797	3.111	0.977
11-May-98	22.5	37	0.8094	0.876	3.113	0.976
9-Feb-95	23.0	38	0.8315	0.960	3.134	0.970
14-Apr-95	25.6	39	0.8536	1.052	3.244	0.969
3-May-94	29.3	40	0.8757	1.154	3.379	0.964
18-Apr-94	32.5	41	0.8978	1.269	3.480	0.951
11-May-95	34.0	42	0.9199	1.404	3.525	
11-Jan-95	42.6	43	0.9420	1.572	3.753	
14-Jan-99	43.0	44	0.9641	1.800	3.760	
23-Mar-95	63.0	45	0.9862	2.203	4.143	

update for EV, CV:

dCd		SF270		11	11.3
LN Analysis		dCd		0.52	0.518
Concentration		Conc. Data, EV=11.3 ug/L CV=0.518			
Avg:	11	Data-based LN			
SD:	6	u	ln[dCd]	[dCd]	
CV:	0.52	3	3.8	43	
Min:	3	0	2.30	10	
Max:	31	-3	0.84	2	
Median:	10				

					0.981	0.981
u=mLn(Conc.)+b:					11.3	11.3
update for r2, EV, CV:	r2=0.981, EV=11.3 ug/L CV=0.516; max r2=0.98				0.516	0.516
	r2 u,lnConc:	0.981	u	lnConc.	Conc.	
	slope, m:	2.057	3	3.77	43	
	intercept, b:	-4.751	0	2.31	10	
	N: 45		-3	0.85	2	
	E[Conc]:	11.3	Parameter Estimates			
	SD[Conc]:	6	from LN regression			
	CV[Conc]:	0.52	update graph label			

Date	dCd Concentration ug/L Ranked	i rank	N: 45 i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.981 r2 forward
update and rank for new data						
11-May-98	3.4	1	0.0138	-2.203	1.224	0.981
24-Apr-98	4.8	2	0.0359	-1.800	1.569	0.979
20-May-94	5.1	3	0.0580	-1.572	1.629	0.979
13-Jun-95	5.3	4	0.0801	-1.404	1.668	0.978
3-May-94	5.4	5	0.1022	-1.269	1.686	0.977
24-May-95	5.4	6	0.1243	-1.154	1.686	0.975
11-May-95	5.8	7	0.1464	-1.052	1.758	0.973
18-Apr-94	6.3	8	0.1685	-0.960	1.841	0.971
29-May-98	6.7	9	0.1906	-0.876	1.902	0.969
8-Jun-94	7	10	0.2127	-0.797	1.946	0.967
27-Apr-95	7.4	11	0.2348	-0.723	2.001	0.966
28-Jun-95	7.7	12	0.2569	-0.653	2.041	0.964
8-Mar-95	7.9	13	0.2790	-0.586	2.067	0.963
14-Apr-95	7.9	14	0.3011	-0.521	2.067	0.962
23-Jul-94	8	15	0.3232	-0.459	2.079	0.960
9-Feb-95	8.1	16	0.3453	-0.398	2.092	0.958
6-Apr-94	8.2	17	0.3674	-0.339	2.104	0.955
24-Jun-94	8.9	18	0.3895	-0.281	2.186	0.951
12-Jul-95	9.7	19	0.4116	-0.223	2.272	0.949
29-Oct-93	9.9	20	0.4337	-0.167	2.293	0.950
7-Mar-94	10	21	0.4558	-0.111	2.303	0.952
23-Mar-95	10	22	0.4779	-0.055	2.303	0.953
26-Jul-95	10	23	0.5000	0.000	2.303	0.953
16-Aug-94	10.2	24	0.5221	0.055	2.322	0.952
9-Sep-94	10.5	25	0.5442	0.111	2.351	0.950
23-Mar-94	11	26	0.5663	0.167	2.398	0.948
5-Oct-94	11	27	0.5884	0.223	2.398	0.949
15-Aug-95	11	28	0.6105	0.281	2.398	0.948
14-Sep-95	11	29	0.6326	0.339	2.398	0.944
4-Jan-99	12	30	0.6547	0.398	2.485	0.938
9-Mar-99	12	31	0.6768	0.459	2.485	0.937
1-Dec-93	12.3	32	0.6989	0.521	2.510	0.932
4-Nov-97	12.9	33	0.7210	0.586	2.557	0.926
29-Sep-98	13	34	0.7431	0.653	2.565	0.920
14-Jan-99	13	35	0.7652	0.723	2.565	0.911
17-Feb-94	14	36	0.7873	0.797	2.639	0.896
8-Oct-98	14	37	0.8094	0.876	2.639	0.878
21-Jan-94	17	38	0.8315	0.960	2.833	0.851
21-Jan-94	17	39	0.8536	1.052	2.833	0.860
11-Jan-95	17	40	0.8757	1.154	2.833	0.856
21-Dec-93	17.2	41	0.8978	1.269	2.845	0.826
21-Dec-93	17.2	42	0.9199	1.404	2.845	
24-Nov-98	24	43	0.9420	1.572	3.178	
16-Nov-94	30	44	0.9641	1.800	3.401	
14-Dec-94	31	45	0.9862	2.203	3.434	

update for EV, CV:

dCd		**SF270**			349	349
LN Analysis		**dCd**			0.94	0.943
Discharge, Q		**Q Data, EV=349 cfs CV=0.943**				
Avg:	**349**	**Q Data-based LN**				
SD:	**330**	u	lnQ	Q		
CV:	**0.94**	3	7.9	2783		
Min:	**55**	0	5.54	254		
Max:	**1,230**	-3	3.14	23		
Median:	**197**					
					0.941	0.941
					376.0	376
	u=mLn(Q)+b:				1.35	1.35

update for r2, EV, CV: **r2=0.941, EV=376 cfs CV=1.35; max r2=0.97**

r2 u,lnQ:	0.941	u	lnQ	Q
slope, m:	0.983	3	8.46	4742
intercept, b:	-5.320	0	5.41	224
N: 45		-3	2.36	11
E[Q]:	376.0	Parameter Estimates		
SD[Q]:	507	from LN regression		
CV[Q]:	1.35	update graph label		

N: 45

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.968 r2 forward
update and rank for new data						
5-Oct-94	54.98	1	0.0138	-2.203	4.007	0.941
9-Sep-94	62.45	2	0.0359	-1.800	4.134	0.953
29-Sep-98	68.2	3	0.0580	-1.572	4.222	0.960
29-Oct-93	69.4	4	0.0801	-1.404	4.240	0.965
1-Dec-93	69.4	5	0.1022	-1.269	4.240	0.967
21-Dec-93	69.4	6	0.1243	-1.154	4.240	0.968
16-Aug-94	69.4	7	0.1464	-1.052	4.240	0.967
8-Oct-98	70.6	8	0.1685	-0.960	4.257	0.964
17-Feb-94	74.32	9	0.1906	-0.876	4.308	0.962
21-Dec-93	75.05	10	0.2127	-0.797	4.318	0.959
23-Jul-94	86.25	11	0.2348	-0.723	4.457	0.956
14-Sep-95	86.25	12	0.2569	-0.653	4.457	0.953
16-Nov-94	96.4	13	0.2790	-0.586	4.569	0.951
14-Dec-94	113.97	14	0.3011	-0.521	4.736	0.948
21-Jan-94	117.39	15	0.3232	-0.459	4.766	0.945
21-Jan-94	124.87	16	0.3453	-0.398	4.827	0.941
15-Aug-95	135.53	17	0.3674	-0.339	4.909	0.937
24-Nov-98	139.4	18	0.3895	-0.281	4.937	0.933
26-Jul-95	145.29	19	0.4116	-0.223	4.979	0.929
24-Jun-94	155.53	20	0.4337	-0.167	5.047	0.926
4-Jan-99	159.8	21	0.4558	-0.111	5.074	0.924
4-Nov-97	183	22	0.4779	-0.055	5.209	0.926
12-Jul-95	196.51	23	0.5000	0.000	5.281	0.925
9-Mar-99	201.5	24	0.5221	0.055	5.306	0.927
8-Jun-94	262	25	0.5442	0.111	5.568	0.937
28-Jun-95	280.46	26	0.5663	0.167	5.636	0.934
23-Mar-94	283.62	27	0.5884	0.223	5.648	0.932
7-Mar-94	313.19	28	0.6105	0.281	5.747	0.935
8-Mar-95	386.4	29	0.6326	0.339	5.957	0.939
6-Apr-94	394.31	30	0.6547	0.398	5.977	0.932
20-May-94	435.57	31	0.6768	0.459	6.077	0.926
13-Jun-95	448.51	32	0.6989	0.521	6.106	0.916
11-Jan-95	466.16	33	0.7210	0.586	6.145	0.906
27-Apr-95	498.21	34	0.7431	0.653	6.211	0.894
9-Feb-95	526.86	35	0.7652	0.723	6.267	0.880
29-May-98	577.1	36	0.7873	0.797	6.358	0.863
14-Apr-95	603.44	37	0.8094	0.876	6.403	0.839
14-Jan-99	614.2	38	0.8315	0.960	6.420	0.812
24-May-95	772.69	39	0.8536	1.052	6.650	0.843
24-Apr-98	779.1	40	0.8757	1.154	6.658	0.801
18-Apr-94	957.4	41	0.8978	1.269	6.864	0.931
3-May-94	1009.84	42	0.9199	1.404	6.918	
11-May-95	1088.15	43	0.9420	1.572	6.992	
23-Mar-95	1170.56	44	0.9641	1.800	7.065	
11-May-98	1230	45	0.9862	2.203	7.115	

Secondary Scale For LN graphs

z	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF270	Date:	23-Jun-00
Chemical:	dPb	Analyst:	B.Walthall
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load				
Avg:	34,925	349	8	23		0.00	0.00	0.00	
SD:	626	330	4	29		1.00	1.00	1.00	
CV:	0.02	0.94	0.52	1.24					first:
Min:	34,271	55	2	0.7		-0.89	-1.48	-0.78	mid:
Max:	36,228	1,230	23	155		2.67	3.46	4.61	last:
Median:	34,739	197	8	14		-0.46	-0.09	-0.32	

dPb SF270			: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b	
Conc. = mQ+b (r2=0.395)		update r2	0.40	0.395		r2:	0.017	0.022	
r2 Q,[COC]:	0.40	[dPb]	Q			m:	0.0681	0.00023	
slope, m:	0.0	6	55.0			b:	-2030	-2.57	
intercept, b:	5.1	8	349.4						
N: 38		15	1230						first:
LnConc. = mLn(Q)+b (r2=0.539)			update r2	0.54	0.539				mid:
r2 lnQ,ln[COC]:	0.54	ln[dPb]	ln Q	[dPb]	Q				last:
slope, m:	0.46	1.24	4.01	3	55				
intercept, b:	-0.61	2.09	5.86	8	349				
N: 38		2.67	7.11	14	1,230				

N= 45

								dPb	for graph 0	
	Sampling Date	Q Discharge	dPb Concentration	dPb Load	Ln Q	Ln dPb Conc.	Ln dPb Load	SF270 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
IDEQ	29-Oct-93	69.4	2	0.7	4.24	0.69	-0.29	-0.85	-1.48	-0.78
IDEQ	1-Dec-93	69.4			4.24			-0.85		
IDEQ	21-Dec-93	69.4			4.24			-0.85		
IDEQ	21-Dec-93	75.05			4.32			-0.83		
IDEQ	21-Jan-94	117.39	3	1.9	4.77	1.10	0.64	-0.70	-1.25	-0.74
IDEQ	21-Jan-94	124.87	3	2.0	4.83	1.10	0.70	-0.68	-1.25	-0.73
IDEQ	17-Feb-94	74.32			4.31			-0.83		
IDEQ	7-Mar-94	313.19	4	6.7	5.75	1.39	1.91	-0.11	-1.02	-0.57
IDEQ	23-Mar-94	283.62	9	13.7	5.65	2.20	2.62	-0.20	0.14	-0.32
IDEQ	6-Apr-94	394.31	8	17.0	5.98	2.08	2.83	0.14	-0.09	-0.21
IDEQ	18-Apr-94	957.4	7	36.1	6.86	1.95	3.59	1.84	-0.32	0.46
IDEQ	3-May-94	1009.84	9	48.9	6.92	2.20	3.89	2.00	0.14	0.91
IDEQ	20-May-94	435.57	9	21.1	6.08	2.20	3.05	0.26	0.14	-0.07
IDEQ	8-Jun-94	262	9	12.7	5.57	2.20	2.54	-0.27	0.14	-0.36
IDEQ	24-Jun-94	155.53	4	3.3	5.05	1.39	1.21	-0.59	-1.02	-0.69
IDEQ	23-Jul-94	86.25			4.46			-0.80		
IDEQ	16-Aug-94	69.4	2.5	0.9	4.24	0.92	-0.07	-0.85	-1.36	-0.77
IDEQ	9-Sep-94	62.45			4.13			-0.87		
IDEQ	5-Oct-94	54.98			4.01			-0.89		
IDEQ	16-Nov-94	96.4	4	2.1	4.57	1.39	0.73	-0.77	-1.02	-0.73
IDEQ	14-Dec-94	113.97	3	1.8	4.74	1.10	0.61	-0.71	-1.25	-0.74
IDEQ	11-Jan-95	466.16	9	22.6	6.14	2.20	3.12	0.35	0.14	-0.02
IDEQ	9-Feb-95	526.86	16	45.4	6.27	2.77	3.81	0.54	1.75	0.78
IDEQ	8-Mar-95	386.4	8	16.6	5.96	2.08	2.81	0.11	-0.09	-0.22
IDEQ	23-Mar-95	1170.56	10	63.0	7.07	2.30	4.14	2.49	0.37	1.40
IDEQ	14-Apr-95	603.44	11	35.7	6.40	2.40	3.58	0.77	0.60	0.44
IDEQ	27-Apr-95	498.21	10	26.8	6.21	2.30	3.29	0.45	0.37	0.13
IDEQ	11-May-95	1088.15	11	64.4	6.99	2.40	4.17	2.24	0.60	1.45
IDEQ	24-May-95	772.69	10	41.6	6.65	2.30	3.73	1.28	0.37	0.65
IDEQ	13-Jun-95	448.51	13	31.4	6.11	2.56	3.45	0.30	1.06	0.29
IDEQ	28-Jun-95	280.46	13	19.6	5.64	2.56	2.98	-0.21	1.06	-0.12
IDEQ	12-Jul-95	196.51	13	13.7	5.28	2.56	2.62	-0.46	1.06	-0.32
IDEQ	26-Jul-95	145.29	8	6.3	4.98	2.08	1.83	-0.62	-0.09	-0.59
IDEQ	15-Aug-95	135.53	6	4.4	4.91	1.79	1.48	-0.65	-0.55	-0.65
IDEQ	14-Sep-95	86.25	5	2.3	4.46	1.61	0.84	-0.80	-0.79	-0.72
URS	4-Nov-97	183	12.4	12.2	5.21	2.52	2.50	-0.50	0.92	-0.38
IDEQ	24-Apr-98	779.1	15	62.9	6.66	2.71	4.14	1.30	1.52	1.39
URS	11-May-98	1230	23.4	154.8	7.11	3.15	5.04	2.67	3.46	4.61
IDEQ	29-May-98	577.1	11	34.2	6.36	2.40	3.53	0.69	0.60	0.39
IDEQ	29-Sep-98	68.2	4	1.5	4.22	1.39	0.38	-0.85	-1.02	-0.75
IDEQ	8-Oct-98	70.6	6	2.3	4.26	1.79	0.82	-0.85	-0.55	-0.73
IDEQ	24-Nov-98	139.4	8	6.0	4.94	2.08	1.79	-0.64	-0.09	-0.60
IDEQ	4-Jan-99	159.8	6	5.2	5.07	1.79	1.64	-0.58	-0.55	-0.62
IDEQ	14-Jan-99	614.2	8	26.4	6.42	2.08	3.27	0.80	-0.09	0.12
IDEQ	9-Mar-99	201.5	6	6.5	5.31	1.79	1.87	-0.45	-0.55	-0.58

dPb

Concentration over time analysis

dPb	SF270		r2	Slope, m
			Concentration over time	
LnConc.=mTime+b All data r2, m:			**0.038**	**0.00025**
Time	Ln[COC]	[COC]		
29-Oct-93	1.80	6		
9-Feb-95	1.92	7		
9-Mar-99	2.29	10		
LnConc.=mTime+b >'96 r2, m:			**#REF!**	**#REF!**
#REF!	#REF!	#REF!		
9-Mar-99	#REF!	#REF!		

Lead over time analysis

dPb	SF270		Lead over time	
LnLead=mTime+b All data r2, m:			**0.009**	**0.00020**
Time	LnLead	Lead		
29-Oct-93	2.24	9		
9-Feb-95	2.33	10		
9-Mar-99	2.64	14		
LnLead=mTime+b >'96 r2, m:			**#REF!**	**#REF!**
#REF!	#REF!	#REF!		
9-Mar-99	#REF!	#REF!		

max r2:	0.521		max r2:	0.493	
Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Lead(t)**		
r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 row		
0.080	0.00025	-6.63	0.009	0.00020	-4.79
0.053	0.00019	-4.62	0.001	0.00008	-0.20
0.053	0.00019	-4.62	0.001	0.00008	-0.20
0.053	0.00019	-4.62	0.001	0.00008	-0.20
0.053	0.00019	-4.62	0.001	0.00008	-0.20
0.036	0.00015	-3.25	0.000	-0.00001	2.84
0.020	0.00011	-1.71	0.003	-0.00010	6.17
0.020	0.00011	-1.71	0.003	-0.00010	6.17
0.010	0.00008	-0.58	0.005	-0.00014	7.50
0.012	0.00008	-0.88	0.005	-0.00014	7.61
0.012	0.00009	-0.97	0.004	-0.00013	7.31
0.010	0.00008	-0.78	0.001	-0.00008	5.36
0.013	0.00009	-1.14	0.000	0.00000	2.48
0.015	0.00010	-1.54	0.000	0.00004	1.17
0.018	0.00012	-1.99	0.000	0.00004	0.95
0.007	0.00007	-0.34	0.000	-0.00005	4.26
0.007	0.00007	-0.34	0.000	-0.00005	4.26
0.001	-0.00002	2.79	0.014	-0.00025	11.42
0.001	-0.00002	2.79	0.014	-0.00025	11.42
0.001	-0.00002	2.79	0.014	-0.00025	11.42
0.010	-0.00007	4.82	0.037	-0.00040	16.74
0.058	-0.00016	7.91	0.084	-0.00057	23.08
0.063	-0.00017	8.30	0.081	-0.00058	23.16
0.041	-0.00014	7.01	0.064	-0.00052	21.11
0.050	-0.00015	7.70	0.066	-0.00054	21.86
0.048	-0.00016	7.75	0.043	-0.00044	18.14
0.041	-0.00015	7.44	0.030	-0.00037	15.72
0.038	-0.00015	7.44	0.021	-0.00032	13.86
0.029	-0.00013	6.98	0.004	-0.00014	7.28
0.026	-0.00013	6.88	0.000	0.00004	0.87
0.009	-0.00008	5.02	0.011	0.00024	-6.22
0.000	0.00000	2.22	0.030	0.00043	-13.03
0.017	0.00013	-2.41	0.053	0.00063	-20.46
0.022	0.00017	-3.94	0.047	0.00070	-22.71
0.001	0.00005	0.20	0.019	0.00057	-18.24
0.449	-0.00232	85.69	0.198	-0.00434	158.73
0.521	-0.00334	122.52	0.374	-0.00819	297.97
0.432	-0.00324	118.83	0.271	-0.00745	271.09
0.121	-0.00119	45.03	0.024	-0.00193	71.54
0.193	0.00181	-63.59	0.493	0.01133	-407.92
0.005	-0.00020	9.10	0.298	0.00846	-303.86

update for EV, CV:

dPb		**SF270**	
LN Analysis		**dPb**	
Load		**Load Data, EV=23 lbs/day CV=1.24**	
Avg:	**23**	**Load Data-based LN**	
SD:	**29**	u	ln dPb Load	dPb Load
CV:	**1.24**	3	5.6	262
Min:	**0.7**	0	2.67	14
Max:	**155**	-3	-0.23	0.8
Median:	**14**			
		23	23	
		1.24	1.24	

u=mLn(Load)+ b:

update for r2, EV, CV: **r2=0.94, EV=33.3lbs/day CV=4.9; max r2=0.97**

r2 u,lnLoad:	0.940	u	lnLoad	Load		
slope, m:	0.557	3	7.28	1450		
intercept, b:	-1.056	0	1.90	7		
N:	38	-3	-3.49	0.0		
E[Load]:	33.3	Parameter Estimates			0.940	0.94
SD[Load]:	163	from LN regression			33.3	33.3
CV[Load]:	4.90	update graph label			4.9	4.9
					max r2	
	dPb	N: 45			0.972	

Date	**Load lbs/day Ranked**	**i rank**	**i-3/8 / N+1/4 plotting points**	**u y-axis**	**Ln x-axis**	**r2 forward**
update and rank for new data						
5-Oct-94		1	0.0138	-2.203		
9-Sep-94		2	0.0359	-1.800		
17-Feb-94		3	0.0580	-1.572		
1-Dec-93		4	0.0801	-1.404		
21-Dec-93		5	0.1022	-1.269		
21-Dec-93		6	0.1243	-1.154		
23-Jul-94		7	0.1464	-1.052		
29-Oct-93	**0.7**	8	0.1685	-0.960	-0.292	0.940
16-Aug-94	**0.9**	9	0.1906	-0.876	-0.069	0.939
29-Sep-98	**1.5**	10	0.2127	-0.797	0.384	0.938
14-Dec-94	**1.8**	11	0.2348	-0.723	0.609	0.934
21-Jan-94	**1.9**	12	0.2569	-0.653	0.639	0.930
21-Jan-94	**2.0**	13	0.2790	-0.586	0.701	0.926
16-Nov-94	**2.1**	14	0.3011	-0.521	0.730	0.923
8-Oct-98	**2.3**	15	0.3232	-0.459	0.824	0.922
14-Sep-95	**2.3**	16	0.3453	-0.398	0.842	0.924
24-Jun-94	**3.3**	17	0.3674	-0.339	1.208	0.934
15-Aug-95	**4.4**	18	0.3895	-0.281	1.476	0.938
4-Jan-99	**5.2**	19	0.4116	-0.223	1.641	0.938
24-Nov-98	**6.0**	20	0.4337	-0.167	1.792	0.938
26-Jul-95	**6.3**	21	0.4558	-0.111	1.833	0.937
9-Mar-99	**6.5**	22	0.4779	-0.055	1.872	0.939
7-Mar-94	**6.7**	23	0.5000	0.000	1.908	0.948
4-Nov-97	**12.2**	24	0.5221	0.055	2.502	0.972
8-Jun-94	**12.7**	25	0.5442	0.111	2.541	0.969
23-Mar-94	**13.7**	26	0.5663	0.167	2.620	0.967
12-Jul-95	**13.7**	27	0.5884	0.223	2.621	0.965
8-Mar-95	**16.6**	28	0.6105	0.281	2.811	0.966
6-Apr-94	**17.0**	29	0.6326	0.339	2.832	0.963
28-Jun-95	**19.6**	30	0.6547	0.398	2.976	0.962
20-May-94	**21.1**	31	0.6768	0.459	3.049	0.958
11-Jan-95	**22.6**	32	0.6989	0.521	3.117	0.953
14-Jan-99	**26.4**	33	0.7210	0.586	3.275	0.947
27-Apr-95	**26.8**	34	0.7431	0.653	3.289	0.940
13-Jun-95	**31.4**	35	0.7652	0.723	3.446	0.931
29-May-98	**34.2**	36	0.7873	0.797	3.531	0.923
14-Apr-95	**35.7**	37	0.8094	0.876	3.575	0.917
18-Apr-94	**36.1**	38	0.8315	0.960	3.585	0.907
24-May-95	**41.6**	39	0.8536	1.052	3.727	0.886
9-Feb-95	**45.4**	40	0.8757	1.154	3.814	0.867
3-May-94	**48.9**	41	0.8978	1.269	3.890	0.843
24-Apr-98	**62.9**	42	0.9199	1.404	4.141	
23-Mar-95	**63.0**	43	0.9420	1.572	4.143	
11-May-95	**64.4**	44	0.9641	1.800	4.165	
11-May-98	**154.8**	45	0.9862	2.203	5.042	

		update for EV, CV:			
dPb		SF270		8	8.4
LN Analysis		dPb		0.52	0.516

Concentration — Conc. Data, EV=8.4 ug/L CV=0.516

		Data-based LN		
Avg:	8	u	ln[dPb]	[dPb]
SD:	4	3	3.5	32
CV:	0.52	3	3.5	32
Min:	2	0	2.01	7
Max:	23	-3	0.55	2
Median:	8			

					0.910	0.91
u=mLn(Conc.)+b:					7.9	7.87
update for r2, EV, CV:	r2=0.91, EV=7.87 ug/L CV=0.874; max r2=0.97				0.874	0.874
	r2 u,lnConc:	0.910	u	lnConc.	Conc.	
	slope, m:	1.327	3	4.04	57	
	intercept, b:	-2.362	0	1.78	6	
	N:	38	-3	-0.48	1	
	E[Conc]:	7.9	Parameter Estimates			
	SD[Conc]:	7	from LN regression			
	CV[Conc]:	0.87	update graph label			

Date	dPb Concentration ug/L Ranked	i rank	N: 45 i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.969 r2 forward
update and rank for new data						
17-Feb-94		1	0.0138	-2.203		
1-Dec-93		2	0.0359	-1.800		
21-Dec-93		3	0.0580	-1.572		
21-Dec-93		4	0.0801	-1.404		
23-Jul-94		5	0.1022	-1.269		
9-Sep-94		6	0.1243	-1.154		
5-Oct-94		7	0.1464	-1.052		
29-Oct-93	2	8	0.1685	-0.960	0.693	0.910
16-Aug-94	2.5	9	0.1906	-0.876	0.916	0.917
21-Jan-94	3	10	0.2127	-0.797	1.099	0.918
21-Jan-94	3	11	0.2348	-0.723	1.099	0.916
14-Dec-94	3	12	0.2569	-0.653	1.099	0.917
7-Mar-94	4	13	0.2790	-0.586	1.386	0.928
24-Jun-94	4	14	0.3011	-0.521	1.386	0.926
16-Nov-94	4	15	0.3232	-0.459	1.386	0.926
29-Sep-98	4	16	0.3453	-0.398	1.386	0.935
14-Sep-95	5	17	0.3674	-0.339	1.609	0.958
15-Aug-95	6	18	0.3895	-0.281	1.792	0.964
8-Oct-98	6	19	0.4116	-0.223	1.792	0.961
4-Jan-99	6	20	0.4337	-0.167	1.792	0.960
9-Mar-99	6	21	0.4558	-0.111	1.792	0.961
18-Apr-94	7	22	0.4779	-0.055	1.946	0.969
6-Apr-94	8	23	0.5000	0.000	2.079	0.967
8-Mar-95	8	24	0.5221	0.055	2.079	0.968
26-Jul-95	8	25	0.5442	0.111	2.079	0.968
24-Nov-98	8	26	0.5663	0.167	2.079	0.966
14-Jan-99	8	27	0.5884	0.223	2.079	0.963
23-Mar-94	9	28	0.6105	0.281	2.197	0.959
3-May-94	9	29	0.6326	0.339	2.197	0.962
20-May-94	9	30	0.6547	0.398	2.197	0.962
8-Jun-94	9	31	0.6768	0.459	2.197	0.960
11-Jan-95	9	32	0.6989	0.521	2.197	0.955
23-Mar-95	10	33	0.7210	0.586	2.303	0.949
27-Apr-95	10	34	0.7431	0.653	2.303	0.948
24-May-95	10	35	0.7652	0.723	2.303	0.943
14-Apr-95	11	36	0.7873	0.797	2.398	0.934
11-May-95	11	37	0.8094	0.876	2.398	0.934
29-May-98	11	38	0.8315	0.960	2.398	0.926
4-Nov-97	12.4	39	0.8536	1.052	2.518	0.908
13-Jun-95	13	40	0.8757	1.154	2.565	0.915
28-Jun-95	13	41	0.8978	1.269	2.565	0.948
12-Jul-95	13	42	0.9199	1.404	2.565	
24-Apr-98	15	43	0.9420	1.572	2.708	
9-Feb-95	16	44	0.9641	1.800	2.773	
11-May-98	23.4	45	0.9862	2.203	3.153	

update for EV, CV:

dPb		**SF270**			349	349
LN Analysis		**dPb**			0.94	0.943

Discharge, Q

Q Data, EV=349 cfs CV=0.943

Avg:	**349**
SD:	**330**
CV:	**0.94**
Min:	**55**
Max:	**1,230**
Median:	**197**

Q Data-based LN

u	lnQ	Q
3	7.9	2783
0	5.54	254
-3	3.14	23

	0.941	0.941
	376.0	376
u=mLn(Q)+b:	1.35	1.35

update for r2, EV, CV: **r2=0.941, EV=376 cfs CV=1.35; max r2=0.97**

r2 u,lnQ:	0.941	u	lnQ	Q
slope, m:	0.983	3	8.46	4742
intercept, b:	-5.320	0	5.41	224
N:	45	-3	2.36	11
E[Q]:	376.0	Parameter Estimates		
SD[Q]:	507	from LN regression		
CV[Q]:	1.35	update graph label		

N: 45

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.968 r2 forward
update and rank for new data						
5-Oct-94	54.98	1	0.0138	-2.203	4.007	0.941
9-Sep-94	62.45	2	0.0359	-1.800	4.134	0.953
29-Sep-98	68.2	3	0.0580	-1.572	4.222	0.960
29-Oct-93	69.4	4	0.0801	-1.404	4.240	0.965
1-Dec-93	69.4	5	0.1022	-1.269	4.240	0.967
21-Dec-93	69.4	6	0.1243	-1.154	4.240	0.968
16-Aug-94	69.4	7	0.1464	-1.052	4.240	0.967
8-Oct-98	70.6	8	0.1685	-0.960	4.257	0.964
17-Feb-94	74.32	9	0.1906	-0.876	4.308	0.962
21-Dec-93	75.05	10	0.2127	-0.797	4.318	0.959
23-Jul-94	86.25	11	0.2348	-0.723	4.457	0.956
14-Sep-95	86.25	12	0.2569	-0.653	4.457	0.953
16-Nov-94	96.4	13	0.2790	-0.586	4.569	0.951
14-Dec-94	113.97	14	0.3011	-0.521	4.736	0.948
21-Jan-94	117.39	15	0.3232	-0.459	4.766	0.945
21-Jan-94	124.87	16	0.3453	-0.398	4.827	0.941
15-Aug-95	135.53	17	0.3674	-0.339	4.909	0.937
24-Nov-98	139.4	18	0.3895	-0.281	4.937	0.933
26-Jul-95	145.29	19	0.4116	-0.223	4.979	0.929
24-Jun-94	155.53	20	0.4337	-0.167	5.047	0.926
4-Jan-99	159.8	21	0.4558	-0.111	5.074	0.924
4-Nov-97	183	22	0.4779	-0.055	5.209	0.926
12-Jul-95	196.51	23	0.5000	0.000	5.281	0.925
9-Mar-99	201.5	24	0.5221	0.055	5.306	0.927
8-Jun-94	262	25	0.5442	0.111	5.568	0.937
28-Jun-95	280.46	26	0.5663	0.167	5.636	0.934
23-Mar-94	283.62	27	0.5884	0.223	5.648	0.932
7-Mar-94	313.19	28	0.6105	0.281	5.747	0.935
8-Mar-95	386.4	29	0.6326	0.339	5.957	0.939
6-Apr-94	394.31	30	0.6547	0.398	5.977	0.932
20-May-94	435.57	31	0.6768	0.459	6.077	0.926
13-Jun-95	448.51	32	0.6989	0.521	6.106	0.916
11-Jan-95	466.16	33	0.7210	0.586	6.145	0.906
27-Apr-95	498.21	34	0.7431	0.653	6.211	0.894
9-Feb-95	526.86	35	0.7652	0.723	6.267	0.880
29-May-98	577.1	36	0.7873	0.797	6.358	0.863
14-Apr-95	603.44	37	0.8094	0.876	6.403	0.839
14-Jan-99	614.2	38	0.8315	0.960	6.420	0.812
24-May-95	772.69	39	0.8536	1.052	6.650	0.843
24-Apr-98	779.1	40	0.8757	1.154	6.658	0.801
18-Apr-94	957.4	41	0.8978	1.269	6.864	0.931
3-May-94	1009.84	42	0.9199	1.404	6.918	
11-May-95	1088.15	43	0.9420	1.572	6.992	
23-Mar-95	1170.56	44	0.9641	1.800	7.065	
11-May-98	1230	45	0.9862	2.203	7.115	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SF270 **Date:** 27-Jun-00
Chemical: dZn **Analyst:** B.Walthall
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,925	349	1,625	2,081	0.00	0.00	0.00
SD:	626	330	665	1,278	1.00	1.00	1.00
CV:	0.02	0.94	0.41	0.61			
Min:	34,271	55	524	718.8	-0.89	-1.65	-1.07
Max:	36,228	1,230	2,640	7,179	2.67	1.53	3.99
Median:	34,739	197	1,600	1,735	-0.46	-0.04	-0.27

dZn SF270		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.681)	update r2	0.68	0.681	r2:	0.017	0.022
r2 Q,[COC]:	0.68	[dZn]	Q	m:	0.0681	0.00023
slope, m:	-1.7	2,116	55.0	b:	-2030	-2.57
intercept, b:	2207.3	1,625	349.4			
N: 45		158	1230			
LnConc. = mLn(Q)+b (r2=0.816)	update r2	0.82	0.816			
r2 lnQ,ln[COC]:	0.82	ln[dZn]	ln Q	[dZn]	Q	
slope, m:	-0.45	7.93	4.01	2,770	55	
intercept, b:	9.74	7.09	5.86	1,200	349	
N: 45		6.52	7.11	679	1,230	

N= 45

	Sampling Data	Q Discharge	dZn Concentration	dZn Load	Ln Q	Ln dZn Conc.	Ln dZn Load	for graph 0 dZn SF270 Standardized Values = (x - Avg)/SD Q	Conc	Load
updats for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
IDEQ	29-Oct-93	69.4	2370	884.9	4.24	7.77	6.79	-0.85	1.12	-0.94
IDEQ	1-Dec-93	69.4	2300	858.8	4.24	7.74	6.76	-0.85	1.01	-0.96
IDEQ	21-Dec-93	69.4	2640	985.7	4.24	7.88	6.89	-0.85	1.53	-0.86
IDEQ	21-Dec-93	75.05	2640	1066.0	4.32	7.88	6.97	-0.83	1.53	-0.79
IDEQ	21-Jan-94	117.39	2170	1370.5	4.77	7.68	7.22	-0.70	0.82	-0.56
IDEQ	21-Jan-94	124.87	2170	1457.8	4.83	7.68	7.28	-0.68	0.82	-0.49
IDEQ	17-Feb-94	74.32	2500	999.6	4.31	7.82	6.91	-0.83	1.31	-0.85
IDEQ	7-Mar-94	313.19	1420	2392.6	5.75	7.26	7.78	-0.11	-0.31	0.24
IDEQ	23-Mar-94	283.62	1510	2304.1	5.65	7.32	7.74	-0.20	-0.17	0.17
IDEQ	6-Apr-94	394.31	1010	2142.6	5.98	6.92	7.67	0.14	-0.92	0.05
IDEQ	18-Apr-94	957.4	610	3142.0	6.86	6.41	8.05	1.84	-1.53	0.83
IDEQ	3-May-94	1009.84	740	4020.4	6.92	6.61	8.30	2.00	-1.33	1.52
IDEQ	20-May-94	435.57	746	1748.2	6.08	6.61	7.47	0.26	-1.32	-0.26
IDEQ	8-Jun-94	262	1090	1536.4	5.57	6.99	7.34	-0.27	-0.80	-0.43
IDEQ	24-Jun-94	155.53	1430	1196.6	5.05	7.27	7.09	-0.59	-0.29	-0.69
IDEQ	23-Jul-94	86.25	1680	779.6	4.46	7.43	6.66	-0.80	0.08	-1.02
IDEQ	16-Aug-94	69.4	2090	780.3	4.24	7.64	6.66	-0.85	0.70	-1.02
IDEQ	9-Sep-94	62.45	2380	799.6	4.13	7.77	6.68	-0.87	1.13	-1.00
IDEQ	5-Oct-94	54.98	2430	718.8	4.01	7.80	6.58	-0.89	1.21	-1.07
IDEQ	16-Nov-94	96.4	2540	1317.3	4.57	7.84	7.18	-0.77	1.38	-0.60
IDEQ	14-Dec-94	113.97	2620	1606.5	4.74	7.87	7.38	-0.71	1.50	-0.37
IDEQ	11-Jan-95	466.16	1410	3536.2	6.14	7.25	8.17	0.35	-0.32	1.14
IDEQ	9-Feb-95	526.86	1190	3373.1	6.27	7.08	8.12	0.54	-0.65	1.01
IDEQ	8-Mar-95	386.4	1290	2681.7	5.96	7.16	7.89	0.11	-0.50	0.47
IDEQ	23-Mar-95	1170.56	1140	7179.3	7.07	7.04	8.88	2.49	-0.73	3.99
IDEQ	14-Apr-95	603.44	1260	4090.6	6.40	7.14	8.32	0.77	-0.55	1.57
IDEQ	27-Apr-95	498.21	1210	3243.2	6.21	7.10	8.08	0.45	-0.62	0.91
IDEQ	11-May-95	1088.15	623	3647.2	6.99	6.43	8.20	2.24	-1.51	1.23
IDEQ	24-May-95	772.69	741	3080.4	6.65	6.61	8.03	1.28	-1.33	0.78
IDEQ	13-Jun-95	448.51	923	2227.2	6.11	6.83	7.71	0.30	-1.06	0.11
IDEQ	28-Jun-95	280.46	1230	1855.9	5.64	7.11	7.53	-0.21	-0.59	-0.18
IDEQ	12-Jul-95	196.51	1610	1702.1	5.28	7.38	7.44	-0.46	-0.02	-0.30
IDEQ	26-Jul-95	145.29	1910	1493.0	4.98	7.55	7.31	-0.62	0.43	-0.46
IDEQ	15-Aug-95	135.53	2010	1465.6	4.91	7.61	7.29	-0.65	0.58	-0.48
IDEQ	14-Sep-95	86.25	2260	1048.7	4.46	7.72	6.96	-0.80	0.95	-0.81
URS	4-Nov-97	183	2010	1978.9	5.21	7.61	7.59	-0.50	0.58	-0.08
IDEQ	24-Apr-98	779.1	524	2196.4	6.66	6.26	7.69	1.30	-1.65	0.09
URS	11-May-98	1230	525	3474.1	7.11	6.26	8.15	2.67	-1.65	1.09
IDEQ	29-May-98	577.1	686	2129.9	6.36	6.53	7.66	0.69	-1.41	0.04
IDEQ	29-Sep-98	68.2	2210	810.9	4.22	7.70	6.70	-0.85	0.88	-0.99
IDEQ	8-Oct-98	70.6	2180	828.0	4.26	7.69	6.72	-0.85	0.83	-0.98
IDEQ	24-Nov-98	139.4	2490	1867.4	4.94	7.82	7.53	-0.64	1.30	-0.17
IDEQ	4-Jan-99	159.8	1660	1427.1	5.07	7.41	7.26	-0.58	0.05	-0.51
IDEQ	14-Jan-99	614.2	1350	4460.9	6.42	7.21	8.40	0.80	-0.41	1.86
IDEQ	9-Mar-99	201.5	1600	1734.5	5.31	7.38	7.46	-0.45	-0.04	-0.27

dZn

Concentration over time analysis

	dZn	SF270		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.021**	**-0.00011**
	Time	**Ln[COC]**	**[COC]**		
first:	29-Oct-93	7.36	1,578		
mid:	9-Feb-95	7.31	1,498		
last:	9-Mar-99	7.15	1,268		
	LnConc.=mTime+b >'96 r2, m:			**#REF!**	**#REF!**
	#REF!	#REF!	#REF!		
	9-Mar-99	#REF!	#REF!		

Load over time analysis

	dZn	SF270		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.017**	**0.00012**
	Time	**LnLoad**	**Load**		
first:	29-Oct-93	7.40	1,639		
mid:	9-Feb-95	7.46	1,731		
last:	9-Mar-99	7.63	2,059		
	LnLoad=mTime+b >'96 r2, m:			**#REF!**	**#REF!**
	#REF!	#REF!	#REF!		
	9-Mar-99	#REF!	#REF!		

	max r2:	0.596			max r2:	0.431	
	Forward time Regression on Ln Concentration(t)				**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**		**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows				only on >4 data points: delete last 4 rows		
	0.021	-0.00011	11.20		0.017	0.00012	3.40
	0.016	-0.00010	10.63		0.011	0.00009	4.25
	0.011	-0.00008	10.08		0.006	0.00007	5.19
	0.006	-0.00006	9.30		0.002	0.00004	6.00
	0.002	-0.00003	8.43		0.001	0.00002	6.78
	0.000	-0.00002	7.81		0.000	0.00001	7.22
	0.000	0.00000	7.11		0.000	0.00000	7.62
	0.002	0.00003	6.15		0.001	-0.00003	8.65
	0.002	0.00003	6.02		0.001	-0.00002	8.34
	0.003	0.00004	5.78		0.000	-0.00001	8.07
	0.001	0.00003	6.23		0.000	-0.00001	7.89
	0.000	-0.00001	7.64		0.000	0.00002	7.00
	0.004	-0.00005	8.83		0.004	0.00006	5.54
	0.012	-0.00008	10.14		0.003	0.00006	5.57
	0.018	-0.00010	10.81		0.002	0.00005	5.88
	0.019	-0.00011	10.98		0.001	0.00002	6.76
	0.016	-0.00010	10.79		0.001	-0.00003	8.70
	0.010	-0.00008	10.07		0.010	-0.00009	10.88
	0.004	-0.00005	8.93		0.031	-0.00016	13.26
	0.000	-0.00001	7.59		0.079	-0.00024	16.22
	0.002	0.00003	5.99		0.112	-0.00029	17.91
	0.013	0.00009	4.09		0.139	-0.00033	19.26
	0.016	0.00010	3.68		0.121	-0.00031	18.54
	0.015	0.00010	3.73		0.103	-0.00029	17.82
	0.016	0.00010	3.53		0.096	-0.00028	17.69
	0.013	0.00010	3.73		0.051	-0.00018	14.12
	0.013	0.00010	3.60		0.024	-0.00012	11.88
	0.012	0.00010	3.62		0.008	-0.00007	10.04
	0.000	0.00001	6.80		0.000	0.00001	7.10
	0.008	-0.00008	10.12		0.015	0.00009	4.10
	0.033	-0.00017	13.29		0.034	0.00015	2.05
	0.055	-0.00024	15.70		0.049	0.00020	0.45
	0.057	-0.00027	16.81		0.060	0.00024	-1.24
	0.038	-0.00025	16.29		0.057	0.00028	-2.47
	0.010	-0.00017	13.24		0.054	0.00035	-5.20
	0.143	0.00151	-47.29		0.020	-0.00051	25.76
	0.596	0.00412	-141.28		0.023	-0.00074	34.17
	0.474	0.00362	-123.45		0.011	-0.00059	28.81
	0.216	0.00219	-71.57		0.053	0.00145	-45.06
	0.558	-0.00284	110.29		0.431	0.00668	-234.04
	0.508	-0.00309	119.30		0.272	0.00556	-193.66

update for EV, CV:

dZn
LN Analysis
SF270
dZn

Load
Load Data, EV=2080 lbs/day CV=0.614

Avg:	**2,081**
SD:	**1,278**
CV:	**0.61**
Min:	**718.8**
Max:	**7,179**
Median:	**1,735**

Load Data-based LN

u	ln dZn Load	dZn Load
3	9.2	9681
0	7.48	1773
-3	5.78	324.7

2,081	2080
0.61	0.614

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.972, EV=2100lbs/day CV=0.644; max r2=0.99**

r2 u,lnLoad:	0.972
slope, m:	1.698
intercept, b:	-12.698
N:	45
E[Load]:	2103.5
SD[Load]:	1354
CV[Load]:	0.64

Parameter Estimates from LN regression
update graph label

u	lnLoad	Load
3	9.24	10349
0	7.48	1769
-3	5.71	302.3

0.972	0.972
2103.5	2100
0.6	0.644

max r2 0.989

N: 45

Date	dZn Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
5-Oct-94	718.8	1	0.0138	-2.203	6.578	0.972
23-Jul-94	779.6	2	0.0359	-1.800	6.659	0.982
16-Aug-94	780.3	3	0.0580	-1.572	6.660	0.987
9-Sep-94	799.6	4	0.0801	-1.404	6.684	0.988
29-Sep-98	810.9	5	0.1022	-1.269	6.698	0.989
8-Oct-98	828.0	6	0.1243	-1.154	6.719	0.988
1-Dec-93	858.8	7	0.1464	-1.052	6.755	0.987
29-Oct-93	884.9	8	0.1685	-0.960	6.785	0.986
21-Dec-93	985.7	9	0.1906	-0.876	6.893	0.986
17-Feb-94	999.6	10	0.2127	-0.797	6.907	0.984
14-Sep-95	1048.7	11	0.2348	-0.723	6.955	0.984
21-Dec-93	1066.0	12	0.2569	-0.653	6.972	0.983
24-Jun-94	1196.6	13	0.2790	-0.586	7.087	0.983
16-Nov-94	1317.3	14	0.3011	-0.521	7.183	0.982
21-Jan-94	1370.5	15	0.3232	-0.459	7.223	0.981
4-Jan-99	1427.1	16	0.3453	-0.398	7.263	0.980
21-Jan-94	1457.8	17	0.3674	-0.339	7.285	0.979
15-Aug-95	1465.6	18	0.3895	-0.281	7.290	0.978
26-Jul-95	1493.0	19	0.4116	-0.223	7.309	0.976
8-Jun-94	1536.4	20	0.4337	-0.167	7.337	0.974
14-Dec-94	1606.5	21	0.4558	-0.111	7.382	0.972
12-Jul-95	1702.1	22	0.4779	-0.055	7.440	0.970
9-Mar-99	1734.5	23	0.5000	0.000	7.458	0.967
20-May-94	1748.2	24	0.5221	0.055	7.466	0.964
28-Jun-95	1855.9	25	0.5442	0.111	7.526	0.962
24-Nov-98	1867.4	26	0.5663	0.167	7.532	0.958
4-Nov-97	1978.9	27	0.5884	0.223	7.590	0.954
29-May-98	2129.9	28	0.6105	0.281	7.664	0.950
6-Apr-94	2142.6	29	0.6326	0.339	7.670	0.945
24-Apr-98	2196.4	30	0.6547	0.398	7.695	0.939
13-Jun-95	2227.2	31	0.6768	0.459	7.708	0.932
23-Mar-94	2304.1	32	0.6989	0.521	7.742	0.925
7-Mar-94	2392.6	33	0.7210	0.586	7.780	0.919
8-Mar-95	2681.7	34	0.7431	0.653	7.894	0.916
24-May-95	3080.4	35	0.7652	0.723	8.033	0.903
18-Apr-94	3142.0	36	0.7873	0.797	8.053	0.900
27-Apr-95	3243.2	37	0.8094	0.876	8.084	0.895
9-Feb-95	3373.1	38	0.8315	0.960	8.124	0.892
11-May-98	3474.1	39	0.8536	1.052	8.153	0.896
11-Jan-95	3536.2	40	0.8757	1.154	8.171	0.903
11-May-95	3647.2	41	0.8978	1.269	8.202	0.904
3-May-94	4020.4	42	0.9199	1.404	8.299	
14-Apr-95	4090.6	43	0.9420	1.572	8.316	
14-Jan-99	4460.9	44	0.9641	1.800	8.403	
23-Mar-95	7179.3	45	0.9862	2.203	8.879	

		update for EV, CV:				
dZn		SF270		1,625	1630	
LN Analysis		dZn		0.41	0.409	
Concentration		Conc. Data, EV=1630 ug/L CV=0.409				
Avg:	1,625	Data-based LN				
SD:	665	u	ln[dZn]	[dZn]		
CV:	0.41	3	8.5	4899		
Min:	524	0	7.32	1504		
Max:	2,640	-3	6.13	462		
Median:	1,600					

					0.923	0.923
u=mLn(Conc.)+b:					1674.7	1670
update for r2, EV, CV:	r2=0.923, EV=1670 ug/L CV=0.551; max r2=0.92				0.551	0.551
	r2 u,lnConc:	0.923	u	lnConc.	Conc.	
	slope, m:	1.943	3	8.83	6869	
	intercept, b:	-14.168	0	7.29	1467	
	N:	45	-3	5.75	313	
	E[Conc]:	1674.7	Parameter Estimates			
	SD[Conc]:	922	from LN regression			
	CV[Conc]:	0.55	update graph label			

	dZn	N: 45				max r2 0.923
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
24-Apr-98	524	1	0.0138	-2.203	6.261	0.923
11-May-98	525	2	0.0359	-1.800	6.263	0.914
18-Apr-94	610	3	0.0580	-1.572	6.413	0.907
11-May-95	623	4	0.0801	-1.404	6.435	0.899
29-May-98	686	5	0.1022	-1.269	6.531	0.893
3-May-94	740	6	0.1243	-1.154	6.607	0.888
24-May-95	741	7	0.1464	-1.052	6.608	0.883
20-May-94	746	8	0.1685	-0.960	6.615	0.883
13-Jun-95	923	9	0.1906	-0.876	6.828	0.893
6-Apr-94	1010	10	0.2127	-0.797	6.918	0.890
8-Jun-94	1090	11	0.2348	-0.723	6.994	0.885
23-Mar-95	1140	12	0.2569	-0.653	7.039	0.878
9-Feb-95	1190	13	0.2790	-0.586	7.082	0.870
27-Apr-95	1210	14	0.3011	-0.521	7.098	0.861
28-Jun-95	1230	15	0.3232	-0.459	7.115	0.852
14-Apr-95	1260	16	0.3453	-0.398	7.139	0.843
8-Mar-95	1290	17	0.3674	-0.339	7.162	0.835
14-Jan-99	1350	18	0.3895	-0.281	7.208	0.827
11-Jan-95	1410	19	0.4116	-0.223	7.251	0.818
7-Mar-94	1420	20	0.4337	-0.167	7.258	0.807
24-Jun-94	1430	21	0.4558	-0.111	7.265	0.799
23-Mar-94	1510	22	0.4779	-0.055	7.320	0.798
9-Mar-99	1600	23	0.5000	0.000	7.378	0.796
12-Jul-95	1610	24	0.5221	0.055	7.384	0.788
4-Jan-99	1660	25	0.5442	0.111	7.415	0.792
23-Jul-94	1680	26	0.5663	0.167	7.427	0.809
26-Jul-95	1910	27	0.5884	0.223	7.555	0.884
4-Nov-97	2010	28	0.6105	0.281	7.606	0.895
15-Aug-95	2010	29	0.6326	0.339	7.606	0.890
16-Aug-94	2090	30	0.6547	0.398	7.645	0.899
21-Jan-94	2170	31	0.6768	0.459	7.682	0.896
21-Jan-94	2170	32	0.6989	0.521	7.682	0.883
8-Oct-98	2180	33	0.7210	0.586	7.687	0.871
29-Sep-98	2210	34	0.7431	0.653	7.701	0.864
14-Sep-95	2260	35	0.7652	0.723	7.723	0.863
1-Dec-93	2300	36	0.7873	0.797	7.741	0.859
29-Oct-93	2370	37	0.8094	0.876	7.771	0.859
9-Sep-94	2380	38	0.8315	0.960	7.775	0.831
5-Oct-94	2430	39	0.8536	1.052	7.796	0.818
24-Nov-98	2490	40	0.8757	1.154	7.820	0.787
17-Feb-94	2500	41	0.8978	1.269	7.824	0.706
16-Nov-94	2540	42	0.9199	1.404	7.840	
14-Dec-94	2620	43	0.9420	1.572	7.871	
21-Dec-93	2640	44	0.9641	1.800	7.879	
21-Dec-93	2640	45	0.9862	2.203	7.879	

update for EV, CV:

dZn		SF270			349	349
LN Analysis		dZn			0.94	0.943
Discharge, Q		Q Data, EV=349 cfs CV=0.943				
Avg:	349	Q Data-based LN				
SD:	330	u	lnQ	Q		
CV:	0.94	3	7.9	2783		
Min:	55	0	5.54	254		
Max:	1,230	-3	3.14	23		
Median:	197					
					0.941	0.941
					376.0	376
u=mLn(Q)+b:					1.35	1.35

update for r2, EV, CV: **r2=0.941, EV=376 cfs CV=1.35; max r2=0.97**

r2 u,lnQ:	0.941	u	lnQ	Q
slope, m:	0.983	3	8.46	4742
intercept, b:	-5.320	0	5.41	224
N:	45	-3	2.36	11
E[Q]:	376.0	Parameter Estimates		
SD[Q]:	507	from LN regression		
CV[Q]:	1.35	update graph label		

	Q	N: 45				max r2 0.968
	Discharge	i	i-3/8 / N+1/4	u	Ln	r2
Date	cfs	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
5-Oct-94	54.98	1	0.0138	-2.203	4.007	0.941
9-Sep-94	62.45	2	0.0359	-1.800	4.134	0.953
29-Sep-98	68.2	3	0.0580	-1.572	4.222	0.960
1-Dec-93	69.4	4	0.0801	-1.404	4.240	0.965
16-Aug-94	69.4	5	0.1022	-1.269	4.240	0.967
21-Dec-93	69.4	6	0.1243	-1.154	4.240	0.968
29-Oct-93	69.4	7	0.1464	-1.052	4.240	0.967
8-Oct-98	70.6	8	0.1685	-0.960	4.257	0.964
17-Feb-94	74.32	9	0.1906	-0.876	4.308	0.962
21-Dec-93	75.05	10	0.2127	-0.797	4.318	0.959
14-Sep-95	86.25	11	0.2348	-0.723	4.457	0.956
23-Jul-94	86.25	12	0.2569	-0.653	4.457	0.953
16-Nov-94	96.4	13	0.2790	-0.586	4.569	0.951
14-Dec-94	113.97	14	0.3011	-0.521	4.736	0.948
21-Jan-94	117.39	15	0.3232	-0.459	4.766	0.945
21-Jan-94	124.87	16	0.3453	-0.398	4.827	0.941
15-Aug-95	135.53	17	0.3674	-0.339	4.909	0.937
24-Nov-98	139.4	18	0.3895	-0.281	4.937	0.933
26-Jul-95	145.29	19	0.4116	-0.223	4.979	0.929
24-Jun-94	155.53	20	0.4337	-0.167	5.047	0.926
4-Jan-99	159.8	21	0.4558	-0.111	5.074	0.924
4-Nov-97	183	22	0.4779	-0.055	5.209	0.926
12-Jul-95	196.51	23	0.5000	0.000	5.281	0.925
9-Mar-99	201.5	24	0.5221	0.055	5.306	0.927
8-Jun-94	262	25	0.5442	0.111	5.568	0.937
28-Jun-95	280.46	26	0.5663	0.167	5.636	0.934
23-Mar-94	283.62	27	0.5884	0.223	5.648	0.932
7-Mar-94	313.19	28	0.6105	0.281	5.747	0.935
8-Mar-95	386.4	29	0.6326	0.339	5.957	0.939
6-Apr-94	394.31	30	0.6547	0.398	5.977	0.932
20-May-94	435.57	31	0.6768	0.459	6.077	0.926
13-Jun-95	448.51	32	0.6989	0.521	6.106	0.916
11-Jan-95	466.16	33	0.7210	0.586	6.145	0.906
27-Apr-95	498.21	34	0.7431	0.653	6.211	0.894
9-Feb-95	526.86	35	0.7652	0.723	6.267	0.880
29-May-98	577.1	36	0.7873	0.797	6.358	0.863
14-Apr-95	603.44	37	0.8094	0.876	6.403	0.839
14-Jan-99	614.2	38	0.8315	0.960	6.420	0.812
24-May-95	772.69	39	0.8536	1.052	6.650	0.843
24-Apr-98	779.1	40	0.8757	1.154	6.658	0.801
18-Apr-94	957.4	41	0.8978	1.269	6.864	0.931
3-May-94	1009.84	42	0.9199	1.404	6.918	
11-May-95	1088.15	43	0.9420	1.572	6.992	
23-Mar-95	1170.56	44	0.9641	1.800	7.065	
11-May-98	1230	45	0.9862	2.203	7.115	

Secondary Scale For LN graphs

μ	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SF270 **Date:** 27-Jun-00
Chemical: tCd **Analyst:** B.Walthall
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,925	349	12	17		0.00	0.00	0.00
SD:	626	330	6	13		1.00	1.00	1.00
CV:	0.02	0.94	0.50	0.81				
Min:	34,271	55	3	3.5		-0.89	-1.47	-0.97
Max:	36,228	1,230	30	63		2.67	3.22	3.49
Median:	34,739	197	11	12		-0.46	-0.16	-0.33

tCd SF270 : Concentration v. Discharge, Q — Q = mTime +b — LnQ = mTime +b

Conc. = mQ+b (r2=0.256)	update r2	0.26	0.256		r2:	0.017	0.022
r2 Q,[COC]:	0.26	[tCd]	Q		m:	0.0681	0.00023
slope, m:	0.0	14	55.0		b:	-2030	-2.57
intercept, b:	14.6	12	349.4				
N: 45		4	1230				
LnConc. = mLn(Q)+b (r2=0.406)		update r2	0.41	0.406			
r2 lnQ,ln[COC]:	0.41	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	-0.31	2.77	4.01	16	55		
intercept, b:	4.02	2.20	5.86	9	349		
N: 45		1.81	7.11	6	1,230		

N= 45

	Sampling Date	Q Discharge cfs	tCd Concentration ug/L	tCd Load lbs/day	Ln Q	Ln tCd Conc.	Ln tCd Load	tCd SF270 Standardized Values = (x - Avg)/SD Q	for graph 0 Conc	Load
update for new data										
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
IDEQ	29-Oct-93	69.4	10.6	4.0	4.24	2.36	1.38	-0.85	-0.16	-0.94
IDEQ	1-Dec-93	69.4	12.2	4.6	4.24	2.50	1.52	-0.85	0.12	-0.90
IDEQ	21-Dec-93	69.4	17.1	6.4	4.24	2.84	1.85	-0.85	0.97	-0.76
IDEQ	21-Dec-93	75.05	17.1	6.9	4.32	2.84	1.93	-0.83	0.97	-0.72
IDEQ	21-Jan-94	117.39	18	11.4	4.77	2.89	2.43	-0.70	1.13	-0.39
IDEQ	21-Jan-94	124.87	18	12.1	4.83	2.89	2.49	-0.68	1.13	-0.33
IDEQ	17-Feb-94	74.32	14	5.6	4.31	2.64	1.72	-0.83	0.43	-0.82
IDEQ	7-Mar-94	313.19	10	16.8	5.75	2.30	2.82	-0.11	-0.26	0.03
IDEQ	23-Mar-94	283.62	10	15.3	5.65	2.30	2.73	-0.20	-0.26	-0.09
IDEQ	6-Apr-94	394.31	7.1	15.1	5.98	1.96	2.71	0.14	-0.77	-0.11
IDEQ	18-Apr-94	957.4	6	30.9	6.86	1.79	3.43	1.84	-0.96	1.08
IDEQ	3-May-94	1009.84	5.6	30.4	6.92	1.72	3.42	2.00	-1.03	1.05
IDEQ	20-May-94	435.57	5.1	12.0	6.08	1.63	2.48	0.26	-1.12	-0.34
IDEQ	8-Jun-94	262	6.5	9.2	5.57	1.87	2.22	-0.27	-0.87	-0.55
IDEQ	24-Jun-94	155.53	8.9	7.4	5.05	2.19	2.01	-0.59	-0.46	-0.68
IDEQ	23-Jul-94	86.25	9.8	4.5	4.46	2.28	1.51	-0.80	-0.30	-0.90
IDEQ	16-Aug-94	69.4	10.6	4.0	4.24	2.36	1.38	-0.85	-0.16	-0.94
IDEQ	9-Sep-94	62.45	11.2	3.8	4.13	2.42	1.33	-0.87	-0.06	-0.96
IDEQ	5-Oct-94	54.98	12	3.5	4.01	2.48	1.27	-0.89	0.08	-0.97
IDEQ	16-Nov-94	96.4	29	15.0	4.57	3.37	2.71	-0.77	3.04	-0.11
IDEQ	14-Dec-94	113.97	30	18.4	4.74	3.40	2.91	-0.71	3.22	0.14
IDEQ	11-Jan-95	466.16	18	45.1	6.14	2.89	3.81	0.35	1.13	2.15
IDEQ	9-Feb-95	526.86	7.9	22.4	6.27	2.07	3.11	0.54	-0.63	0.44
IDEQ	8-Mar-95	386.4	7.9	16.4	5.96	2.07	2.80	0.11	-0.63	-0.01
IDEQ	23-Mar-95	1170.56	10	63.0	7.07	2.30	4.14	2.49	-0.26	3.49
IDEQ	14-Apr-95	603.44	11	35.7	6.40	2.40	3.58	0.77	-0.09	1.44
IDEQ	27-Apr-95	498.21	7.6	20.4	6.21	2.03	3.01	0.45	-0.68	0.29
IDEQ	11-May-95	1088.15	6.4	37.5	6.99	1.86	3.62	2.24	-0.89	1.58
IDEQ	24-May-95	772.69	4.7	19.5	6.65	1.55	2.97	1.28	-1.19	0.23
IDEQ	13-Jun-95	448.51	6	14.5	6.11	1.79	2.67	0.30	-0.96	-0.15
IDEQ	28-Jun-95	280.46	7.2	10.9	5.64	1.97	2.39	-0.21	-0.75	-0.42
IDEQ	12-Jul-95	196.51	9.8	10.4	5.28	2.28	2.34	-0.46	-0.30	-0.46
IDEQ	26-Jul-95	145.29	10	7.8	4.98	2.30	2.06	-0.62	-0.26	-0.65
IDEQ	15-Aug-95	135.53	11	8.0	4.91	2.40	2.08	-0.65	-0.09	-0.64
IDEQ	14-Sep-95	86.25	11	5.1	4.46	2.40	1.63	-0.80	-0.09	-0.86
URS	4-Nov-97	183	11	10.8	5.21	2.40	2.38	-0.50	-0.09	-0.43
IDEQ	24-Apr-98	779.1	7.5	31.4	6.66	2.01	3.45	1.30	-0.70	1.12
URS	11-May-98	1230	3.1	20.5	7.11	1.13	3.02	2.67	-1.47	0.30
IDEQ	29-May-98	577.1	6.6	20.5	6.36	1.89	3.02	0.69	-0.86	0.30
IDEQ	29-Sep-98	68.2	13	4.8	4.22	2.56	1.56	-0.85	0.26	-0.88
IDEQ	8-Oct-98	70.6	15	5.7	4.26	2.71	1.74	-0.85	0.61	-0.81
IDEQ	24-Nov-98	139.4	24	18.0	4.94	3.18	2.89	-0.64	2.17	0.11
IDEQ	4-Jan-99	159.8	12	10.3	5.07	2.48	2.33	-0.58	0.08	-0.47
IDEQ	14-Jan-99	614.2	16	52.9	6.42	2.77	3.97	0.80	0.78	2.73
IDEQ	9-Mar-99	201.5	13	14.1	5.31	2.56	2.65	-0.45	0.26	-0.18

tCd

Concentration over time analysis

	tCd	SF270		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.0002	0.00001
	Time	Ln[COC]	[COC]		
first:	29-Oct-93	2.33	10		
mid:	9-Feb-95	2.33	10		
last:	9-Mar-99	2.35	10		
	LnConc.=mTime+b >'96 r2, m:			#REF!	#REF!
	#REF!	#REF!	#REF!		
	9-Mar-99	#REF!	#REF!		

Load over time analysis

	tCd	SF270			
				Load over time	
	LnLoad=mTime+b All data r2, m:			0.040	0.00024
	Time	LnLoad	Load		
first:	29-Oct-93	2.36	11		
mid:	9-Feb-95	2.48	12		
last:	9-Mar-99	2.83	17		
	LnLoad=mTime+b >'96 r2, m:			#REF!	#REF!
	#REF!	#REF!	#REF!		
	9-Mar-99	#REF!	#REF!		

	max r2:	0.577		max r2:	0.393	
	Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.000	0.00001	1.94	0.040	0.00024	-5.86
	0.000	0.00001	1.89	0.029	0.00020	-4.49
	0.001	0.00002	1.65	0.020	0.00017	-3.24
	0.003	0.00004	0.92	0.015	0.00014	-2.38
	0.007	0.00006	0.11	0.010	0.00012	-1.55
	0.014	0.00009	-0.82	0.009	0.00011	-1.40
	0.025	0.00012	-1.85	0.009	0.00011	-1.33
	0.033	0.00014	-2.54	0.004	0.00008	-0.04
	0.035	0.00014	-2.74	0.005	0.00009	-0.43
	0.037	0.00015	-2.96	0.006	0.00009	-0.68
	0.031	0.00014	-2.60	0.007	0.00010	-0.93
	0.023	0.00012	-1.88	0.014	0.00015	-2.52
	0.014	0.00009	-0.96	0.024	0.00019	-4.25
	0.006	0.00006	0.26	0.024	0.00020	-4.31
	0.002	0.00003	1.11	0.020	0.00018	-3.83
	0.001	0.00003	1.39	0.014	0.00015	-2.82
	0.001	0.00002	1.49	0.005	0.00009	-0.60
	0.001	0.00003	1.42	0.000	0.00001	2.23
	0.001	0.00003	1.21	0.004	-0.00008	5.54
	0.003	0.00004	0.79	0.028	-0.00019	9.42
	0.022	0.00012	-1.95	0.031	-0.00020	9.97
	0.083	0.00021	-5.15	0.030	-0.00020	10.02
	0.145	0.00027	-7.34	0.014	-0.00013	7.52
	0.140	0.00027	-7.38	0.009	-0.00011	6.72
	0.134	0.00027	-7.40	0.009	-0.00011	6.76
	0.148	0.00030	-8.23	0.000	0.00001	2.16
	0.177	0.00033	-9.56	0.010	0.00011	-1.29
	0.169	0.00034	-9.67	0.021	0.00016	-3.25
	0.143	0.00032	-8.97	0.083	0.00032	-8.67
	0.088	0.00024	-6.31	0.135	0.00042	-12.32
	0.048	0.00018	-4.16	0.173	0.00050	-15.40
	0.023	0.00013	-2.39	0.186	0.00056	-17.63
	0.021	0.00014	-2.69	0.200	0.00065	-20.74
	0.021	0.00017	-3.57	0.173	0.00069	-22.33
	0.041	0.00031	-8.64	0.146	0.00083	-27.09
	0.284	0.00200	-69.56	0.000	-0.00002	3.49
	0.562	0.00386	-136.73	0.023	-0.00100	38.72
	0.577	0.00443	-157.34	0.001	0.00021	-5.08
	0.333	0.00241	-84.38	0.036	0.00167	-57.87
	0.029	-0.00069	27.71	0.393	0.00883	-316.62
	0.178	-0.00199	74.77	0.214	0.00666	-238.19

update for EV, CV:

tCd		SF270		
LN Analysis		tCd		
Load		Load Data, EV=16.5 lbs/day CV=0.806		
Avg:	17	Load Data-based LN		
SD:	13	u	ln tCd Load	tCd Load
CV:	0.81	3	4.7	107
Min:	3.5	0	2.55	13
Max:	63	-3	0.43	1.5
Median:	12			
		17	16.5	
		0.81	0.806	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.981, EV=16.9lbs/day CV=0.919; max r2=0.99**

r2 u,lnLoad:	0.981	u	lnLoad	Load		
slope, m:	1.278	3	4.87	130		
intercept, b:	-3.222	0	2.52	12		
N:	45	-3	0.17	1.2		
E[Load]:	16.9	Parameter Estimates			0.981	0.981
SD[Load]:	16	from LN regression			16.9	16.9
CV[Load]:	0.92	update graph label			0.9	0.919
					max r2	
	tCd	N: 45			0.992	

Date	tCd Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
5-Oct-94	3.5	1	0.0138	-2.203	1.267	0.981
9-Sep-94	3.8	2	0.0359	-1.800	1.325	0.989
29-Oct-93	4.0	3	0.0580	-1.572	1.376	0.991
16-Aug-94	4.0	4	0.0801	-1.404	1.376	0.992
23-Jul-94	4.5	5	0.1022	-1.269	1.515	0.991
1-Dec-93	4.6	6	0.1243	-1.154	1.516	0.991
29-Sep-98	4.8	7	0.1464	-1.052	1.562	0.990
14-Sep-95	5.1	8	0.1685	-0.960	1.630	0.989
17-Feb-94	5.6	9	0.1906	-0.876	1.722	0.989
8-Oct-98	5.7	10	0.2127	-0.797	1.740	0.989
21-Dec-93	6.4	11	0.2348	-0.723	1.854	0.989
21-Dec-93	6.9	12	0.2569	-0.653	1.932	0.989
24-Jun-94	7.4	13	0.2790	-0.586	2.008	0.989
26-Jul-95	7.8	14	0.3011	-0.521	2.056	0.988
15-Aug-95	8.0	15	0.3232	-0.459	2.082	0.988
8-Jun-94	9.2	16	0.3453	-0.398	2.215	0.988
4-Jan-99	10.3	17	0.3674	-0.339	2.334	0.987
12-Jul-95	10.4	18	0.3895	-0.281	2.338	0.986
4-Nov-97	10.8	19	0.4116	-0.223	2.382	0.985
28-Jun-95	10.9	20	0.4337	-0.167	2.385	0.984
21-Jan-94	11.4	21	0.4558	-0.111	2.431	0.983
20-May-94	12.0	22	0.4779	-0.055	2.481	0.982
21-Jan-94	12.1	23	0.5000	0.000	2.493	0.980
9-Mar-99	14.1	24	0.5221	0.055	2.646	0.979
13-Jun-95	14.5	25	0.5442	0.111	2.673	0.979
16-Nov-94	15.0	26	0.5663	0.167	2.711	0.978
6-Apr-94	15.1	27	0.5884	0.223	2.712	0.977
23-Mar-94	15.3	28	0.6105	0.281	2.725	0.975
8-Mar-95	16.4	29	0.6326	0.339	2.799	0.973
7-Mar-94	16.8	30	0.6547	0.398	2.824	0.970
24-Nov-98	18.0	31	0.6768	0.459	2.890	0.966
14-Dec-94	18.4	32	0.6989	0.521	2.912	0.963
24-May-95	19.5	33	0.7210	0.586	2.972	0.958
27-Apr-95	20.4	34	0.7431	0.653	3.014	0.952
29-May-98	20.5	35	0.7652	0.723	3.020	0.944
11-May-98	20.5	36	0.7873	0.797	3.021	0.936
9-Feb-95	22.4	37	0.8094	0.876	3.109	0.944
3-May-94	30.4	38	0.8315	0.960	3.415	0.978
18-Apr-94	30.9	39	0.8536	1.052	3.431	0.979
24-Apr-98	31.4	40	0.8757	1.154	3.448	0.974
14-Apr-95	35.7	41	0.8978	1.269	3.575	0.970
11-May-95	37.5	42	0.9199	1.404	3.623	
11-Jan-95	45.1	43	0.9420	1.572	3.810	
14-Jan-99	52.9	44	0.9641	1.800	3.968	
23-Mar-95	63.0	45	0.9862	2.203	4.143	

update for EV, CV:

tCd		SF270		12	11.5
LN Analysis		tCd		0.50	0.499

Concentration — Conc. Data, EV=11.5 ug/L CV=0.499

		Data-based LN		
Avg:	12	u	ln[tCd]	[tCd]
SD:	6	3	3.7	42
CV:	0.50	3	3.7	42
Min:	3	0	2.33	10
Max:	30	-3	0.92	3
Median:	11			

				0.983	0.983
u=mLn(Conc.)+b:				11.6	11.6
update for r2, EV, CV:	r2=0.983, EV=11.6 ug/L CV=0.516; max r2=0.98			0.516	0.516
r2 u,lnConc:	0.983	u	lnConc.	Conc.	
slope, m:	2.060	3	3.79	44	
intercept, b:	-4.808	0	2.33	10	
N:	45	-3	0.88	2	
E[Conc]:	11.6	Parameter Estimates			
SD[Conc]:	6	from LN regression			
CV[Conc]:	0.52	update graph label			

Date	tCd Concentration ug/L Ranked	N: 45 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.983 r2 forward
update and rank for new data						
11-May-98	3.1	1	0.0138	-2.203	1.131	0.983
24-May-95	4.7	2	0.0359	-1.800	1.548	0.983
20-May-94	5.1	3	0.0580	-1.572	1.629	0.982
3-May-94	5.6	4	0.0801	-1.404	1.723	0.981
18-Apr-94	6	5	0.1022	-1.269	1.792	0.980
13-Jun-95	6	6	0.1243	-1.154	1.792	0.979
11-May-95	6.4	7	0.1464	-1.052	1.856	0.978
8-Jun-94	6.5	8	0.1685	-0.960	1.872	0.976
29-May-98	6.6	9	0.1906	-0.876	1.887	0.975
6-Apr-94	7.1	10	0.2127	-0.797	1.960	0.973
28-Jun-95	7.2	11	0.2348	-0.723	1.974	0.971
24-Apr-98	7.5	12	0.2569	-0.653	2.015	0.969
27-Apr-95	7.6	13	0.2790	-0.586	2.028	0.967
9-Feb-95	7.9	14	0.3011	-0.521	2.067	0.964
8-Mar-95	7.9	15	0.3232	-0.459	2.067	0.962
24-Jun-94	8.9	16	0.3453	-0.398	2.186	0.959
23-Jul-94	9.8	17	0.3674	-0.339	2.282	0.958
12-Jul-95	9.8	18	0.3895	-0.281	2.282	0.961
7-Mar-94	10	19	0.4116	-0.223	2.303	0.963
23-Mar-94	10	20	0.4337	-0.167	2.303	0.965
23-Mar-95	10	21	0.4558	-0.111	2.303	0.967
26-Jul-95	10	22	0.4779	-0.055	2.303	0.967
29-Oct-93	10.6	23	0.5000	0.000	2.361	0.965
16-Aug-94	10.6	24	0.5221	0.055	2.361	0.967
14-Apr-95	11	25	0.5442	0.111	2.398	0.967
15-Aug-95	11	26	0.5663	0.167	2.398	0.968
14-Sep-95	11	27	0.5884	0.223	2.398	0.968
4-Nov-97	11	28	0.6105	0.281	2.398	0.966
9-Sep-94	11.2	29	0.6326	0.339	2.416	0.962
5-Oct-94	12	30	0.6547	0.398	2.485	0.958
4-Jan-99	12	31	0.6768	0.459	2.485	0.954
1-Dec-93	12.2	32	0.6989	0.521	2.501	0.948
29-Sep-98	13	33	0.7210	0.586	2.565	0.941
9-Mar-99	13	34	0.7431	0.653	2.565	0.933
17-Feb-94	14	35	0.7652	0.723	2.639	0.924
8-Oct-98	15	36	0.7873	0.797	2.708	0.910
14-Jan-99	16	37	0.8094	0.876	2.773	0.895
21-Dec-93	17.1	38	0.8315	0.960	2.839	0.881
21-Dec-93	17.1	39	0.8536	1.052	2.839	0.877
21-Jan-94	18	40	0.8757	1.154	2.890	0.856
21-Jan-94	18	41	0.8978	1.269	2.890	0.831
11-Jan-95	18	42	0.9199	1.404	2.890	
24-Nov-98	24	43	0.9420	1.572	3.178	
16-Nov-94	29	44	0.9641	1.800	3.367	
14-Dec-94	30	45	0.9862	2.203	3.401	

update for EV, CV:

tCd		SF270			349	349
LN Analysis		tCd			0.94	0.943
Discharge, Q		**Q Data, EV=349 cfs CV=0.943**				
Avg:	349	Q Data-based LN				
SD:	330	u	lnQ	Q		
CV:	0.94	3	7.9	2783		
Min:	55	0	5.54	254		
Max:	1,230	-3	3.14	23		
Median:	197					
					0.941	0.941
					376.0	376
	u=mLn(Q)+b:				1.35	1.35

update for r2, EV, CV: **r2=0.941, EV=376 cfs CV=1.35; max r2=0.97**

r2 u,lnQ:	0.941	u	lnQ	Q
slope, m:	0.983	3	8.46	4742
intercept, b:	-5.320	0	5.41	224
N: 45		-3	2.36	11
E[Q]:	376.0	Parameter Estimates		
SD[Q]:	507	from LN regression		
CV[Q]:	1.35	update graph label		

	Q	N: 45				max r2 0.968
	Discharge	i	i-3/8 / N+1/4	u	Ln	r2
Date	cfs	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
5-Oct-94	54.98	1	0.0138	-2.203	4.007	0.941
9-Sep-94	62.45	2	0.0359	-1.800	4.134	0.953
29-Sep-98	68.2	3	0.0580	-1.572	4.222	0.960
29-Oct-93	69.4	4	0.0801	-1.404	4.240	0.965
1-Dec-93	69.4	5	0.1022	-1.269	4.240	0.967
21-Dec-93	69.4	6	0.1243	-1.154	4.240	0.968
16-Aug-94	69.4	7	0.1464	-1.052	4.240	0.967
8-Oct-98	70.6	8	0.1685	-0.960	4.257	0.964
17-Feb-94	74.32	9	0.1906	-0.876	4.308	0.962
21-Dec-93	75.05	10	0.2127	-0.797	4.318	0.959
23-Jul-94	86.25	11	0.2348	-0.723	4.457	0.956
14-Sep-95	86.25	12	0.2569	-0.653	4.457	0.953
16-Nov-94	96.4	13	0.2790	-0.586	4.569	0.951
14-Dec-94	113.97	14	0.3011	-0.521	4.736	0.948
21-Jan-94	117.39	15	0.3232	-0.459	4.766	0.945
21-Jan-94	124.87	16	0.3453	-0.398	4.827	0.941
15-Aug-95	135.53	17	0.3674	-0.339	4.909	0.937
24-Nov-98	139.4	18	0.3895	-0.281	4.937	0.933
26-Jul-95	145.29	19	0.4116	-0.223	4.979	0.929
24-Jun-94	155.53	20	0.4337	-0.167	5.047	0.926
4-Jan-99	159.8	21	0.4558	-0.111	5.074	0.924
4-Nov-97	183	22	0.4779	-0.055	5.209	0.926
12-Jul-95	196.51	23	0.5000	0.000	5.281	0.925
9-Mar-99	201.5	24	0.5221	0.055	5.306	0.927
8-Jun-94	262	25	0.5442	0.111	5.568	0.937
28-Jun-95	280.46	26	0.5663	0.167	5.636	0.934
23-Mar-94	283.62	27	0.5884	0.223	5.648	0.932
7-Mar-94	313.19	28	0.6105	0.281	5.747	0.935
8-Mar-95	386.4	29	0.6326	0.339	5.957	0.939
6-Apr-94	394.31	30	0.6547	0.398	5.977	0.932
20-May-94	435.57	31	0.6768	0.459	6.077	0.926
13-Jun-95	448.51	32	0.6989	0.521	6.106	0.916
11-Jan-95	466.16	33	0.7210	0.586	6.145	0.906
27-Apr-95	498.21	34	0.7431	0.653	6.211	0.894
9-Feb-95	526.86	35	0.7652	0.723	6.267	0.880
29-May-98	577.1	36	0.7873	0.797	6.358	0.863
14-Apr-95	603.44	37	0.8094	0.876	6.403	0.839
14-Jan-99	614.2	38	0.8315	0.960	6.420	0.812
24-May-95	772.69	39	0.8536	1.052	6.650	0.843
24-Apr-98	779.1	40	0.8757	1.154	6.658	0.801
18-Apr-94	957.4	41	0.8978	1.269	6.864	0.931
3-May-94	1009.84	42	0.9199	1.404	6.918	
11-May-95	1088.15	43	0.9420	1.572	6.992	
23-Mar-95	1170.56	44	0.9641	1.800	7.065	
11-May-98	1230	45	0.9862	2.203	7.115	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF270	**Date:**	3-Jun-00
Chemical:	tPb	**Analyst:**	J.Johnston
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	34,925	349	48	143	0.00	0.00	0.00
SD:	626	330	90	386	1.00	1.00	1.00
CV:	0.02	0.94	1.88	2.70			
Min:	34,271	55	8	4.4	-0.89	-0.45	-0.36
Max:	36,228	1,230	542	2,272	2.67	5.51	5.52
Median:	34,739	197	21	28	-0.46	-0.30	-0.30

tPb SF270			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.113)		update r2	0.11	0.113	r2:	0.017	0.022
r2 Q,[COC]:	0.11	[tPb]	Q		m:	0.0681	0.00023
slope, m:	0.1	21	55.0		b:	-2030	-2.57
intercept, b:	15.7	48	349.4				
N: 45		128	1230				
LnConc. = mLn(Q)+b (r2=0.153)		update r2	0.15	0.153			
r2 lnQ,ln[COC]:	0.15	ln[tPb]	ln Q	[tPb]	Q		
slope, m:	0.34	2.81	4.01	17	55		
intercept, b:	1.46	3.44	5.86	31	349		
N: 45		3.87	7.11	48	1,230		

N= 45

	Sampling Date	Q Discharge cfs	tPb Concentration ug/L	tPb Load lbs/day	Ln Q	Ln tPb Conc.	Ln tPb Load	tPb SF270 for graph 0 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data										
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
IDEQ	29-Oct-93	69.4	13	4.9	4.24	2.56	1.58	-0.85	-0.39	-0.36
IDEQ	1-Dec-93	69.4	36	13.4	4.24	3.58	2.60	-0.85	-0.13	-0.34
IDEQ	21-Dec-93	69.4	13	4.9	4.24	2.56	1.58	-0.85	-0.39	-0.36
IDEQ	21-Dec-93	75.05	13	5.2	4.32	2.56	1.66	-0.83	-0.39	-0.36
IDEQ	21-Jan-94	117.39	13	8.2	4.77	2.56	2.11	-0.70	-0.39	-0.35
IDEQ	21-Jan-94	124.87	13	8.7	4.83	2.56	2.17	-0.68	-0.39	-0.35
IDEQ	17-Feb-94	74.32	13	5.2	4.31	2.56	1.65	-0.83	-0.39	-0.36
IDEQ	7-Mar-94	313.19	21	35.4	5.75	3.04	3.57	-0.11	-0.30	-0.28
IDEQ	23-Mar-94	283.62	19	29.0	5.65	2.94	3.37	-0.20	-0.32	-0.30
IDEQ	6-Apr-94	394.31	23	48.8	5.98	3.14	3.89	0.14	-0.28	-0.24
IDEQ	18-Apr-94	957.4	227	1169.2	6.86	5.42	7.06	1.84	2.00	2.66
IDEQ	3-May-94	1009.84	19	103.2	6.92	2.94	4.64	2.00	-0.32	-0.10
IDEQ	20-May-94	435.57	30	70.3	6.08	3.40	4.25	0.26	-0.20	-0.19
IDEQ	8-Jun-94	262	21	29.6	5.57	3.04	3.39	-0.27	-0.30	-0.29
IDEQ	24-Jun-94	155.53	16	13.4	5.05	2.77	2.59	-0.59	-0.35	-0.34
IDEQ	23-Jul-94	86.25	19	8.8	4.46	2.94	2.18	-0.80	-0.32	-0.35
IDEQ	16-Aug-94	69.4	16	6.0	4.24	2.77	1.79	-0.85	-0.35	-0.36
IDEQ	9-Sep-94	62.45	21	7.1	4.13	3.04	1.95	-0.87	-0.30	-0.35
IDEQ	5-Oct-94	54.98	15	4.4	4.01	2.71	1.49	-0.89	-0.36	-0.36
IDEQ	16-Nov-94	96.4	27	14.0	4.57	3.30	2.64	-0.77	-0.23	-0.33
IDEQ	14-Dec-94	113.97	19	11.7	4.74	2.94	2.46	-0.71	-0.32	-0.34
IDEQ	11-Jan-95	466.16	171	428.9	6.14	5.14	6.06	0.35	1.38	0.74
IDEQ	9-Feb-95	526.86	21	59.5	6.27	3.04	4.09	0.54	-0.30	-0.22
IDEQ	8-Mar-95	386.4	20	41.6	5.96	3.00	3.73	0.11	-0.31	-0.26
IDEQ	23-Mar-95	1170.56	30	188.9	7.07	3.40	5.24	2.49	-0.20	0.12
IDEQ	14-Apr-95	603.44	25	81.2	6.40	3.22	4.40	0.77	-0.25	-0.16
IDEQ	27-Apr-95	498.21	22	59.0	6.21	3.09	4.08	0.45	-0.29	-0.22
IDEQ	11-May-95	1088.15	58	339.5	6.99	4.06	5.83	2.24	0.12	0.51
IDEQ	24-May-95	772.69	20	83.1	6.65	3.00	4.42	1.28	-0.31	-0.16
IDEQ	13-Jun-95	448.51	21	50.7	6.11	3.04	3.93	0.30	-0.30	-0.24
IDEQ	28-Jun-95	280.46	37	55.8	5.64	3.61	4.02	-0.21	-0.12	-0.23
IDEQ	12-Jul-95	196.51	23	24.3	5.28	3.14	3.19	-0.46	-0.28	-0.31
IDEQ	26-Jul-95	145.29	30	23.4	4.98	3.40	3.15	-0.62	-0.20	-0.31
IDEQ	15-Aug-95	135.53	31	22.6	4.91	3.43	3.12	-0.65	-0.19	-0.31
IDEQ	14-Sep-95	86.25	31	14.4	4.46	3.43	2.67	-0.80	-0.19	-0.33
URS	4-Nov-97	183	30.6	30.1	5.21	3.42	3.41	-0.50	-0.19	-0.29
IDEQ	24-Apr-98	779.1	542	2271.8	6.66	6.30	7.73	1.30	5.51	5.52
URS	11-May-98	1230	7.7	51.0	7.11	2.04	3.93	2.67	-0.45	-0.24
IDEQ	29-May-98	577.1	32	99.4	6.36	3.47	4.60	0.69	-0.17	-0.11
IDEQ	29-Sep-98	68.2	22	8.1	4.22	3.09	2.09	-0.85	-0.29	-0.35
IDEQ	8-Oct-98	70.6	45	17.1	4.26	3.81	2.84	-0.85	-0.03	-0.33
IDEQ	24-Nov-98	139.4	38	28.5	4.94	3.64	3.35	-0.64	-0.11	-0.30
IDEQ	4-Jan-99	159.8	14	12.0	5.07	2.64	2.49	-0.58	-0.38	-0.34
IDEQ	14-Jan-99	614.2	252	832.7	6.42	5.53	6.72	0.80	2.28	1.79
IDEQ	9-Mar-99	201.5	15	16.3	5.31	2.71	2.79	-0.45	-0.36	-0.33

tPb

Concentration over time analysis

	tPb	SF270		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b	All data r2, m:		0.078	0.00037
	Time	Ln[COC]	[COC]		
first:	29-Oct-93	3.05	21		
mid:	9-Feb-95	3.22	25		
last:	9-Mar-99	3.77	43		
	LnConc.=mTime+b	>'96 r2, m:		#REF!	#REF!
	#REF!	#REF!	#REF!		
	9-Mar-99	#REF!	#REF!		

Load over time analysis

	tPb	SF270			
				Load over time	
	LnLoad=mTime+b	All data r2, m:		0.063	0.00060
	Time	LnLoad	Load		
first:	29-Oct-93	3.09	22		
mid:	9-Feb-95	3.37	29		
last:	9-Mar-99	4.26	71		
	LnLoad=mTime+b	>'96 r2, m:		#REF!	#REF!
	#REF!	#REF!	#REF!		
	9-Mar-99	#REF!	#REF!		

	max r2:	0.098		max r2:	0.166	
	Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.078	0.00037	-9.63	0.063	0.00060	-17.42
	0.070	0.00035	-8.96	0.052	0.00054	-15.34
	0.076	0.00037	-9.65	0.047	0.00052	-14.54
	0.068	0.00035	-8.95	0.037	0.00045	-12.24
	0.059	0.00033	-8.17	0.027	0.00038	-9.82
	0.051	0.00031	-7.33	0.020	0.00033	-7.92
	0.042	0.00028	-6.41	0.014	0.00027	-5.89
	0.034	0.00025	-5.40	0.007	0.00019	-2.90
	0.031	0.00024	-5.09	0.006	0.00019	-2.77
	0.027	0.00023	-4.57	0.005	0.00017	-2.29
	0.025	0.00022	-4.33	0.006	0.00018	-2.67
	0.063	0.00033	-8.24	0.025	0.00036	-8.88
	0.057	0.00032	-7.84	0.034	0.00042	-11.13
	0.060	0.00033	-8.30	0.041	0.00047	-12.87
	0.056	0.00033	-8.05	0.040	0.00047	-12.99
	0.046	0.00030	-7.17	0.032	0.00043	-11.39
	0.040	0.00028	-6.57	0.021	0.00035	-8.66
	0.031	0.00025	-5.47	0.010	0.00024	-4.66
	0.026	0.00024	-4.88	0.003	0.00013	-0.55
	0.017	0.00019	-3.35	0.000	-0.00004	5.28
	0.016	0.00019	-3.14	0.003	-0.00013	8.77
	0.010	0.00015	-1.95	0.013	-0.00026	13.22
	0.040	0.00029	-6.82	0.003	-0.00011	8.04
	0.034	0.00027	-6.13	0.002	-0.00011	7.97
	0.026	0.00024	-5.14	0.004	-0.00014	9.01
	0.026	0.00025	-5.35	0.000	-0.00003	5.04
	0.022	0.00024	-4.89	0.000	0.00001	3.39
	0.015	0.00021	-3.77	0.000	0.00004	2.66
	0.029	0.00029	-6.91	0.014	0.00029	-6.61
	0.019	0.00025	-5.24	0.026	0.00042	-11.25
	0.010	0.00019	-3.19	0.034	0.00051	-14.43
	0.013	0.00023	-4.66	0.048	0.00066	-19.90
	0.005	0.00016	-2.03	0.040	0.00067	-20.08
	0.002	0.00013	-0.96	0.028	0.00066	-19.73
	0.000	0.00007	1.13	0.013	0.00059	-17.31
	0.006	-0.00066	27.35	0.048	-0.00268	100.40
	0.028	-0.00197	74.76	0.166	-0.00682	250.21
	0.098	0.00305	-106.78	0.007	-0.00116	45.48
	0.000	0.00008	0.58	0.001	-0.00065	27.09
	0.002	-0.00067	27.91	0.105	0.00885	-316.42
	0.041	-0.00415	153.62	0.022	0.00451	-159.33

update for EV, CV:

tPb
LN Analysis
Load

SF270
tPb
Load Data, EV=143 lbs/day CV=2.7
Load Data-based LN

		u	ln tPb Load	tPb Load
Avg:	**143**	3	8.3	3897
SD:	**386**	0	3.91	50
CV:	**2.70**	-3	-0.45	0.6
Min:	**4.4**			
Max:	**2,272**			
Median:	**28**			
		143	143	
		2.70	2.7	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.926, EV=116lbs/day CV=3.43; max r2=0.97**

r2 u,lnLoad:	0.926	u	lnLoad	Load		
slope, m:	0.626	3	8.27	3891		
intercept, b:	-2.178	0	3.48	32		
N:	45	-3	-1.31	0.3		
E[Load]:	115.7	Parameter Estimates			0.926	0.926
SD[Load]:	397	from LN regression			115.7	116
CV[Load]:	3.43	update graph label			3.4	3.43
					max r2	
		N: 45			0.970	

Date	tPb Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
5-Oct-94	4.4	1	0.0138	-2.203	1.490	0.926
29-Oct-93	4.9	2	0.0359	-1.800	1.580	0.943
21-Dec-93	4.9	3	0.0580	-1.572	1.580	0.951
17-Feb-94	5.2	4	0.0801	-1.404	1.648	0.955
21-Dec-93	5.2	5	0.1022	-1.269	1.658	0.957
16-Aug-94	6.0	6	0.1243	-1.154	1.787	0.957
9-Sep-94	7.1	7	0.1464	-1.052	1.954	0.957
29-Sep-98	8.1	8	0.1685	-0.960	2.088	0.958
21-Jan-94	8.2	9	0.1906	-0.876	2.105	0.959
21-Jan-94	8.7	10	0.2127	-0.797	2.167	0.959
23-Jul-94	8.8	11	0.2348	-0.723	2.177	0.959
14-Dec-94	11.7	12	0.2569	-0.653	2.455	0.958
4-Jan-99	12.0	13	0.2790	-0.586	2.488	0.959
24-Jun-94	13.4	14	0.3011	-0.521	2.594	0.959
1-Dec-93	13.4	15	0.3232	-0.459	2.598	0.960
16-Nov-94	14.0	16	0.3453	-0.398	2.639	0.960
14-Sep-95	14.4	17	0.3674	-0.339	2.666	0.959
9-Mar-99	16.3	18	0.3895	-0.281	2.789	0.957
8-Oct-98	17.1	19	0.4116	-0.223	2.839	0.955
15-Aug-95	22.6	20	0.4337	-0.167	3.118	0.953
26-Jul-95	23.4	21	0.4558	-0.111	3.155	0.955
12-Jul-95	24.3	22	0.4779	-0.055	3.191	0.955
24-Nov-98	28.5	23	0.5000	0.000	3.350	0.955
23-Mar-94	29.0	24	0.5221	0.055	3.367	0.957
8-Jun-94	29.6	25	0.5442	0.111	3.388	0.958
4-Nov-97	30.1	26	0.5663	0.167	3.405	0.958
7-Mar-94	35.4	27	0.5884	0.223	3.566	0.956
8-Mar-95	41.6	28	0.6105	0.281	3.728	0.955
6-Apr-94	48.8	29	0.6326	0.339	3.888	0.957
13-Jun-95	50.7	30	0.6547	0.398	3.925	0.962
11-May-98	51.0	31	0.6768	0.459	3.931	0.966
28-Jun-95	55.8	32	0.6989	0.521	4.022	0.967
27-Apr-95	59.0	33	0.7210	0.586	4.077	0.969
9-Feb-95	59.5	34	0.7431	0.653	4.086	0.970
20-May-94	70.3	35	0.7652	0.723	4.253	0.966
14-Apr-95	81.2	36	0.7873	0.797	4.396	0.963
24-May-95	83.1	37	0.8094	0.876	4.421	0.958
29-May-98	99.4	38	0.8315	0.960	4.599	0.949
3-May-94	103.2	39	0.8536	1.052	4.637	0.937
23-Mar-95	188.9	40	0.8757	1.154	5.241	0.956
11-May-95	339.5	41	0.8978	1.269	5.828	0.969
11-Jan-95	428.9	42	0.9199	1.404	6.061	
14-Jan-99	832.7	43	0.9420	1.572	6.725	
18-Apr-94	1169.2	44	0.9641	1.800	7.064	
24-Apr-98	2271.8	45	0.9862	2.203	7.728	

		update for EV, CV:			
tPb		SF270		48	47.7
LN Analysis		tPb		1.88	1.88
Concentration		Conc. Data, EV=47.7 ug/L CV=1.88			
Avg:	48	Data-based LN			
SD:	90	u	ln[tPb]	[tPb]	
CV:	1.88	3	6.8	896	
Min:	8	0	3.11	22	
Max:	542	-3	-0.58	1	
Median:	21				

					0.769	0.769
u=mLn(Conc.)+b:					43.1	43.1
update for r2, EV, CV:	r2=0.769, EV=43.1 ug/L CV=1.26; max r2=0.93				1.256	1.26
	r2 u,lnConc:	0.769	u	lnConc.	Conc.	
	slope, m:	1.027	3	6.21	498	
	intercept, b:	-3.380	0	3.29	27	
	N:	45	-3	0.37	1	
	E[Conc]:	43.1	Parameter Estimates			
	SD[Conc]:	54	from LN regression			
	CV[Conc]:	1.26	update graph label			

	tPb	N: 45				max r2 0.930
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
11-May-98	7.7	1	0.0138	-2.203	2.041	0.769
29-Oct-93	13	2	0.0359	-1.800	2.565	0.762
21-Dec-93	13	3	0.0580	-1.572	2.565	0.776
21-Dec-93	13	4	0.0801	-1.404	2.565	0.784
21-Jan-94	13	5	0.1022	-1.269	2.565	0.789
21-Jan-94	13	6	0.1243	-1.154	2.565	0.792
17-Feb-94	13	7	0.1464	-1.052	2.565	0.793
4-Jan-99	14	8	0.1685	-0.960	2.639	0.792
5-Oct-94	15	9	0.1906	-0.876	2.708	0.792
9-Mar-99	15	10	0.2127	-0.797	2.708	0.794
24-Jun-94	16	11	0.2348	-0.723	2.773	0.794
16-Aug-94	16	12	0.2569	-0.653	2.773	0.796
23-Mar-94	19	13	0.2790	-0.586	2.944	0.796
3-May-94	19	14	0.3011	-0.521	2.944	0.804
23-Jul-94	19	15	0.3232	-0.459	2.944	0.811
14-Dec-94	19	16	0.3453	-0.398	2.944	0.817
8-Mar-95	20	17	0.3674	-0.339	2.996	0.822
24-May-95	20	18	0.3895	-0.281	2.996	0.829
7-Mar-94	21	19	0.4116	-0.223	3.045	0.835
8-Jun-94	21	20	0.4337	-0.167	3.045	0.843
9-Sep-94	21	21	0.4558	-0.111	3.045	0.850
9-Feb-95	21	22	0.4779	-0.055	3.045	0.856
13-Jun-95	21	23	0.5000	0.000	3.045	0.860
27-Apr-95	22	24	0.5221	0.055	3.091	0.863
29-Sep-98	22	25	0.5442	0.111	3.091	0.867
6-Apr-94	23	26	0.5663	0.167	3.135	0.870
12-Jul-95	23	27	0.5884	0.223	3.135	0.873
14-Apr-95	25	28	0.6105	0.281	3.219	0.874
16-Nov-94	27	29	0.6326	0.339	3.296	0.877
20-May-94	30	30	0.6547	0.398	3.401	0.884
23-Mar-95	30	31	0.6768	0.459	3.401	0.897
26-Jul-95	30	32	0.6989	0.521	3.401	0.908
4-Nov-97	30.6	33	0.7210	0.586	3.421	0.917
15-Aug-95	31	34	0.7431	0.653	3.434	0.925
14-Sep-95	31	35	0.7652	0.723	3.434	0.930
29-May-98	32	36	0.7873	0.797	3.466	0.930
1-Dec-93	36	37	0.8094	0.876	3.584	0.925
28-Jun-95	37	38	0.8315	0.960	3.611	0.918
24-Nov-98	38	39	0.8536	1.052	3.638	0.900
8-Oct-98	45	40	0.8757	1.154	3.807	0.870
11-May-95	58	41	0.8978	1.269	4.060	0.834
11-Jan-95	171	42	0.9199	1.404	5.142	
18-Apr-94	227	43	0.9420	1.572	5.425	
14-Jan-99	252	44	0.9641	1.800	5.529	
24-Apr-98	542	45	0.9862	2.203	6.295	

update for EV, CV:

tPb		SF270			349	349
LN Analysis		tPb			0.94	0.943

Discharge, Q — Q Data, EV=349 cfs CV=0.943

Avg:	349	Q Data-based LN		
SD:	330	u	lnQ	Q
CV:	0.94	3	7.9	2783
Min:	55	0	5.54	254
Max:	1,230	-3	3.14	23
Median:	197			

			0.941	0.941
			376.0	376
u=mLn(Q)+b:			1.35	1.35

update for r2, EV, CV: **r2=0.941, EV=376 cfs CV=1.35; max r2=0.97**

r2 u,lnQ:	0.941	u	lnQ	Q
slope, m:	0.983	3	8.46	4742
intercept, b:	-5.320	0	5.41	224
N:	45	-3	2.36	11
E[Q]:	376.0	Parameter Estimates		
SD[Q]:	507	from LN regression		
CV[Q]:	1.35	update graph label		

Date	Q Discharge cfs Ranked	N: 45 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.968 r2 forward
update and rank for new data						
5-Oct-94	54.98	1	0.0138	-2.203	4.007	0.941
9-Sep-94	62.45	2	0.0359	-1.800	4.134	0.953
29-Sep-98	68.2	3	0.0580	-1.572	4.222	0.960
29-Oct-93	69.4	4	0.0801	-1.404	4.240	0.965
1-Dec-93	69.4	5	0.1022	-1.269	4.240	0.967
21-Dec-93	69.4	6	0.1243	-1.154	4.240	0.968
16-Aug-94	69.4	7	0.1464	-1.052	4.240	0.967
8-Oct-98	70.6	8	0.1685	-0.960	4.257	0.964
17-Feb-94	74.32	9	0.1906	-0.876	4.308	0.962
21-Dec-93	75.05	10	0.2127	-0.797	4.318	0.959
23-Jul-94	86.25	11	0.2348	-0.723	4.457	0.956
14-Sep-95	86.25	12	0.2569	-0.653	4.457	0.953
16-Nov-94	96.4	13	0.2790	-0.586	4.569	0.951
14-Dec-94	113.97	14	0.3011	-0.521	4.736	0.948
21-Jan-94	117.39	15	0.3232	-0.459	4.766	0.945
21-Jan-94	124.87	16	0.3453	-0.398	4.827	0.941
15-Aug-95	135.53	17	0.3674	-0.339	4.909	0.937
24-Nov-98	139.4	18	0.3895	-0.281	4.937	0.933
26-Jul-95	145.29	19	0.4116	-0.223	4.979	0.929
24-Jun-94	155.53	20	0.4337	-0.167	5.047	0.926
4-Jan-99	159.8	21	0.4558	-0.111	5.074	0.924
4-Nov-97	183	22	0.4779	-0.055	5.209	0.926
12-Jul-95	196.51	23	0.5000	0.000	5.281	0.925
9-Mar-99	201.5	24	0.5221	0.055	5.306	0.927
8-Jun-94	262	25	0.5442	0.111	5.568	0.937
28-Jun-95	280.46	26	0.5663	0.167	5.636	0.934
23-Mar-94	283.62	27	0.5884	0.223	5.648	0.932
7-Mar-94	313.19	28	0.6105	0.281	5.747	0.935
8-Mar-95	386.4	29	0.6326	0.339	5.957	0.939
6-Apr-94	394.31	30	0.6547	0.398	5.977	0.932
20-May-94	435.57	31	0.6768	0.459	6.077	0.926
13-Jun-95	448.51	32	0.6989	0.521	6.106	0.916
11-Jan-95	466.16	33	0.7210	0.586	6.145	0.906
27-Apr-95	498.21	34	0.7431	0.653	6.211	0.894
9-Feb-95	526.86	35	0.7652	0.723	6.267	0.880
29-May-98	577.1	36	0.7873	0.797	6.358	0.863
14-Apr-95	603.44	37	0.8094	0.876	6.403	0.839
14-Jan-99	614.2	38	0.8315	0.960	6.420	0.812
24-May-95	772.69	39	0.8536	1.052	6.650	0.843
24-Apr-98	779.1	40	0.8757	1.154	6.658	0.801
18-Apr-94	957.4	41	0.8978	1.269	6.864	0.931
3-May-94	1009.84	42	0.9199	1.404	6.918	
11-May-95	1088.15	43	0.9420	1.572	6.992	
23-Mar-95	1170.56	44	0.9641	1.800	7.065	
11-May-98	1230	45	0.9862	2.203	7.115	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SF270 **Date:** 27-Jun-00
Chemical: tZn **Analyst:** B.Waithall
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	34,925	349	1,631	2,143	0.00	0.00	0.00
SD:	626	330	675	1,445	1.00	1.00	1.00
CV:	0.02	0.94	0.41	0.67			
Min:	34,271	55	100	212.1	-0.89	-2.27	-1.34
Max:	36,228	1,230	2,600	7,431	2.67	1.44	3.66
Median:	34,739	197	1,590	1,681	-0.46	-0.06	-0.32

tZn SF270 : Concentration v. Discharge, Q

					Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.596)		update r2	0.60	0.596	r2:	0.017	0.022
r2 Q,[COC]:	0.60		[tZn]	Q	m:	0.0681	0.00023
slope, m:	-1.6		2,097	55.0	b:	-2030	-2.57
intercept, b:	2183.5		1,631	349.4			
N: 45			240	1230			
LnConc. = mLn(Q)+b (r2=0.514)		update r2	0.51	0.514			
r2 lnQ,ln[COC]:	0.51		ln[tZn]	ln Q	[tZn]	Q	
slope, m:	-0.45		7.90	4.01	2,684	55	
intercept, b:	9.68		7.07	5.86	1,178	349	
N: 45			6.51	7.11	672	1,230	

N= 45

	Sampling Date	Q Discharge	tZn Concentration	tZn Load	Ln Q	Ln tZn Conc.	Ln tZn Load	tZn SF270 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
IDEQ	29-Oct-93	69.4	2370	884.9	4.24	7.77	6.79	-0.85	1.09	-0.87
IDEQ	1-Dec-93	69.4	2300	858.8	4.24	7.74	6.76	-0.85	0.99	-0.89
IDEQ	21-Dec-93	69.4	2600	970.8	4.24	7.86	6.88	-0.85	1.44	-0.81
IDEQ	21-Dec-93	75.05	2600	1049.8	4.32	7.86	6.96	-0.83	1.44	-0.76
IDEQ	21-Jan-94	117.39	2110	1332.6	4.77	7.65	7.19	-0.70	0.71	-0.56
IDEQ	21-Jan-94	124.87	2110	1417.5	4.83	7.65	7.26	-0.68	0.71	-0.50
IDEQ	17-Feb-94	74.32	2490	995.6	4.31	7.82	6.90	-0.83	1.27	-0.79
IDEQ	7-Mar-94	313.19	1400	2358.9	5.75	7.24	7.77	-0.11	-0.34	0.15
IDEQ	23-Mar-94	283.62	1490	2273.6	5.65	7.31	7.73	-0.20	-0.21	0.09
IDEQ	6-Apr-94	394.31	100	212.1	5.98	4.61	5.36	0.14	-2.27	-1.34
IDEQ	18-Apr-94	957.4	820	4223.7	6.86	6.71	8.35	1.84	-1.20	1.44
IDEQ	3-May-94	1009.84	723	3928.0	6.92	6.58	8.28	2.00	-1.35	1.24
IDEQ	20-May-94	435.57	739	1731.7	6.08	6.61	7.46	0.26	-1.32	-0.28
IDEQ	8-Jun-94	262	1120	1578.7	5.57	7.02	7.36	-0.27	-0.76	-0.39
IDEQ	24-Jun-94	155.53	1410	1179.8	5.05	7.25	7.07	-0.59	-0.33	-0.67
IDEQ	23-Jul-94	86.25	1750	812.0	4.46	7.47	6.70	-0.80	0.18	-0.92
IDEQ	16-Aug-94	69.4	2160	806.5	4.24	7.68	6.69	-0.85	0.78	-0.93
IDEQ	9-Sep-94	62.45	2420	813.1	4.13	7.79	6.70	-0.87	1.17	-0.92
IDEQ	5-Oct-94	54.98	2450	724.7	4.01	7.80	6.59	-0.89	1.21	-0.98
IDEQ	16-Nov-94	96.4	2600	1348.4	4.57	7.86	7.21	-0.77	1.44	-0.55
IDEQ	14-Dec-94	113.97	2580	1581.9	4.74	7.86	7.37	-0.71	1.41	-0.39
IDEQ	11-Jan-95	466.16	1540	3862.2	6.14	7.34	8.26	0.35	-0.14	1.19
IDEQ	9-Feb-95	526.86	1190	3373.1	6.27	7.08	8.12	0.54	-0.65	0.85
IDEQ	8-Mar-95	386.4	1330	2764.8	5.96	7.19	7.92	0.11	-0.45	0.43
IDEQ	23-Mar-95	1170.56	1180	7431.2	7.07	7.07	8.91	2.49	-0.67	3.66
IDEQ	14-Apr-95	603.44	1300	4220.5	6.40	7.17	8.35	0.77	-0.49	1.44
IDEQ	27-Apr-95	498.21	1190	3189.6	6.21	7.08	8.07	0.45	-0.65	0.72
IDEQ	11-May-95	1088.15	745	4361.4	6.99	6.61	8.38	2.24	-1.31	1.54
IDEQ	24-May-95	772.69	749	3113.6	6.65	6.62	8.04	1.28	-1.31	0.67
IDEQ	13-Jun-95	448.51	918	2215.1	6.11	6.82	7.70	0.30	-1.06	0.05
IDEQ	28-Jun-95	280.46	1250	1886.1	5.64	7.13	7.54	-0.21	-0.57	-0.18
IDEQ	12-Jul-95	196.51	1590	1681.0	5.28	7.37	7.43	-0.46	-0.06	-0.32
IDEQ	26-Jul-95	145.29	1930	1508.6	4.98	7.57	7.32	-0.62	0.44	-0.44
IDEQ	15-Aug-95	135.53	2010	1465.6	4.91	7.61	7.29	-0.65	0.56	-0.47
IDEQ	14-Sep-95	86.25	2310	1071.9	4.46	7.75	6.98	-0.80	1.01	-0.74
URS	4-Nov-97	183	2110	2077.4	5.21	7.65	7.64	-0.50	0.71	-0.05
IDEQ	24-Apr-98	779.1	831	3483.2	6.66	6.72	8.16	1.30	-1.19	0.93
URS	11-May-98	1230	559	3699.1	7.11	6.33	8.22	2.67	-1.59	1.08
IDEQ	29-May-98	577.1	667	2070.9	6.36	6.50	7.64	0.69	-1.43	-0.05
IDEQ	29-Sep-98	68.2	2220	814.6	4.22	7.71	6.70	-0.85	0.87	-0.92
IDEQ	8-Oct-98	70.6	2190	831.8	4.26	7.69	6.72	-0.85	0.83	-0.91
IDEQ	24-Nov-98	139.4	2450	1837.4	4.94	7.80	7.52	-0.64	1.21	-0.21
IDEQ	4-Jan-99	159.8	1580	1358.4	5.07	7.37	7.21	-0.58	-0.08	-0.54
IDEQ	14-Jan-99	614.2	1590	5254.0	6.42	7.37	8.57	0.80	-0.06	2.15
IDEQ	9-Mar-99	201.5	1640	1777.9	5.31	7.40	7.48	-0.45	0.01	-0.25

tZn

Concentration over time analysis

	tZn	SF270		r2	Slope, m
	LnConc.=mTime+b All data r2, m:			**0.000**	**-0.00002**
	Time	**Ln[COC]**	**[COC]**		
first:	29-Oct-93	7.28	1,451		
mid:	9-Feb-95	7.27	1,440		
last:	9-Mar-99	7.25	1,405		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Mar-99	0.00	1		

Load over time analysis

	tZn	SF270			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.039**	**0.00021**
	Time	**LnLoad**	**Load**		
first:	29-Oct-93	7.32	1,506		
mid:	9-Feb-95	7.42	1,663		
last:	9-Mar-99	7.73	2,282		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Mar-99	0.00	1		

max r2: #DIV/0!

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points; delete last 4 rows		
0.000	-0.00002	7.83
0.000	0.00000	7.15
0.001	0.00002	6.48
0.002	0.00005	5.60
0.006	0.00007	4.62
0.010	0.00009	3.90
0.015	0.00012	3.10
0.023	0.00015	1.99
0.025	0.00016	1.73
0.028	0.00017	1.34
0.004	0.00005	5.64
0.001	0.00002	6.57
0.001	-0.00002	7.83
0.006	-0.00005	9.20
0.011	-0.00007	9.85
0.012	-0.00008	10.08
0.010	-0.00007	9.86
0.005	-0.00005	9.11
0.001	-0.00002	7.98
0.001	0.00002	6.67
0.007	0.00006	5.07
0.026	0.00011	3.28
0.032	0.00013	2.71
0.029	0.00012	2.83
0.030	0.00013	2.62
0.026	0.00012	2.80
0.026	0.00013	2.66
0.022	0.00012	2.86
0.004	0.00005	5.35
0.002	-0.00004	8.67
0.025	-0.00013	11.96
0.049	-0.00020	14.38
0.057	-0.00024	15.82
0.040	-0.00023	15.59
0.014	-0.00018	13.64
0.122	0.00124	-37.40
0.566	0.00354	-120.55
0.517	0.00371	-126.52
0.275	0.00247	-81.85
0.616	-0.00251	98.29
0.567	-0.00272	105.77
0.501	-0.00348	133.43
1.000	0.00058	-13.59
1.000	0.00057	-13.37
#DIV/0!	#DIV/0!	#DIV/0!

max r2: #DIV/0!

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points; delete last 4 rows		
0.039	0.00021	0.04
0.032	0.00019	0.77
0.025	0.00017	1.59
0.019	0.00015	2.30
0.014	0.00013	2.96
0.012	0.00012	3.32
0.010	0.00011	3.61
0.006	0.00009	4.50
0.008	0.00010	4.05
0.010	0.00011	3.63
0.000	0.00001	7.31
0.002	0.00005	5.93
0.008	0.00009	4.54
0.007	0.00008	4.63
0.006	0.00008	4.91
0.002	0.00005	5.87
0.000	0.00000	7.77
0.004	-0.00006	9.91
0.019	-0.00013	12.31
0.055	-0.00021	15.30
0.081	-0.00026	16.99
0.106	-0.00030	18.45
0.088	-0.00028	17.56
0.075	-0.00026	16.92
0.069	-0.00026	16.78
0.031	-0.00016	13.18
0.011	-0.00009	10.93
0.003	-0.00005	9.28
0.004	0.00005	5.65
0.024	0.00014	2.66
0.042	0.00019	0.72
0.054	0.00023	-0.86
0.059	0.00027	-2.23
0.052	0.00030	-3.18
0.040	0.00034	-4.80
0.037	-0.00078	35.65
0.056	-0.00131	54.90
0.007	-0.00051	25.75
0.065	0.00174	-55.34
0.401	0.00701	-246.04
0.252	0.00594	-207.18
0.001	0.00044	-8.40
0.035	-0.00390	149.01
1.000	-0.02007	734.44
#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

tZn
LN Analysis

Load

Avg:	**2,143**
SD:	**1,445**
CV:	**0.67**
Min:	**212.1**
Max:	**7,431**
Median:	**1,681**

SF270
tZn

Load Data, EV=2140 lbs/day CV=0.674

Load Data-based LN

u	ln tZn Load	tZn Load
3	9.3	11147
0	7.48	1777
-3	5.65	283.2

2,143	2140
0.67	0.674

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.96, EV=2220lbs/day CV=0.808; max r2=0.99**

r2 u,lnLoad:	0.960
slope, m:	1.411
intercept, b:	-10.523
N:	45
E[Load]:	2224.1
SD[Load]:	1796
CV[Load]:	0.81

Parameter Estimates from LN regression
update graph label

u	lnLoad	Load
3	9.58	14497
0	7.46	1730
-3	5.33	206.5

0.960	0.96
2224.1	2220
0.8	0.808

max r2
#DIV/0!

N: 45

Date	tZn Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
6-Apr-94	**212.1**	1	0.0138	-2.203	5.357	0.960
5-Oct-94	**724.7**	2	0.0359	-1.800	6.586	0.975
16-Aug-94	**806.5**	3	0.0580	-1.572	6.693	0.980
23-Jul-94	**812.0**	4	0.0801	-1.404	6.700	0.984
9-Sep-94	**813.1**	5	0.1022	-1.269	6.701	0.986
29-Sep-98	**814.6**	6	0.1243	-1.154	6.703	0.987
8-Oct-98	**831.8**	7	0.1464	-1.052	6.724	0.986
1-Dec-93	**858.8**	8	0.1685	-0.960	6.755	0.985
29-Oct-93	**884.9**	9	0.1906	-0.876	6.785	0.984
21-Dec-93	**970.8**	10	0.2127	-0.797	6.878	0.983
17-Feb-94	**995.6**	11	0.2348	-0.723	6.903	0.982
21-Dec-93	**1049.8**	12	0.2569	-0.653	6.956	0.981
14-Sep-95	**1071.9**	13	0.2790	-0.586	6.977	0.979
24-Jun-94	**1179.8**	14	0.3011	-0.521	7.073	0.978
21-Jan-94	**1332.6**	15	0.3232	-0.459	7.195	0.977
16-Nov-94	**1348.4**	16	0.3453	-0.398	7.207	0.976
4-Jan-99	**1358.4**	17	0.3674	-0.339	7.214	0.974
21-Jan-94	**1417.5**	18	0.3895	-0.281	7.257	0.972
15-Aug-95	**1465.6**	19	0.4116	-0.223	7.290	0.970
26-Jul-95	**1508.6**	20	0.4337	-0.167	7.319	0.968
8-Jun-94	**1578.7**	21	0.4558	-0.111	7.364	0.965
14-Dec-94	**1581.9**	22	0.4779	-0.055	7.366	0.963
12-Jul-95	**1681.0**	23	0.5000	0.000	7.427	0.960
20-May-94	**1731.7**	24	0.5221	0.055	7.457	0.956
9-Mar-99	**1777.9**	25	0.5442	0.111	7.483	0.953
24-Nov-98	**1837.4**	26	0.5663	0.167	7.516	0.949
28-Jun-95	**1886.1**	27	0.5884	0.223	7.542	0.946
29-May-98	**2070.9**	28	0.6105	0.281	7.636	0.944
4-Nov-97	**2077.4**	29	0.6326	0.339	7.639	0.939
13-Jun-95	**2215.1**	30	0.6547	0.398	7.703	0.937
23-Mar-94	**2273.6**	31	0.6768	0.459	7.729	0.934
7-Mar-94	**2358.9**	32	0.6989	0.521	7.766	0.938
8-Mar-95	**2764.8**	33	0.7210	0.586	7.925	0.954
24-May-95	**3113.6**	34	0.7431	0.653	8.044	0.951
27-Apr-95	**3189.6**	35	0.7652	0.723	8.068	0.945
9-Feb-95	**3373.1**	36	0.7873	0.797	8.124	0.936
24-Apr-98	**3483.2**	37	0.8094	0.876	8.156	0.929
11-May-98	**3699.1**	38	0.8315	0.960	8.216	0.919
11-Jan-95	**3862.2**	39	0.8536	1.052	8.259	0.918
3-May-94	**3928.0**	40	0.8757	1.154	8.276	0.926
14-Apr-95	**4220.5**	41	0.8978	1.269	8.348	0.928
18-Apr-94	**4223.7**	42	0.9199	1.404	8.348	0.973
11-May-95	**4361.4**	43	0.9420	1.572	8.381	1.000
14-Jan-99	**5254.0**	44	0.9641	1.800	8.567	1.000
23-Mar-95	**7431.2**	45	0.9862	2.203	8.913	#DIV/0!

		update for EV, CV:			
tZn		SF270		1,631	1630
LN Analysis		tZn		0.41	0.414
Concentration		Conc. Data, EV=1630 ug/L CV=0.414			
Avg:	1,631	Data-based LN			
SD:	675	u	ln[tZn]	[tZn]	
CV:	0.41	3	8.5	4967	
Min:	100	0	7.32	1507	
Max:	2,600	-3	6.13	458	
Median:	1,590				

					0.796	0.796
u=mLn(Conc.)+b:					1817.3	1820
update for r2, EV, CV:	r2=0.796, EV=1820 ug/L CV=0.777; max r2=0.99				0.777	0.777
	r2 u,lnConc:	0.796	u	lnConc.	Conc.	
	slope, m:	1.456	3	9.33	11272	
	intercept, b:	-10.581	0	7.27	1435	
	N:	45	-3	5.21	183	
	E[Conc]:	1817.3	Parameter Estimates			
	SD[Conc]:	1411	from LN regression			
	CV[Conc]:	0.78	update graph label			

	tZn	N: 45				max r2 #DIV/0!
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
6-Apr-94	100	1	0.0138	-2.203	4.605	0.796
11-May-98	559	2	0.0359	-1.800	6.326	0.911
29-May-98	667	3	0.0580	-1.572	6.503	0.903
3-May-94	723	4	0.0801	-1.404	6.583	0.894
20-May-94	739	5	0.1022	-1.269	6.605	0.885
11-May-95	745	6	0.1243	-1.154	6.613	0.876
24-May-95	749	7	0.1464	-1.052	6.619	0.870
18-Apr-94	820	8	0.1685	-0.960	6.709	0.869
24-Apr-98	831	9	0.1906	-0.876	6.723	0.867
13-Jun-95	918	10	0.2127	-0.797	6.822	0.873
8-Jun-94	1120	11	0.2348	-0.723	7.021	0.877
23-Mar-95	1180	12	0.2569	-0.653	7.073	0.869
9-Feb-95	1190	13	0.2790	-0.586	7.082	0.860
27-Apr-95	1190	14	0.3011	-0.521	7.082	0.851
28-Jun-95	1250	15	0.3232	-0.459	7.131	0.845
14-Apr-95	1300	16	0.3453	-0.398	7.170	0.837
8-Mar-95	1330	17	0.3674	-0.339	7.193	0.828
7-Mar-94	1400	18	0.3895	-0.281	7.244	0.820
24-Jun-94	1410	19	0.4116	-0.223	7.251	0.810
23-Mar-94	1490	20	0.4337	-0.167	7.307	0.802
11-Jan-95	1540	21	0.4558	-0.111	7.340	0.791
4-Jan-99	1580	22	0.4779	-0.055	7.365	0.778
12-Jul-95	1590	23	0.5000	0.000	7.371	0.764
14-Jan-99	1590	24	0.5221	0.055	7.371	0.756
9-Mar-99	1640	25	0.5442	0.111	7.402	0.768
23-Jul-94	1750	26	0.5663	0.167	7.467	0.807
26-Jul-95	1930	27	0.5884	0.223	7.565	0.860
15-Aug-95	2010	28	0.6105	0.281	7.606	0.869
21-Jan-94	2110	29	0.6326	0.339	7.654	0.867
21-Jan-94	2110	30	0.6547	0.398	7.654	0.853
4-Nov-97	2110	31	0.6768	0.459	7.654	0.838
16-Aug-94	2160	32	0.6989	0.521	7.678	0.832
8-Oct-98	2190	33	0.7210	0.586	7.692	0.820
29-Sep-98	2220	34	0.7431	0.653	7.705	0.811
1-Dec-93	2300	35	0.7652	0.723	7.741	0.814
14-Sep-95	2310	36	0.7873	0.797	7.745	0.789
29-Oct-93	2370	37	0.8094	0.876	7.771	0.781
9-Sep-94	2420	38	0.8315	0.960	7.792	0.746
5-Oct-94	2450	39	0.8536	1.052	7.804	0.681
24-Nov-98	2450	40	0.8757	1.154	7.804	0.586
17-Feb-94	2490	41	0.8978	1.269	7.820	0.443
14-Dec-94	2580	42	0.9199	1.404	7.856	0.431
21-Dec-93	2600	43	0.9420	1.572	7.863	#DIV/0!
21-Dec-93	2600	44	0.9641	1.800	7.863	#DIV/0!
16-Nov-94	2600	45	0.9862	2.203	7.863	#DIV/0!

update for EV, CV:

tZn		SF270			349	349
LN Analysis		tZn			0.94	0.943
Discharge, Q		Q Data, EV=349 cfs CV=0.943				
Avg:	349	Q Data-based LN				
SD:	330	u	lnQ	Q		
CV:	0.94	3	7.9	2783		
Min:	55	0	5.54	254		
Max:	1,230	-3	3.14	23		
Median:	197					

					0.941	0.941
					376.0	376
u=mLn(Q)+b:					1.35	1.35
update for r2, EV, CV:	r2=0.941, EV=376 cfs CV=1.35; max r2=0.98					
	r2 u,lnQ:	0.941	u	lnQ	Q	
	slope, m:	0.983	3	8.46	4742	
	intercept, b:	-5.320	0	5.41	224	
	N:	45	-3	2.36	11	
	E[Q]:	376.0	Parameter Estimates			
	SD[Q]:	507	from LN regression			
	CV[Q]:	1.35	update graph label			

Date	Q Discharge cfs Ranked	N: 45 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 #DIV/0! r2 forward
update and rank for new data						
5-Oct-94	54.98	1	0.0138	-2.203	4.007	0.941
9-Sep-94	62.45	2	0.0359	-1.800	4.134	0.953
29-Sep-98	68.2	3	0.0580	-1.572	4.222	0.960
29-Oct-93	69.4	4	0.0801	-1.404	4.240	0.965
1-Dec-93	69.4	5	0.1022	-1.269	4.240	0.967
21-Dec-93	69.4	6	0.1243	-1.154	4.240	0.968
16-Aug-94	69.4	7	0.1464	-1.052	4.240	0.967
8-Oct-98	70.6	8	0.1685	-0.960	4.257	0.964
17-Feb-94	74.32	9	0.1906	-0.876	4.308	0.962
21-Dec-93	75.05	10	0.2127	-0.797	4.318	0.959
23-Jul-94	86.25	11	0.2348	-0.723	4.457	0.956
14-Sep-95	86.25	12	0.2569	-0.653	4.457	0.953
16-Nov-94	96.4	13	0.2790	-0.586	4.569	0.951
14-Dec-94	113.97	14	0.3011	-0.521	4.736	0.948
21-Jan-94	117.39	15	0.3232	-0.459	4.766	0.945
21-Jan-94	124.87	16	0.3453	-0.398	4.827	0.941
15-Aug-95	135.53	17	0.3674	-0.339	4.909	0.937
24-Nov-98	139.4	18	0.3895	-0.281	4.937	0.933
26-Jul-95	145.29	19	0.4116	-0.223	4.979	0.929
24-Jun-94	155.53	20	0.4337	-0.167	5.047	0.926
4-Jan-99	159.8	21	0.4558	-0.111	5.074	0.924
4-Nov-97	183	22	0.4779	-0.055	5.209	0.926
12-Jul-95	196.51	23	0.5000	0.000	5.281	0.925
9-Mar-99	201.5	24	0.5221	0.055	5.306	0.927
8-Jun-94	262	25	0.5442	0.111	5.568	0.937
28-Jun-95	280.46	26	0.5663	0.167	5.636	0.934
23-Mar-94	283.62	27	0.5884	0.223	5.648	0.932
7-Mar-94	313.19	28	0.6105	0.281	5.747	0.935
8-Mar-95	386.4	29	0.6326	0.339	5.957	0.939
6-Apr-94	394.31	30	0.6547	0.398	5.977	0.932
20-May-94	435.57	31	0.6768	0.459	6.077	0.926
13-Jun-95	448.51	32	0.6989	0.521	6.106	0.916
11-Jan-95	466.16	33	0.7210	0.586	6.145	0.906
27-Apr-95	498.21	34	0.7431	0.653	6.211	0.894
9-Feb-95	526.86	35	0.7652	0.723	6.267	0.880
29-May-98	577.1	36	0.7873	0.797	6.358	0.863
14-Apr-95	603.44	37	0.8094	0.876	6.403	0.839
14-Jan-99	614.2	38	0.8315	0.960	6.420	0.812
24-May-95	772.69	39	0.8536	1.052	6.650	0.843
24-Apr-98	779.1	40	0.8757	1.154	6.658	0.801
18-Apr-94	957.4	41	0.8978	1.269	6.864	0.931
3-May-94	1009.84	42	0.9199	1.404	6.918	0.917
11-May-95	1088.15	43	0.9420	1.572	6.992	0.930
23-Mar-95	1170.56	44	0.9641	1.800	7.065	1.000
11-May-98	1230	45	0.9862	2.203	7.115	#DIV/0!

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF271	**Date:**	12-Jul-00
Chemical:	dCd	**Analyst:**	B.Walthall
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	35,046	627	9	21	0.00	0.00	0.00
SD:	869	675	6	23	1.00	1.00	1.00
CV:	0.02	1.08	0.70	1.09			
Min:	33,373	67	2	3.3	-0.83	-1.19	-0.77
Max:	36,410	4,190	60	220	5.28	8.15	8.65
Median:	34,968	363	8	18	-0.39	-0.13	-0.13

dCd	SF271		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.164)		update r2	0.16	0.164	r2:	0.000	0.006
r2 Q,[COC]:	0.16	[dCd]	Q		m:	0.0110	0.00009
slope, m:	0.0	11	67.0		b:	242	2.89
intercept, b:	11.3	9	627.4				
N: 108		-4	4190				
LnConc. = mLn(Q)+b (r2=0.492)		update r2	0.49	0.492			
r2 lnQ,ln[COC]:	0.49	ln[dCd]	ln Q	[dCd]	Q		
slope, m:	-0.39	2.71	4.20	15	67		
intercept, b:	4.34	1.85	6.44	6	627		
N: 108		1.11	8.34	3	4,190		

N= 108

	Sampling Date	Q Discharge	dCd Concentration	dCd Load	Ln Q	Ln dCd Conc.	Ln dCd Load	dCd SF271 Standardized Values = (x - Avg)/SD		for graph 0
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	1700	2.5	22.9	7.44	0.92	3.13	1.59	-1.03	0.08
MFG	16-May-91	1670	2.4	21.6	7.42	0.88	3.07	1.54	-1.05	0.02
MFG	17-May-91	1730	2.2	20.5	7.46	0.79	3.02	1.63	-1.08	-0.03
MFG	18-May-91	2770	1.6	23.8	7.93	0.47	3.17	3.17	-1.18	0.12
MFG	1-Oct-91	94	9.1	4.6	4.54	2.21	1.53	-0.79	0.02	-0.72
MFG	2-Oct-91	94	12	6.1	4.54	2.48	1.80	-0.79	0.48	-0.65
MFG	3-Oct-91	96	14	7.2	4.56	2.64	1.98	-0.79	0.80	-0.60
MFG	4-Oct-91	98	9	4.7	4.58	2.20	1.56	-0.78	0.00	-0.71
MFG	5-Oct-91	101	8.1	4.4	4.62	2.09	1.48	-0.78	-0.14	-0.72
IDEQ	18-Nov-92	85	12.42	5.7	4.44	2.52	1.74	-0.80	0.55	-0.67
IDEQ	21-Jan-93	139	20.05	15.0	4.93	3.00	2.71	-0.72	1.77	-0.26
IDEQ	23-Feb-93	115	15.28	9.5	4.74	2.73	2.25	-0.76	1.01	-0.50
IDEQ	23-Mar-93	1260	8.6	58.3	7.14	2.15	4.07	0.94	-0.06	1.62
IDEQ	5-Apr-93	1380	4.79	35.6	7.23	1.57	3.57	1.12	-0.67	0.63
IDEQ	20-Apr-93	1000	4.79	25.8	6.91	1.57	3.25	0.55	-0.67	0.20
IDEQ	3-May-93	1620	4.79	41.7	7.39	1.57	3.73	1.47	-0.67	0.90
IDEQ	19-May-93	1770	4.79	45.6	7.48	1.57	3.82	1.69	-0.67	1.07
IDEQ	2-Jun-93	886	5.74	27.4	6.79	1.75	3.31	0.38	-0.52	0.27
IDEQ	23-Jun-93	384	7.65	15.8	5.95	2.03	2.76	-0.36	-0.21	-0.23
IDEQ	21-Jul-93	375	11.47	23.1	5.93	2.44	3.14	-0.37	0.40	0.09
IDEQ	25-Aug-93	156	11.47	9.6	5.05	2.44	2.26	-0.70	0.40	-0.50
IDEQ	21-Sep-93	121	8.6	5.6	4.80	2.15	1.72	-0.75	-0.06	-0.67
IDEQ	29-Oct-93	100	8.8	4.7	4.61	2.17	1.55	-0.78	-0.03	-0.71
IDEQ	30-Nov-93	105	10	5.6	4.65	2.30	1.73	-0.77	0.16	-0.67
IDEQ	21-Dec-93	130	12.4	8.7	4.87	2.52	2.16	-0.74	0.55	-0.54
IDEQ	21-Jan-94	205	9.5	10.5	5.32	2.25	2.35	-0.63	0.08	-0.46
IDEQ	17-Feb-94	122	14	9.2	4.80	2.64	2.22	-0.75	0.80	-0.52
IDEQ	7-Mar-94	580	7.8	24.3	6.36	2.05	3.19	-0.07	-0.19	0.14
IDEQ	23-Mar-94	502	7.1	19.2	6.22	1.96	2.95	-0.19	-0.30	-0.08
IDEQ	6-Apr-94	632	6.3	21.4	6.45	1.84	3.06	0.01	-0.43	0.02
IDEQ	18-Apr-94	1310	2.7	19.0	7.18	0.99	2.95	1.01	-1.00	-0.09
IDEQ	3-May-94	612	5	16.5	6.42	1.61	2.80	-0.02	-0.63	-0.20
IDEQ	20-May-94	542	5.2	15.2	6.30	1.65	2.72	-0.13	-0.60	-0.26
IDEQ	8-Jun-94	346	6.7	12.5	5.85	1.90	2.52	-0.42	-0.36	-0.37
IDEQ	24-Jun-94	198	7.2	7.7	5.29	1.97	2.04	-0.64	-0.28	-0.58
IDEQ	23-Jul-94	116	7.2	4.5	4.75	1.97	1.50	-0.76	-0.28	-0.72
IDEQ	16-Aug-94	79	7.8	3.3	4.37	2.05	1.20	-0.81	-0.19	-0.77
IDEQ	5-Oct-94	67	11	4.0	4.20	2.40	1.38	-0.83	0.32	-0.74
IDEQ	16-Nov-94	139	18	13.5	4.93	2.89	2.60	-0.72	1.44	-0.33
IDEQ	14-Dec-94	217	17	19.8	5.38	2.83	2.99	-0.61	1.28	-0.05
IDEQ	10-Jan-95	827	10	44.5	6.72	2.30	3.80	0.30	0.16	1.02
IDEQ	9-Feb-95	780	7	29.4	6.66	1.95	3.38	0.23	-0.31	0.36
IDEQ	7-Mar-95	585	8.3	26.1	6.37	2.12	3.26	-0.06	-0.11	0.22
IDEQ	23-Mar-95	1330	7.9	56.5	7.19	2.07	4.03	1.04	-0.17	1.54
IDEQ	14-Apr-95	775	7.4	30.9	6.65	2.00	3.43	0.22	-0.25	0.43

IDEQ	27-Apr-95	685	6	22.1	6.53	1.79	3.10	0.09	-0.47	0.05
IDEQ	11-May-95	1260	4.6	31.2	7.14	1.53	3.44	0.94	-0.70	0.44
IDEQ	24-May-95	828	4.2	18.7	6.72	1.44	2.93	0.30	-0.76	-0.10
IDEQ	13-Jun-95	533	5.2	14.9	6.28	1.65	2.70	-0.14	-0.60	-0.27
IDEQ	28-Jun-95	395	5.8	12.3	5.98	1.76	2.51	-0.34	-0.51	-0.38
IDEQ	12-Jul-95	261	8.6	12.1	5.56	2.15	2.49	-0.54	-0.06	-0.39
IDEQ	26-Jul-95	189	10	10.2	5.24	2.30	2.32	-0.65	0.16	-0.47
IDEQ	15-Aug-95	159	10.2	8.7	5.07	2.32	2.17	-0.69	0.29	-0.54
IDEQ	14-Sep-95	130	8.5	5.9	4.87	2.14	1.78	-0.74	-0.08	-0.66
IDEQ	8-Oct-95	190	11.47	11.7	5.25	2.44	2.46	-0.65	0.40	-0.41
IDEQ	7-Nov-95	233	6.98	8.7	5.45	1.94	2.17	-0.58	-0.32	-0.54
IDEQ	27-Dec-95	492	8.41	22.3	6.20	2.13	3.10	-0.20	-0.09	0.05
IDEQ	18-Jan-96	1200	8.22	53.1	7.09	2.11	3.97	0.85	-0.12	1.39
IDEQ	28-Feb-96	880	7.74	36.6	6.78	2.05	3.60	0.37	-0.20	0.68
IDEQ	27-Mar-96	290	6.22	9.7	5.67	1.83	2.27	-0.50	-0.44	-0.49
IDEQ	18-Apr-96	1320	4.98	35.4	7.19	1.61	3.57	1.03	-0.64	0.62
IDEQ	9-May-96	641	6.6	22.8	6.46	1.89	3.13	0.02	-0.38	0.07
IDEQ	20-Jun-96	510	5.55	15.2	6.23	1.71	2.72	-0.17	-0.55	-0.25
IDEQ	23-Jul-96	212	8.41	9.6	5.36	2.13	2.26	-0.62	-0.09	-0.50
IDEQ	21-Aug-96	142	10.51	8.0	4.96	2.35	2.08	-0.72	0.25	-0.57
IDEQ	26-Sep-96	109	9.56	5.6	4.69	2.26	1.72	-0.77	0.09	-0.67
IDEQ	29-Oct-96	260	15	21.0	5.56	2.71	3.04	-0.54	0.96	0.00
IDEQ	26-Nov-96	184	18	17.8	5.21	2.89	2.88	-0.66	1.44	-0.14
IDEQ	17-Dec-96	261	17	23.9	5.56	2.83	3.17	-0.54	1.28	0.12
IDEQ	27-Mar-97	1860	5.8	58.0	7.53	1.76	4.06	1.23	-0.51	1.61
IDEQ	17-Apr-97	1500	4.2	33.9	7.31	1.44	3.52	1.29	-0.76	0.56
IDEQ	25-Jun-97	682	60	220.1	6.53	4.09	5.39	0.08	2.15	2.65
IDEQ	24-Jul-97	312	6.5	10.9	5.74	1.87	2.39	-0.47	-0.39	-0.44
IDEQ	14-Aug-97	199	7.9	8.5	5.29	2.07	2.14	-0.63	-0.17	-0.55
IDEQ	4-Sep-97	159	11	9.4	5.07	2.40	2.24	-0.69	0.32	-0.51
IDEQ	17-Oct-97	141	11	8.3	4.95	2.40	2.12	-0.72	0.32	-0.55
URS	4-Nov-97	248	9.83	13.1	5.51	2.29	2.57	-0.56	0.14	-0.35
IDEQ	25-Nov-97	349	6.8	12.8	5.86	1.92	2.55	-0.41	-0.35	-0.36
IDEQ	18-Dec-97	351	10	18.9	5.86	2.30	2.94	-0.41	0.16	-0.09
IDEQ	23-Jan-98	264	13	18.5	5.58	2.56	2.92	-0.54	0.64	-0.11
IDEQ	26-Feb-98	384	10	20.7	5.95	2.30	3.03	-0.36	0.16	-0.02
IDEQ	19-Mar-98	676	7.4	26.9	6.52	2.00	3.29	0.07	-0.25	0.25
IDEQ	24-Apr-98	2020	4.1	44.6	7.61	1.41	3.80	2.06	-0.78	1.02
URS	11-May-98	1530	3.1	25.5	7.33	1.13	3.24	1.34	-0.94	0.19
IDEQ	29-May-98	1350	5.4	39.2	7.21	1.69	3.67	1.07	-0.57	0.79
IDEQ	27-Jul-98	161	9	7.8	5.08	2.20	2.05	-0.69	0.00	-0.58
IDEQ	25-Aug-98	120	11	7.1	4.79	2.40	1.96	-0.75	0.32	-0.61
IDEQ	23-Sep-98	102	14	7.7	4.62	2.64	2.04	-0.78	0.80	-0.58
USGS	26-Oct-98	98	11	5.8	4.58	2.40	1.76	-0.78	0.32	-0.66
IDEQ	27-Oct-98	88	13	6.2	4.48	2.56	1.82	-0.80	0.64	-0.65
USGS	17-Nov-98	162	15	13.1	5.09	2.71	2.57	-0.69	0.96	-0.35
IDEQ	24-Nov-98	297	17	27.2	5.69	2.83	3.30	-0.49	1.28	0.26
USGS	9-Dec-98	275	13	19.2	5.62	2.56	2.96	-0.52	0.64	-0.08
USGS	30-Dec-98	1180	4.9	31.1	7.07	1.59	3.44	0.82	-0.65	0.44
IDEQ	4-Jan-99	385	9.4	19.5	5.95	2.24	2.97	-0.36	0.07	-0.07
IDEQ	14-Jan-99	689	8.1	30.0	6.54	2.09	3.40	0.09	-0.14	0.39
USGS	8-Feb-99	527	11	31.2	6.27	2.40	3.44	-0.15	0.32	0.44
IDEQ	22-Feb-99	295	10	15.9	5.69	2.30	2.76	-0.49	0.16	-0.23
USGS	9-Mar-99	452	8.7	21.2	6.11	2.16	3.05	-0.26	-0.04	0.00
USGS	9-Mar-99	446	8.7	20.9	6.10	2.16	3.04	-0.27	-0.04	-0.01
USGS	13-Apr-99	610	6.2	20.3	6.41	1.82	3.01	-0.03	-0.44	-0.03
USGS	20-Apr-99	2180	3	35.2	7.69	1.10	3.56	2.30	-0.95	0.61
USGS	6-May-99	1130	3.8	23.1	7.03	1.34	3.14	0.74	-0.83	0.09
USGS	25-May-99	4190	1.5	33.8	8.34	0.41	3.52	5.28	-1.19	0.55
USGS	2-Jun-99	2160	2.1	24.4	7.68	0.74	3.19	2.27	-1.10	0.14
USGS	15-Jul-99	508	4.2	11.5	6.23	1.44	2.44	-0.18	-0.76	-0.42
USGS	9-Aug-99	237	7.4	9.4	5.47	2.00	2.24	-0.58	-0.25	-0.51
USGS	7-Sep-99	140	7.5	5.6	4.94	2.01	1.73	-0.72	-0.23	-0.67

dCd

Concentration over time analysis

	dCd	SF271		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.006**	**0.00005**
	Time	**Ln[COC]**	**[COC]**		
first:	15-May-91	1.95	7		
mid:	26-Sep-95	2.04	8		
last:	7-Sep-99	2.11	8		
	LnConc.=mTime+b >'96 r2, m:			**0.032**	**-0.00021**
	28-Jun-95	2.27	10		
	7-Sep-99	1.94	7		

Load over time analysis

	dCd	SF271			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.027**	**0.00014**
	Time	**LnLoad**	**Load**		
first:	15-May-91	2.53	12		
mid:	26-Sep-95	2.75	16		
last:	7-Sep-99	2.95	19		
	LnLoad=mTime+b >'96 r2, m:			**0.009**	**0.00014**
	28-Jun-95	2.71	15		
	7-Sep-99	2.92	19		

max r2: 0.938 — **Forward time Regression on Ln Concentration(t)**

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.006	0.00005	0.24
0.002	0.00003	1.03
0.000	0.00000	1.93
0.002	-0.00003	2.98
0.012	-0.00007	4.43
0.011	-0.00007	4.42
0.009	-0.00006	4.16
0.005	-0.00005	3.73
0.005	-0.00005	3.69
0.005	-0.00005	3.75
0.003	-0.00004	3.44
0.001	-0.00002	2.72
0.000	0.00000	2.19
0.000	0.00000	2.11
0.000	-0.00001	2.54
0.001	-0.00003	2.99
0.003	-0.00004	3.47
0.006	-0.00005	3.99
0.008	-0.00006	4.36
0.008	-0.00007	4.48
0.006	-0.00006	4.20
0.005	-0.00005	3.90
0.004	-0.00005	3.87
0.004	-0.00005	3.82
0.003	-0.00004	3.63
0.002	-0.00003	3.19
0.001	-0.00003	3.02
0.000	-0.00001	2.39
0.000	-0.00001	2.40
0.000	-0.00001	2.52
0.001	-0.00002	2.80
0.005	-0.00006	4.20
0.008	-0.00008	4.90
0.013	-0.00010	5.60
0.015	-0.00011	6.00
0.017	-0.00012	6.32
0.019	-0.00013	6.68
0.020	-0.00014	6.93
0.017	-0.00013	6.64
0.010	-0.00010	5.54
0.005	-0.00007	4.44
0.003	-0.00006	4.13
0.004	-0.00007	4.40
0.004	-0.00007	4.40
0.004	-0.00007	4.49

max r2: 0.979 — **Forward time Regression on Ln Load(t)**

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.027	0.00014	-2.10
0.031	0.00015	-2.56
0.036	0.00016	-3.02
0.040	0.00018	-3.47
0.046	0.00020	-4.12
0.036	0.00017	-3.35
0.029	0.00016	-2.74
0.023	0.00014	-2.25
0.015	0.00012	-1.27
0.008	0.00008	-0.10
0.004	0.00006	0.69
0.004	0.00006	0.71
0.002	0.00005	1.12
0.007	0.00008	0.02
0.010	0.00010	-0.72
0.013	0.00011	-1.22
0.020	0.00014	-2.20
0.030	0.00017	-3.33
0.036	0.00019	-4.05
0.037	0.00020	-4.27
0.043	0.00022	-4.89
0.039	0.00021	-4.63
0.030	0.00019	-3.79
0.021	0.00016	-2.71
0.015	0.00013	-1.76
0.011	0.00011	-1.21
0.009	0.00010	-0.83
0.006	0.00009	-0.27
0.008	0.00010	-0.80
0.009	0.00011	-1.09
0.011	0.00012	-1.54
0.013	0.00013	-1.87
0.013	0.00014	-2.03
0.013	0.00014	-2.09
0.011	0.00013	-1.88
0.007	0.00011	-0.92
0.002	0.00005	0.95
0.000	-0.00002	3.46
0.005	-0.00008	5.84
0.006	-0.00010	6.43
0.006	-0.00010	6.42
0.002	-0.00006	5.06
0.001	-0.00004	4.29
0.000	-0.00002	3.67
0.001	0.00004	1.56

0.005	-0.00007	4.70	0.003	0.00007	0.40
0.007	-0.00009	5.36	0.004	0.00009	-0.22
0.013	-0.00013	6.64	0.008	0.00012	-1.63
0.023	-0.00017	8.27	0.009	0.00014	-2.09
0.032	-0.00021	9.59	0.009	0.00014	-2.08
0.042	-0.00024	10.82	0.007	0.00012	-1.59
0.043	-0.00025	11.20	0.005	0.00011	-0.99
0.040	-0.00026	11.22	0.002	0.00007	0.18
0.037	-0.00025	11.16	0.000	0.00002	1.97
0.039	-0.00027	11.63	0.002	-0.00006	5.19
0.033	-0.00025	11.18	0.004	-0.00011	6.71
0.039	-0.00029	12.34	0.011	-0.00018	9.46
0.041	-0.00030	12.93	0.010	-0.00018	9.24
0.043	-0.00032	13.69	0.002	-0.00008	5.69
0.047	-0.00035	14.75	0.000	-0.00001	3.06
0.060	-0.00041	16.85	0.001	-0.00007	5.53
0.085	-0.00051	20.32	0.000	0.00001	2.65
0.103	-0.00058	23.08	0.000	0.00004	1.32
0.134	-0.00070	27.10	0.000	0.00003	1.83
0.146	-0.00076	29.51	0.001	-0.00006	5.00
0.147	-0.00080	30.98	0.007	-0.00020	9.93
0.154	-0.00086	33.20	0.031	-0.00042	18.19
0.135	-0.00085	32.59	0.031	-0.00045	19.07
0.107	-0.00078	30.23	0.036	-0.00051	21.34
0.079	-0.00071	27.52	0.033	-0.00052	21.67
0.104	-0.00085	32.81	0.011	-0.00032	14.24
0.163	-0.00112	42.30	0.004	-0.00019	9.71
0.087	-0.00073	28.41	0.026	0.00042	-12.41
0.107	-0.00085	32.71	0.017	0.00036	-10.29
0.116	-0.00094	35.86	0.006	0.00021	-4.87
0.103	-0.00094	35.76	0.000	0.00005	0.85
0.090	-0.00092	35.16	0.003	-0.00018	9.24
0.083	-0.00093	35.68	0.009	-0.00031	13.93
0.100	-0.00110	41.65	0.019	-0.00049	20.40
0.091	-0.00112	42.62	0.020	-0.00053	22.17
0.065	-0.00101	38.29	0.022	-0.00060	24.52
0.053	-0.00098	37.20	0.020	-0.00061	24.94
0.058	-0.00111	42.07	0.009	-0.00045	19.22
0.114	-0.00166	61.89	0.000	0.00010	-0.97
0.260	-0.00264	97.42	0.008	0.00046	-13.90
0.384	-0.00354	129.99	0.062	0.00139	-47.65
0.417	-0.00399	146.35	0.030	0.00101	-33.79
0.418	-0.00427	156.74	0.004	0.00040	-11.73
0.386	-0.00428	157.03	0.002	-0.00029	13.44
0.371	-0.00438	160.61	0.051	-0.00132	50.92
0.334	-0.00433	158.96	0.248	-0.00272	101.67
0.279	-0.00402	147.40	0.391	-0.00357	132.32
0.199	-0.00337	123.81	0.384	-0.00377	139.67
0.133	-0.00279	102.98	0.461	-0.00446	164.89
0.173	-0.00342	125.84	0.430	-0.00450	166.22
0.130	-0.00315	116.14	0.512	-0.00537	197.95
0.099	-0.00300	110.41	0.488	-0.00566	208.25
0.038	-0.00191	70.83	0.440	-0.00564	207.42
0.002	-0.00045	17.87	0.588	-0.00717	263.10
0.018	0.00138	-48.50	0.652	-0.00832	305.08
0.233	0.00529	-190.69	0.803	-0.01086	397.33
0.551	0.00863	-312.14	0.921	-0.01296	473.85
0.629	0.01071	-388.02	0.903	-0.01340	489.68
0.938	0.01586	-575.39	0.979	-0.01610	587.90

update for EV, CV:

dCd		**SF271**		
LN Analysis		**dCd**		
Load		**Load Data, EV=21.1 lbs/day CV=1.09**		
Avg:	**21**	**Load Data-based LN**		
SD:	**23**	u	ln dCd Load	dCd Load
CV:	**1.09**	3	5.3	203
Min:	**3.3**	0	2.65	14
Max:	**220**	-3	0.00	1.0
Median:	**18**			
		21	21.1	
		1.09	1.09	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.976, EV=20.9lbs/day CV=0.873; max r2=0.98**

r2 u,lnLoad:	0.976	u	lnLoad	Load		
slope, m:	1.328	3	5.02	151		
intercept, b:	-3.661	0	2.76	16		
N:	108	-3	0.50	1.6		
E[Load]:	20.9	Parameter Estimates			0.976	0.976
SD[Load]:	18	from LN regression			20.9	20.9
CV[Load]:	0.87	update graph label			0.9	0.873
					max r2	
	dCd	**N: 108**			0.977	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
16-Aug-94	**3.3**	1	0.0058	-2.526	1.199	0.976
5-Oct-94	**4.0**	2	0.0150	-2.170	1.378	0.976
5-Oct-91	**4.4**	3	0.0242	-1.973	1.482	0.976
23-Jul-94	**4.5**	4	0.0335	-1.832	1.503	0.977
1-Oct-91	**4.6**	5	0.0427	-1.720	1.527	0.976
29-Oct-93	**4.7**	6	0.0520	-1.626	1.555	0.975
4-Oct-91	**4.7**	7	0.0612	-1.545	1.557	0.975
21-Sep-93	**5.6**	8	0.0704	-1.473	1.722	0.974
26-Sep-96	**5.6**	9	0.0797	-1.407	1.724	0.973
7-Sep-99	**5.6**	10	0.0889	-1.347	1.731	0.972
30-Nov-93	**5.6**	11	0.0982	-1.292	1.731	0.972
18-Nov-92	**5.7**	12	0.1074	-1.241	1.737	0.971
26-Oct-98	**5.8**	13	0.1166	-1.192	1.758	0.970
14-Sep-95	**5.9**	14	0.1259	-1.146	1.783	0.969
2-Oct-91	**6.1**	15	0.1351	-1.103	1.803	0.968
27-Oct-98	**6.2**	16	0.1443	-1.061	1.817	0.967
25-Aug-98	**7.1**	17	0.1536	-1.021	1.960	0.966
3-Oct-91	**7.2**	18	0.1628	-0.983	1.978	0.965
24-Jun-94	**7.7**	19	0.1721	-0.946	2.037	0.964
23-Sep-98	**7.7**	20	0.1813	-0.910	2.039	0.963
27-Jul-98	**7.8**	21	0.1905	-0.876	2.054	0.962
21-Aug-96	**8.0**	22	0.1998	-0.842	2.083	0.961
17-Oct-97	**8.3**	23	0.2090	-0.810	2.122	0.960
14-Aug-97	**8.5**	24	0.2182	-0.778	2.135	0.959
21-Dec-93	**8.7**	25	0.2275	-0.747	2.160	0.958
15-Aug-95	**8.7**	26	0.2367	-0.717	2.166	0.957
7-Nov-95	**8.7**	27	0.2460	-0.687	2.169	0.955
17-Feb-94	**9.2**	28	0.2552	-0.658	2.218	0.954
4-Sep-97	**9.4**	29	0.2644	-0.630	2.242	0.953
9-Aug-99	**9.4**	30	0.2737	-0.602	2.244	0.951
23-Feb-93	**9.5**	31	0.2829	-0.574	2.246	0.950
23-Jul-96	**9.6**	32	0.2921	-0.547	2.261	0.949
25-Aug-93	**9.6**	33	0.3014	-0.520	2.265	0.948
27-Mar-96	**9.7**	34	0.3106	-0.494	2.273	0.947
26-Jul-95	**10.2**	35	0.3199	-0.468	2.319	0.946
21-Jan-94	**10.5**	36	0.3291	-0.442	2.349	0.944
24-Jul-97	**10.9**	37	0.3383	-0.417	2.390	0.943
15-Jul-99	**11.5**	38	0.3476	-0.392	2.440	0.942
8-Oct-95	**11.7**	39	0.3568	-0.367	2.462	0.940
12-Jul-95	**12.1**	40	0.3661	-0.342	2.491	0.938
28-Jun-95	**12.3**	41	0.3753	-0.318	2.512	0.937
8-Jun-94	**12.5**	42	0.3845	-0.294	2.523	0.935
25-Nov-97	**12.8**	43	0.3938	-0.270	2.547	0.933
17-Nov-98	**13.1**	44	0.4030	-0.246	2.571	0.931
4-Nov-97	**13.1**	45	0.4122	-0.222	2.574	0.929

16-Nov-94	13.5	46	0.4215	-0.198	2.600	0.926
13-Jun-95	14.9	47	0.4307	-0.175	2.702	0.924
21-Jan-93	15.0	48	0.4400	-0.151	2.708	0.922
20-May-94	15.2	49	0.4492	-0.128	2.719	0.920
20-Jun-96	15.2	50	0.4584	-0.104	2.723	0.917
23-Jun-93	15.8	51	0.4677	-0.081	2.760	0.915
22-Feb-99	15.9	52	0.4769	-0.058	2.764	0.912
3-May-94	16.5	53	0.4861	-0.035	2.801	0.909
26-Nov-96	17.8	54	0.4954	-0.012	2.880	0.907
23-Jan-98	18.5	55	0.5046	0.012	2.916	0.905
24-May-95	18.7	56	0.5139	0.035	2.929	0.904
18-Dec-97	18.9	57	0.5231	0.058	2.938	0.903
18-Apr-94	19.0	58	0.5323	0.081	2.946	0.902
23-Mar-94	19.2	59	0.5416	0.104	2.954	0.901
9-Dec-98	19.2	60	0.5508	0.128	2.957	0.900
4-Jan-99	19.5	61	0.5600	0.151	2.969	0.898
14-Dec-94	19.8	62	0.5693	0.175	2.988	0.897
13-Apr-99	20.3	63	0.5785	0.198	3.013	0.895
17-May-91	20.5	64	0.5878	0.222	3.019	0.895
26-Feb-98	20.7	65	0.5970	0.246	3.028	0.893
9-Mar-99	20.9	66	0.6062	0.270	3.039	0.892
29-Oct-96	21.0	67	0.6155	0.294	3.044	0.891
9-Mar-99	21.2	68	0.6247	0.318	3.052	0.889
6-Apr-94	21.4	69	0.6339	0.342	3.064	0.887
16-May-91	21.6	70	0.6432	0.367	3.071	0.885
27-Apr-95	22.1	71	0.6524	0.392	3.096	0.883
27-Dec-95	22.3	72	0.6617	0.417	3.103	0.881
9-May-96	22.8	73	0.6709	0.442	3.125	0.879
15-May-91	22.9	74	0.6801	0.468	3.130	0.877
6-May-99	23.1	75	0.6894	0.494	3.140	0.874
21-Jul-93	23.1	76	0.6986	0.520	3.142	0.872
18-May-91	23.8	77	0.7079	0.547	3.172	0.868
17-Dec-96	23.9	78	0.7171	0.574	3.173	0.865
7-Mar-94	24.3	79	0.7263	0.602	3.192	0.861
2-Jun-99	24.4	80	0.7356	0.630	3.195	0.857
11-May-98	25.5	81	0.7448	0.658	3.239	0.853
20-Apr-93	25.8	82	0.7540	0.687	3.249	0.849
7-Mar-95	26.1	83	0.7633	0.717	3.263	0.844
19-Mar-98	26.9	84	0.7725	0.747	3.293	0.840
24-Nov-98	27.2	85	0.7818	0.778	3.302	0.835
2-Jun-93	27.4	86	0.7910	0.810	3.309	0.830
9-Feb-95	29.4	87	0.8002	0.842	3.380	0.823
14-Jan-99	30.0	88	0.8095	0.876	3.402	0.820
14-Apr-95	30.9	89	0.8187	0.910	3.429	0.818
30-Dec-98	31.1	90	0.8279	0.946	3.437	0.816
11-May-95	31.2	91	0.8372	0.983	3.440	0.814
8-Feb-99	31.2	92	0.8464	1.021	3.440	0.809
25-May-99	33.8	93	0.8557	1.061	3.521	0.802
17-Apr-97	33.9	94	0.8649	1.103	3.523	0.801
20-Apr-99	35.2	95	0.8741	1.146	3.561	0.798
18-Apr-96	35.4	96	0.8834	1.192	3.566	0.797
5-Apr-93	35.6	97	0.8926	1.241	3.571	0.792
28-Feb-96	36.6	98	0.9018	1.292	3.601	0.783
29-May-98	39.2	99	0.9111	1.347	3.669	0.771
3-May-93	41.7	100	0.9203	1.407	3.732	0.765
10-Jan-95	44.5	101	0.9296	1.473	3.795	0.764
24-Apr-98	44.6	102	0.9388	1.545	3.797	0.775
19-May-93	45.6	103	0.9480	1.626	3.820	0.776
18-Jan-96	53.1	104	0.9573	1.720	3.972	0.765
23-Mar-95	56.5	105	0.9665	1.832	4.035	
27-Mar-97	58.0	106	0.9758	1.973	4.061	
23-Mar-93	58.3	107	0.9850	2.170	4.066	
25-Jun-97	220.1	108	0.9942	2.526	5.394	

update for EV, CV:

dCd		**SF271**		*9*	8.97
LN Analysis		**dCd**		0.70	0.698

Concentration — **Conc. Data, EV=8.97 ug/L CV=0.698**

		Data-based LN		
Avg:	**9**	u	ln[dCd]	[dCd]
SD:	**6**	3	3.9	49
CV:	**0.70**	0	2.00	7
Min:	**2**	-3	0.11	1
Max:	**60**			
Median:	**8**			

u=mLn(Conc.)+b: — 0.953 0.953; 9.1 9.08; 0.629 0.629

update for r2, EV, CV: **r2=0.953, EV=9.08 ug/L CV=0.629; max r2=0.96**

r2 u,lnConc:	0.953	u	lnConc.	Conc.
slope, m:	1.733	3	3.77	43
intercept, b:	-3.535	0	2.04	8
N:	108	-3	0.31	1
E[Conc]:	9.1	Parameter Estimates		
SD[Conc]:	6	from LN regression		
CV[Conc]:	0.63	update graph label		

N: 108

Date	dCd Concentration ug/L Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.956 r2 forward
update and rank for new data						
25-May-99	1.5	1	0.0058	-2.526	0.405	0.953
18-May-91	1.6	2	0.0150	-2.170	0.470	0.951
2-Jun-99	2.1	3	0.0242	-1.973	0.742	0.953
17-May-91	2.2	4	0.0335	-1.832	0.788	0.952
16-May-91	2.4	5	0.0427	-1.720	0.875	0.952
15-May-91	2.5	6	0.0520	-1.626	0.916	0.953
18-Apr-94	2.7	7	0.0612	-1.545	0.993	0.954
20-Apr-99	3	8	0.0704	-1.473	1.099	0.955
11-May-98	3.1	9	0.0797	-1.407	1.131	0.955
6-May-99	3.8	10	0.0889	-1.347	1.335	0.956
24-Apr-98	4.1	11	0.0982	-1.292	1.411	0.954
24-May-95	4.2	12	0.1074	-1.241	1.435	0.953
17-Apr-97	4.2	13	0.1166	-1.192	1.435	0.951
15-Jul-99	4.2	14	0.1259	-1.146	1.435	0.950
11-May-95	4.6	15	0.1351	-1.103	1.526	0.948
5-Apr-93	4.79	16	0.1443	-1.061	1.567	0.947
20-Apr-93	4.79	17	0.1536	-1.021	1.567	0.945
3-May-93	4.79	18	0.1628	-0.983	1.567	0.944
19-May-93	4.79	19	0.1721	-0.946	1.567	0.942
30-Dec-98	4.9	20	0.1813	-0.910	1.589	0.941
18-Apr-96	4.98	21	0.1905	-0.876	1.605	0.939
3-May-94	5	22	0.1998	-0.842	1.609	0.937
20-May-94	5.2	23	0.2090	-0.810	1.649	0.935
13-Jun-95	5.2	24	0.2182	-0.778	1.649	0.933
29-May-98	5.4	25	0.2275	-0.747	1.686	0.931
20-Jun-96	5.55	26	0.2367	-0.717	1.714	0.929
2-Jun-93	5.74	27	0.2460	-0.687	1.747	0.927
28-Jun-95	5.8	28	0.2552	-0.658	1.758	0.925
27-Mar-97	5.8	29	0.2644	-0.630	1.758	0.923
27-Apr-95	6	30	0.2737	-0.602	1.792	0.921
13-Apr-99	6.2	31	0.2829	-0.574	1.825	0.919
27-Mar-96	6.22	32	0.2921	-0.547	1.828	0.917
6-Apr-94	6.3	33	0.3014	-0.520	1.841	0.915
24-Jul-97	6.5	34	0.3106	-0.494	1.872	0.913
9-May-96	6.6	35	0.3199	-0.468	1.887	0.911
8-Jun-94	6.7	36	0.3291	-0.442	1.902	0.909
25-Nov-97	6.8	37	0.3383	-0.417	1.917	0.907
7-Nov-95	6.98	38	0.3476	-0.392	1.943	0.905
9-Feb-95	7	39	0.3568	-0.367	1.946	0.904
23-Mar-94	7.1	40	0.3661	-0.342	1.960	0.902
24-Jun-94	7.2	41	0.3753	-0.318	1.974	0.901
23-Jul-94	7.2	42	0.3845	-0.294	1.974	0.899
14-Apr-95	7.4	43	0.3938	-0.270	2.001	0.897
19-Mar-98	7.4	44	0.4030	-0.246	2.001	0.896
9-Aug-99	7.4	45	0.4122	-0.222	2.001	0.894

7-Sep-99	7.5	46	0.4215	-0.198	2.015	0.892
23-Jun-93	7.65	47	0.4307	-0.175	2.035	0.891
28-Feb-96	7.74	48	0.4400	-0.151	2.046	0.889
7-Mar-94	7.8	49	0.4492	-0.128	2.054	0.888
16-Aug-94	7.8	50	0.4584	-0.104	2.054	0.886
23-Mar-95	7.9	51	0.4677	-0.081	2.067	0.884
14-Aug-97	7.9	52	0.4769	-0.058	2.067	0.882
5-Oct-91	8.1	53	0.4861	-0.035	2.092	0.880
14-Jan-99	8.1	54	0.4954	-0.012	2.092	0.879
18-Jan-96	8.22	55	0.5046	0.012	2.107	0.877
7-Mar-95	8.3	56	0.5139	0.035	2.116	0.875
27-Dec-95	8.41	57	0.5231	0.058	2.129	0.873
23-Jul-96	8.41	58	0.5323	0.081	2.129	0.872
14-Sep-95	8.5	59	0.5416	0.104	2.140	0.870
23-Mar-93	8.6	60	0.5508	0.128	2.152	0.868
21-Sep-93	8.6	61	0.5600	0.151	2.152	0.866
12-Jul-95	8.6	62	0.5693	0.175	2.152	0.864
9-Mar-99	8.7	63	0.5785	0.198	2.163	0.861
9-Mar-99	8.7	64	0.5878	0.222	2.163	0.858
29-Oct-93	8.8	65	0.5970	0.246	2.175	0.855
4-Oct-91	9	66	0.6062	0.270	2.197	0.851
27-Jul-98	9	67	0.6155	0.294	2.197	0.849
1-Oct-91	9.1	68	0.6247	0.318	2.208	0.845
4-Jan-99	9.4	69	0.6339	0.342	2.241	0.841
21-Jan-94	9.5	70	0.6432	0.367	2.251	0.839
26-Sep-96	9.56	71	0.6524	0.392	2.258	0.836
4-Nov-97	9.83	72	0.6617	0.417	2.285	0.834
30-Nov-93	10	73	0.6709	0.442	2.303	0.832
10-Jan-95	10	74	0.6801	0.468	2.303	0.831
26-Jul-95	10	75	0.6894	0.494	2.303	0.829
18-Dec-97	10	76	0.6986	0.520	2.303	0.827
26-Feb-98	10	77	0.7079	0.547	2.303	0.824
22-Feb-99	10	78	0.7171	0.574	2.303	0.820
15-Aug-95	10.2	79	0.7263	0.602	2.322	0.814
21-Aug-96	10.51	80	0.7356	0.630	2.352	0.809
5-Oct-94	11	81	0.7448	0.658	2.398	0.806
4-Sep-97	11	82	0.7540	0.687	2.398	0.805
17-Oct-97	11	83	0.7633	0.717	2.398	0.804
25-Aug-98	11	84	0.7725	0.747	2.398	0.801
26-Oct-98	11	85	0.7818	0.778	2.398	0.797
8-Feb-99	11	86	0.7910	0.810	2.398	0.792
21-Jul-93	11.47	87	0.8002	0.842	2.440	0.785
25-Aug-93	11.47	88	0.8095	0.876	2.440	0.780
8-Oct-95	11.47	89	0.8187	0.910	2.440	0.773
2-Oct-91	12	90	0.8279	0.946	2.485	0.764
21-Dec-93	12.4	91	0.8372	0.983	2.518	0.757
18-Nov-92	12.42	92	0.8464	1.021	2.519	0.753
23-Jan-98	13	93	0.8557	1.061	2.565	0.746
27-Oct-98	13	94	0.8649	1.103	2.565	0.744
9-Dec-98	13	95	0.8741	1.146	2.565	0.739
3-Oct-91	14	96	0.8834	1.192	2.639	0.729
17-Feb-94	14	97	0.8926	1.241	2.639	0.732
23-Sep-98	14	98	0.9018	1.292	2.639	0.730
29-Oct-96	15	99	0.9111	1.347	2.708	0.723
17-Nov-98	15	100	0.9203	1.407	2.708	0.730
23-Feb-93	15.28	101	0.9296	1.473	2.727	0.731
14-Dec-94	17	102	0.9388	1.545	2.833	0.729
17-Dec-96	17	103	0.9480	1.626	2.833	0.768
24-Nov-98	17	104	0.9573	1.720	2.833	0.809
16-Nov-94	18	105	0.9665	1.832	2.890	
26-Nov-96	18	106	0.9758	1.973	2.890	
21-Jan-93	20.05	107	0.9850	2.170	2.998	
25-Jun-97	60	108	0.9942	2.526	4.094	

update for EV, CV:

dCd		**SF271**			627	627
LN Analysis		**dCd**			1.08	1.08
Discharge, Q		**Q Data, EV=627 cfs CV=1.08**				
Avg:	**627**	**Q Data-based LN**				
SD:	**675**	u	lnQ	Q		
CV:	**1.08**	3	8.7	5929		
Min:	**67**	0	6.06	427		
Max:	**4,190**	-3	3.43	31		
Median:	**363**					
					0.965	0.965
					653.6	654
u=mLn(Q)+b:					1.39	1.39

update for r2, EV, CV: **r2=0.965, EV=654 cfs CV=1.39; max r2=0.98**

r2 u,lnQ:	0.965	u	lnQ	Q
slope, m:	0.962	3	9.06	8608
intercept, b:	-5.718	0	5.94	381
N:	108	-3	2.82	17
E[Q]:	653.6	Parameter Estimates		
SD[Q]:	912	from LN regression		
CV[Q]:	1.39	update graph label		

N: 108

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 = 0.984 r2 forward
update and rank for new data						
5-Oct-94	67	1	0.0058	-2.526	4.205	0.965
16-Aug-94	79	2	0.0150	-2.170	4.369	0.971
18-Nov-92	85	3	0.0242	-1.973	4.443	0.974
27-Oct-98	88	4	0.0335	-1.832	4.477	0.977
1-Oct-91	94	5	0.0427	-1.720	4.543	0.979
2-Oct-91	94	6	0.0520	-1.626	4.543	0.981
3-Oct-91	96	7	0.0612	-1.545	4.564	0.982
4-Oct-91	98	8	0.0704	-1.473	4.585	0.983
26-Oct-98	98	9	0.0797	-1.407	4.585	0.983
29-Oct-93	100	10	0.0889	-1.347	4.605	0.984
5-Oct-91	101	11	0.0982	-1.292	4.615	0.984
23-Sep-98	102	12	0.1074	-1.241	4.625	0.983
30-Nov-93	105	13	0.1166	-1.192	4.654	0.983
26-Sep-96	109	14	0.1259	-1.146	4.691	0.983
23-Feb-93	115	15	0.1351	-1.103	4.745	0.982
23-Jul-94	116	16	0.1443	-1.061	4.754	0.982
25-Aug-98	120	17	0.1536	-1.021	4.787	0.982
21-Sep-93	121	18	0.1628	-0.983	4.796	0.981
17-Feb-94	122	19	0.1721	-0.946	4.804	0.981
21-Dec-93	130	20	0.1813	-0.910	4.868	0.980
14-Sep-95	130	21	0.1905	-0.876	4.868	0.979
21-Jan-93	139	22	0.1998	-0.842	4.934	0.979
16-Nov-94	139	23	0.2090	-0.810	4.934	0.978
7-Sep-99	140	24	0.2182	-0.778	4.942	0.978
17-Oct-97	141	25	0.2275	-0.747	4.949	0.977
21-Aug-96	142	26	0.2367	-0.717	4.956	0.976
25-Aug-93	156	27	0.2460	-0.687	5.050	0.976
15-Aug-95	159	28	0.2552	-0.658	5.069	0.975
4-Sep-97	159	29	0.2644	-0.630	5.069	0.975
27-Jul-98	161	30	0.2737	-0.602	5.081	0.974
17-Nov-98	162	31	0.2829	-0.574	5.088	0.974
26-Nov-96	184	32	0.2921	-0.547	5.215	0.973
26-Jul-95	189	33	0.3014	-0.520	5.242	0.973
8-Oct-95	190	34	0.3106	-0.494	5.247	0.972
24-Jun-94	198	35	0.3199	-0.468	5.288	0.972
14-Aug-97	199	36	0.3291	-0.442	5.293	0.971
21-Jan-94	205	37	0.3383	-0.417	5.323	0.970
23-Jul-96	212	38	0.3476	-0.392	5.357	0.970
14-Dec-94	217	39	0.3568	-0.367	5.380	0.970
7-Nov-95	233	40	0.3661	-0.342	5.451	0.969
9-Aug-99	237	41	0.3753	-0.318	5.468	0.969
4-Nov-97	248	42	0.3845	-0.294	5.513	0.968
29-Oct-96	260	43	0.3938	-0.270	5.561	0.967
12-Jul-95	261	44	0.4030	-0.246	5.565	0.967
17-Dec-96	261	45	0.4122	-0.222	5.565	0.966

23-Jan-98	264	46	0.4215	-0.198	5.576	0.966
9-Dec-98	275	47	0.4307	-0.175	5.617	0.965
27-Mar-96	290	48	0.4400	-0.151	5.670	0.965
22-Feb-99	295	49	0.4492	-0.128	5.687	0.965
24-Nov-98	297	50	0.4584	-0.104	5.694	0.965
24-Jul-97	312	51	0.4677	-0.081	5.743	0.965
8-Jun-94	346	52	0.4769	-0.058	5.846	0.965
25-Nov-97	349	53	0.4861	-0.035	5.855	0.964
18-Dec-97	351	54	0.4954	-0.012	5.861	0.964
21-Jul-93	375	55	0.5046	0.012	5.927	0.963
23-Jun-93	384	56	0.5139	0.035	5.951	0.963
26-Feb-98	384	57	0.5231	0.058	5.951	0.962
4-Jan-99	385	58	0.5323	0.081	5.953	0.962
28-Jun-95	395	59	0.5416	0.104	5.979	0.962
9-Mar-99	446	60	0.5508	0.128	6.100	0.963
9-Mar-99	452	61	0.5600	0.151	6.114	0.962
27-Dec-95	492	62	0.5693	0.175	6.198	0.961
23-Mar-94	502	63	0.5785	0.198	6.219	0.960
15-Jul-99	508	64	0.5878	0.222	6.230	0.958
20-Jun-96	510	65	0.5970	0.246	6.234	0.957
8-Feb-99	527	66	0.6062	0.270	6.267	0.956
13-Jun-95	533	67	0.6155	0.294	6.279	0.954
20-May-94	542	68	0.6247	0.318	6.295	0.953
7-Mar-94	580	69	0.6339	0.342	6.363	0.952
7-Mar-95	585	70	0.6432	0.367	6.372	0.951
13-Apr-99	610	71	0.6524	0.392	6.413	0.950
3-May-94	612	72	0.6617	0.417	6.417	0.948
6-Apr-94	632	73	0.6709	0.442	6.449	0.947
9-May-96	641	74	0.6801	0.468	6.463	0.946
19-Mar-98	676	75	0.6894	0.494	6.516	0.945
25-Jun-97	682	76	0.6986	0.520	6.525	0.944
27-Apr-95	685	77	0.7079	0.547	6.529	0.944
14-Jan-99	689	78	0.7171	0.574	6.535	0.946
14-Apr-95	775	79	0.7263	0.602	6.653	0.950
9-Feb-95	780	80	0.7356	0.630	6.659	0.950
10-Jan-95	827	81	0.7448	0.658	6.718	0.953
24-May-95	828	82	0.7540	0.687	6.719	0.954
28-Feb-96	880	83	0.7633	0.717	6.780	0.959
2-Jun-93	886	84	0.7725	0.747	6.787	0.962
20-Apr-93	1000	85	0.7818	0.778	6.908	0.972
6-May-99	1130	86	0.7910	0.810	7.030	0.973
30-Dec-98	1180	87	0.8002	0.842	7.073	0.971
18-Jan-96	1200	88	0.8095	0.876	7.090	0.970
23-Mar-93	1260	89	0.8187	0.910	7.139	0.968
11-May-95	1260	90	0.8279	0.946	7.139	0.967
18-Apr-94	1310	91	0.8372	0.983	7.178	0.965
18-Apr-96	1320	92	0.8464	1.021	7.185	0.964
23-Mar-95	1330	93	0.8557	1.061	7.193	0.962
29-May-98	1350	94	0.8649	1.103	7.208	0.958
5-Apr-93	1380	95	0.8741	1.146	7.230	0.954
17-Apr-97	1500	96	0.8834	1.192	7.313	0.948
11-May-98	1530	97	0.8926	1.241	7.333	0.946
3-May-93	1620	98	0.9018	1.292	7.390	0.943
16-May-91	1670	99	0.9111	1.347	7.421	0.945
15-May-91	1700	100	0.9203	1.407	7.438	0.951
17-May-91	1730	101	0.9296	1.473	7.456	0.956
19-May-93	1770	102	0.9388	1.545	7.479	0.958
27-Mar-97	1860	103	0.9480	1.626	7.528	0.955
24-Apr-98	2020	104	0.9573	1.720	7.611	0.952
2-Jun-99	2160	105	0.9665	1.832	7.678	
20-Apr-99	2180	106	0.9758	1.973	7.687	
18-May-91	2770	107	0.9850	2.170	7.927	
25-May-99	4190	108	0.9942	2.526	8.340	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF271	**Date:**	12-Jul-00
Chemical:	dPb	**Analyst:**	B.Walthall
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	35,077	639	7	26	0.00	0.00	0.00
SD:	877	698	3	28	1.00	1.00	1.00
CV:	0.03	1.09	0.46	1.10			
Min:	33,373	67	1	0.5	-0.82	-1.85	-0.89
Max:	36,410	4,190	16	131	5.09	2.79	3.77
Median:	35,010	351	6	14	-0.41	-0.30	-0.41

dPb	SF271		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.00526)		update r2	0.01	0.00526	r2:	0.002	0.007
r2 Q,[COC]:	0.01	[dPb]	Q		m:	0.0312	0.00010
slope, m:	0.0	7	67.0		b:	-455	2.53
intercept, b:	6.7	7	639.3				
N: 95		8	4190				
LnConc. = mLn(Q)+b (r2=0.0602)		update r2	0.06	0.0602			
r2 lnQ,ln[COC]:	0.06	ln[dPb]	ln Q	[dPb]	Q		
slope, m:	0.13	1.58	4.20	5	67		
intercept, b:	1.03	1.88	6.46	7	639		
N: 95		2.13	8.34	8	4,190		

N= 111

	Sampling Date	Q Discharge	dPb Concentration	dPb Load	Ln Q	Ln dPb Conc.	Ln dPb Load	dPb SF271 Standardized Values = (x - Avg)/SD Q	Conc	Load	for graph 0
updata for new data		cfs	ug/L	lbs/day							
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis				
MFG	15-May-91	1700			7.44			1.52			
MFG	16-May-91	1670	3	27.0	7.42	1.10	3.29	1.48	-1.23	0.05	
MFG	17-May-91	1730			7.46			1.56			
MFG	18-May-91	2770			7.93			3.05			
MFG	1-Oct-91	94	3	1.5	4.54	1.10	0.42	-0.78	-1.23	-0.86	
MFG	2-Oct-91	94			4.54			-0.78			
MFG	3-Oct-91	96			4.56			-0.78			
MFG	4-Oct-91	98			4.58			-0.78			
MFG	5-Oct-91	101	2	1.1	4.62	0.69	0.08	-0.77	-1.54	-0.87	
IDEQ	18-Nov-92	85	1	0.5	4.44	0.00	-0.78	-0.79	-1.85	-0.89	
IDEQ	21-Jan-93	139	9.5	7.1	4.93	2.25	1.96	-0.72	0.78	-0.66	
IDEQ	23-Feb-93	115	6.3	3.9	4.74	1.84	1.36	-0.75	-0.21	-0.77	
IDEQ	23-Mar-93	1260	13.1	88.8	7.14	2.57	4.49	0.89	1.89	2.25	
IDEQ	5-Apr-93	1380	6.4	47.5	7.23	1.86	3.86	1.06	-0.18	0.78	
IDEQ	20-Apr-93	1000	4.2	22.6	6.91	1.44	3.12	0.52	-0.86	-0.11	
IDEQ	3-May-93	1620	11.1	96.7	7.39	2.41	4.57	1.41	1.28	2.53	
IDEQ	19-May-93	1770	13.8	131.4	7.48	2.62	4.88	1.62	2.11	3.77	
IDEQ	2-Jun-93	886	6.9	32.9	6.79	1.93	3.49	0.35	-0.02	0.26	
IDEQ	23-Jun-93	384	5.7	11.8	5.95	1.74	2.47	-0.37	-0.39	-0.49	
IDEQ	21-Jul-93	375	5.9	11.9	5.93	1.77	2.48	-0.38	-0.33	-0.49	
IDEQ	25-Aug-93	156	5	4.2	5.05	1.61	1.43	-0.69	-0.61	-0.76	
IDEQ	21-Sep-93	121	5.4	3.5	4.80	1.69	1.26	-0.74	-0.49	-0.79	
IDEQ	29-Oct-93	100			4.61			-0.77			
IDEQ	30-Nov-93	105			4.65			-0.77			
IDEQ	21-Dec-93	130			4.87			-0.73			
IDEQ	21-Jan-94	205			5.32			-0.62			
IDEQ	17-Feb-94	122			4.80			-0.74			
IDEQ	7-Mar-94	580	5	15.6	6.36	1.61	2.75	-0.08	-0.61	-0.36	
IDEQ	23-Mar-94	502	7	18.9	6.22	1.95	2.94	-0.20	0.01	-0.24	
IDEQ	6-Apr-94	632	6	20.4	6.45	1.79	3.02	-0.01	-0.30	-0.18	
IDEQ	18-Apr-94	1310	6	42.3	7.18	1.79	3.74	0.96	-0.30	0.59	
IDEQ	3-May-94	612	8	26.3	6.42	2.08	3.27	-0.04	0.32	0.03	
IDEQ	20-May-94	542	8	23.3	6.30	2.08	3.15	-0.14	0.32	-0.08	
IDEQ	8-Jun-94	346	6	11.2	5.85	1.79	2.41	-0.42	-0.30	-0.51	
IDEQ	24-Jun-94	198	3	3.2	5.29	1.10	1.16	-0.63	-1.23	-0.80	
IDEQ	23-Jul-94	116			4.75			-0.75			
IDEQ	16-Aug-94	79	2.5	1.1	4.37	0.92	0.06	-0.80	-1.38	-0.87	
IDEQ	5-Oct-94	67	3	1.1	4.20	1.10	0.08	-0.82	-1.23	-0.87	
IDEQ	16-Nov-94	139			4.93			-0.72			
IDEQ	14-Dec-94	217	12	14.0	5.38	2.48	2.64	-0.61	1.55	-0.41	
IDEQ	10-Jan-95	827	10	44.5	6.72	2.30	3.80	0.27	0.94	0.67	
IDEQ	9-Feb-95	780	7	29.4	6.66	1.95	3.38	0.20	0.01	0.14	
IDEQ	7-Mar-95	585	11	34.6	6.37	2.40	3.54	-0.08	1.25	0.32	
IDEQ	23-Mar-95	1330	10	71.6	7.19	2.30	4.27	0.99	0.94	1.64	
IDEQ	14-Apr-95	775	9	37.5	6.65	2.20	3.63	0.19	0.63	0.43	

IDEQ	27-Apr-95	685			6.53			0.07		
IDEQ	11-May-95	1260	10	67.8	7.14	2.30	4.22	0.89	0.94	1.50
IDEQ	24-May-95	828	11	49.0	6.72	2.40	3.89	0.27	1.25	0.83
IDEQ	13-Jun-95	533	11	31.5	6.28	2.40	3.45	-0.15	1.25	0.21
IDEQ	28-Jun-95	395	5	10.6	5.98	1.61	2.36	-0.35	-0.61	-0.53
IDEQ	12-Jul-95	261	7	9.8	5.56	1.95	2.29	-0.54	0.01	-0.56
IDEQ	26-Jul-95	189	6	6.1	5.24	1.79	1.81	-0.65	-0.30	-0.69
IDEQ	15-Aug-95	159			5.07			-0.69		
IDEQ	14-Sep-95	130			4.87			-0.73		
IDEQ	8-Oct-95	190	16	16.4	5.25	2.77	2.79	-0.64	2.79	-0.33
IDEQ	7-Nov-95	233	9	11.3	5.45	2.20	2.42	-0.58	0.63	-0.51
IDEQ	27-Dec-95	492	11	29.1	6.20	2.40	3.37	-0.21	1.25	0.13
IDEQ	18-Jan-96	1200	11	71.0	7.09	2.40	4.26	0.80	1.25	1.62
IDEQ	28-Feb-96	880	6	28.4	6.78	1.79	3.35	0.34	-0.30	0.10
IDEQ	27-Mar-96	290	10	15.6	5.67	2.30	2.75	-0.50	0.94	-0.36
IDEQ	18-Apr-96	1320	9	63.9	7.19	2.20	4.16	0.98	0.63	1.36
IDEQ	9-May-96	641	7	24.1	6.46	1.95	3.18	0.00	0.01	-0.05
IDEQ	20-Jun-96	510	8	22.0	6.23	2.08	3.09	-0.19	0.32	-0.13
IDEQ	23-Jul-96	212	2	2.3	5.36	0.69	0.82	-0.61	-1.54	-0.83
IDEQ	21-Aug-96	142	2	1.5	4.96	0.69	0.42	-0.71	-1.54	-0.96
IDEQ	26-Sep-96	109	4	2.3	4.69	1.39	0.85	-0.76	-0.92	-0.83
IDEQ	29-Oct-96	260	7	9.8	5.56	1.95	2.28	-0.54	0.01	-0.56
IDEQ	26-Nov-96	184	4	4.0	5.21	1.39	1.38	-0.65	-0.92	-0.77
IDEQ	17-Dec-96	261	6	8.4	5.56	1.79	2.13	-0.54	-0.30	-0.61
IDEQ	27-Mar-97	1860	12	120.1	7.53	2.48	4.79	1.75	1.55	3.36
IDEQ	17-Apr-97	1500	7	56.5	7.31	1.95	4.03	1.23	0.01	1.10
IDEQ	25-Jun-97	682	12	44.0	6.53	2.48	3.78	0.06	1.55	0.66
IDEQ	24-Jul-97	312	8	13.4	5.74	2.08	2.60	-0.47	0.32	-0.43
IDEQ	14-Aug-97	199	7	7.5	5.29	1.95	2.01	-0.63	0.01	-0.64
IDEQ	4-Sep-97	159	4	3.4	5.07	1.39	1.23	-0.69	-0.92	-0.79
IDEQ	17-Oct-97	141	6	4.6	4.95	1.79	1.52	-0.71	-0.30	-0.75
URS	4-Nov-97	248	3.64	4.9	5.51	1.29	1.58	-0.56	-1.03	-0.74
IDEQ	25-Nov-97	349	14	26.3	5.86	2.64	3.27	-0.42	2.17	0.03
IDEQ	18-Dec-97	351	11	20.8	5.86	2.40	3.03	-0.41	1.25	-0.17
IDEQ	23-Jan-98	264	6	8.5	5.58	1.79	2.14	-0.54	-0.30	-0.61
IDEQ	26-Feb-98	384	10	20.7	5.95	2.30	3.03	-0.37	0.94	-0.18
IDEQ	19-Mar-98	676	9	32.7	6.52	2.20	3.49	0.05	0.63	0.25
IDEQ	24-Apr-98	2020	9	97.8	7.61	2.20	4.58	1.98	0.63	2.57
URS	11-May-98	1530	5.3	43.6	7.33	1.67	3.78	1.28	-0.52	0.64
IDEQ	29-May-98	1350	11	79.9	7.21	2.40	4.38	1.02	1.25	1.93
IDEQ	27-Jul-98	161	6	5.2	5.08	1.79	1.65	-0.69	-0.30	-0.73
IDEQ	25-Aug-98	120	8	5.2	4.79	2.08	1.64	-0.74	0.32	-0.73
IDEQ	23-Sep-98	102	13	7.1	4.62	2.56	1.96	-0.77	1.86	-0.66
USGS	26-Oct-98	98	14	7.4	4.58	2.64	2.00	-0.78	2.17	-0.65
IDEQ	27-Oct-98	88	8	3.8	4.48	2.08	1.33	-0.79	0.32	-0.78
USGS	17-Nov-98	162	5.5	4.8	5.09	1.70	1.57	-0.68	-0.46	-0.74
USGS	17-Nov-98	162	5.7	5.0	5.09	1.74	1.60	-0.68	-0.39	-0.73
IDEQ	24-Nov-98	297	7	11.2	5.69	1.95	2.41	-0.49	0.01	-0.51
USGS	9-Dec-98	275	3.1	4.6	5.62	1.13	1.52	-0.52	-1.20	-0.75
USGS	9-Dec-98	275	3.3	4.9	5.62	1.19	1.59	-0.52	-1.14	-0.74
USGS	30-Dec-98	1180	2.7	17.1	7.07	0.99	2.84	0.77	-1.32	-0.30
IDEQ	4-Jan-99	385	5	10.4	5.95	1.61	2.34	-0.36	-0.61	-0.54
IDEQ	14-Jan-99	689	5	18.5	6.54	1.61	2.92	0.07	-0.61	-0.25
USGS	8-Feb-99	527	3.3	9.4	6.27	1.19	2.24	-0.16	-1.14	-0.58
IDEQ	22-Feb-99	295	6	9.5	5.69	1.79	2.25	-0.49	-0.30	-0.57
USGS	9-Mar-99	452	5.1	12.4	6.11	1.63	2.52	-0.27	-0.58	-0.47
USGS	9-Mar-99	446	5.1	12.2	6.10	1.63	2.50	-0.28	-0.58	-0.48
USGS	13-Apr-99	610	3.6	11.8	6.41	1.28	2.47	-0.04	-1.04	-0.49
USGS	20-Apr-99	2180	5.4	63.3	7.69	1.69	4.15	2.21	-0.49	1.34
USGS	6-May-99	1130	5	30.4	7.03	1.61	3.41	0.70	-0.61	0.17
USGS	25-May-99	4190	4.6	103.7	8.34	1.53	4.64	5.09	-0.73	2.78
USGS	27-May-99	2760	2.8	41.6	7.92	1.03	3.73	3.04	-1.29	0.57
USGS	2-Jun-99	2160	3.6	41.8	7.68	1.28	3.73	2.18	-1.04	0.58
USGS	15-Jul-99	508	6.7	18.3	6.23	1.90	2.91	-0.19	-0.09	-0.26
USGS	9-Aug-99	237	7.9	10.1	5.47	2.07	2.31	-0.58	0.29	-0.55
USGS	7-Sep-99	140	4.5	3.4	4.94	1.50	1.22	-0.72	-0.77	-0.79

dPb

Concentration over time analysis

	dPb	SF271		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.000**	**0.00001**
	Time	**Ln[COC]**	**[COC]**		
first:	15-May-91	1.80	6		
mid:	7-Nov-95	1.82	6		
last:	7-Sep-99	1.84	6		
	LnConc.=mTime+b >'96 r2, m:			**0.063**	**-0.00026**
	28-Jun-95	2.06	8		
	7-Sep-99	1.66	5		

Load over time analysis

	dPb	SF271			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.002**	**0.00007**
	Time	**LnLoad**	**Load**		
first:	15-May-91	2.50	12		
mid:	7-Nov-95	2.62	14		
last:	7-Sep-99	2.72	15		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00003**
	28-Jun-95	2.58	13		
	7-Sep-99	2.63	14		

	max r2: 0.397			max r2: 0.969		
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.000	0.00001	1.34	0.002	0.00007	0.13
	0.000	0.00001	1.34	0.002	0.00007	0.13
	0.000	-0.00001	2.11	0.004	0.00010	-0.75
	0.000	-0.00001	2.11	0.004	0.00010	-0.75
	0.000	-0.00001	2.11	0.004	0.00010	-0.75
	0.002	-0.00003	2.93	0.000	0.00003	1.49
	0.002	-0.00003	2.93	0.000	0.00003	1.49
	0.002	-0.00003	2.93	0.000	0.00003	1.49
	0.002	-0.00003	2.93	0.000	0.00003	1.49
	0.012	-0.00007	4.34	0.001	-0.00005	4.44
	0.040	-0.00012	6.19	0.010	-0.00014	7.78
	0.035	-0.00012	5.98	0.013	-0.00017	8.68
	0.037	-0.00012	6.15	0.020	-0.00021	10.21
	0.028	-0.00011	5.60	0.013	-0.00017	8.75
	0.029	-0.00011	5.74	0.009	-0.00014	7.80
	0.037	-0.00013	6.35	0.008	-0.00014	7.56
	0.030	-0.00011	5.93	0.003	-0.00008	5.67
	0.020	-0.00009	5.21	0.000	-0.00002	3.25
	0.020	-0.00010	5.25	0.000	0.00001	2.26
	0.022	-0.00010	5.54	0.000	0.00001	2.47
	0.025	-0.00011	5.81	0.000	0.00000	2.68
	0.030	-0.00013	6.33	0.001	-0.00005	4.32
	0.035	-0.00014	6.78	0.004	-0.00010	6.38
	0.035	-0.00014	6.78	0.004	-0.00010	6.38
	0.035	-0.00014	6.78	0.004	-0.00010	6.38
	0.035	-0.00014	6.78	0.004	-0.00010	6.38
	0.035	-0.00014	6.78	0.004	-0.00010	6.38
	0.035	-0.00014	6.78	0.004	-0.00010	6.38
	0.041	-0.00015	7.28	0.004	-0.00011	6.44
	0.041	-0.00016	7.39	0.003	-0.00010	6.25
	0.044	-0.00016	7.71	0.003	-0.00009	5.93
	0.047	-0.00017	8.07	0.001	-0.00005	4.51
	0.044	-0.00017	8.02	0.000	-0.00003	3.67
	0.042	-0.00017	7.96	0.000	-0.00001	2.92
	0.045	-0.00018	8.37	0.000	-0.00002	3.32
	0.070	-0.00023	10.04	0.002	-0.00009	5.96
	0.070	-0.00023	10.04	0.002	-0.00009	5.96
	0.110	-0.00029	12.15	0.013	-0.00023	10.77
	0.154	-0.00034	14.09	0.037	-0.00037	15.93
	0.154	-0.00034	14.09	0.037	-0.00037	15.93
	0.139	-0.00033	13.60	0.040	-0.00039	16.75
	0.129	-0.00032	13.39	0.032	-0.00036	15.49
	0.132	-0.00034	13.82	0.028	-0.00034	14.87
	0.119	-0.00032	13.39	0.023	-0.00031	13.85
	0.109	-0.00031	13.09	0.013	-0.00024	11.18

0.102	-0.00031	12.96	0.008	-0.00019	9.59
0.102	-0.00031	12.96	0.008	-0.00019	9.59
0.091	-0.00030	12.57	0.002	-0.00011	6.46
0.077	-0.00028	11.88	0.000	-0.00003	3.67
0.063	-0.00026	11.08	0.000	0.00003	1.62
0.076	-0.00029	12.29	0.000	0.00001	2.22
0.076	-0.00030	12.71	0.000	-0.00001	3.14
0.084	-0.00033	13.68	0.001	-0.00009	5.74
0.084	-0.00033	13.68	0.001	-0.00009	5.74
0.084	-0.00033	13.68	0.001	-0.00009	5.74
0.057	-0.00027	11.55	0.001	-0.00008	5.45
0.047	-0.00026	11.00	0.002	-0.00010	6.35
0.033	-0.00022	9.65	0.000	-0.00004	4.08
0.020	-0.00017	8.04	0.002	0.00012	-1.86
0.021	-0.00019	8.50	0.006	0.00021	-5.14
0.012	-0.00014	6.93	0.007	0.00025	-6.50
0.006	-0.00010	5.52	0.023	0.00047	-14.31
0.004	-0.00009	5.00	0.035	0.00060	-19.01
0.001	-0.00005	3.69	0.049	0.00074	-23.96
0.022	-0.00022	9.63	0.027	0.00056	-17.50
0.083	-0.00042	16.82	0.006	0.00027	-7.18
0.125	-0.00054	21.10	0.000	0.00000	2.72
0.128	-0.00057	22.42	0.000	-0.00007	5.14
0.190	-0.00073	28.18	0.008	-0.00034	14.99
0.219	-0.00084	32.09	0.016	-0.00052	21.32
0.182	-0.00079	30.13	0.001	-0.00010	6.36
0.189	-0.00085	32.35	0.003	0.00023	-5.78
0.150	-0.00077	29.58	0.016	0.00055	-17.23
0.139	-0.00078	29.84	0.018	0.00062	-19.75
0.139	-0.00082	31.38	0.012	0.00053	-16.71
0.204	-0.00105	39.57	0.001	0.00018	-3.72
0.227	-0.00117	44.06	0.001	-0.00017	8.62
0.343	-0.00151	56.22	0.011	-0.00058	23.63
0.282	-0.00138	51.64	0.005	-0.00042	18.01
0.234	-0.00131	49.05	0.003	-0.00032	14.31
0.263	-0.00149	55.74	0.009	-0.00063	25.29
0.221	-0.00143	53.52	0.006	-0.00053	21.96
0.187	-0.00139	52.16	0.000	-0.00013	7.18
0.150	-0.00131	49.23	0.020	0.00110	-37.36
0.181	-0.00158	58.72	0.073	0.00221	-77.44
0.113	-0.00130	48.63	0.269	0.00430	-153.08
0.114	-0.00140	52.24	0.245	0.00434	-154.50
0.084	-0.00125	46.95	0.216	0.00428	-152.33
0.026	-0.00066	25.50	0.204	0.00437	-155.61
0.000	0.00004	0.16	0.191	0.00438	-156.17
0.021	0.00049	-16.14	0.144	0.00384	-136.37
0.038	0.00068	-23.15	0.107	0.00334	-118.51
0.072	0.00098	-33.91	0.068	0.00271	-95.58
0.190	0.00159	-56.15	0.062	0.00274	-96.53
0.141	0.00139	-49.02	0.023	0.00169	-58.45
0.094	0.00119	-41.64	0.000	0.00021	-4.79
0.026	0.00059	-19.83	0.000	0.00018	-3.57
0.040	0.00081	-27.68	0.004	-0.00080	32.08
0.063	0.00113	-39.36	0.005	-0.00102	39.87
0.014	0.00054	-18.14	0.033	-0.00283	105.74
0.062	0.00123	-42.93	0.104	-0.00539	198.58
0.099	0.00171	-60.63	0.204	-0.00820	300.73
0.182	0.00272	-97.29	0.455	-0.01408	514.59
0.118	0.00231	-82.47	0.804	-0.02008	732.92
0.224	0.00361	-129.47	0.797	-0.02161	788.22
0.333	0.00503	-181.25	0.934	-0.02662	970.68
0.397	0.00614	-221.51	0.969	-0.02364	862.27

update for EV, CV:

dPb
LN Analysis
SF271
dPb

Load

Load Data, EV=25.6 lbs/day CV=1.1

Avg:	**26**
SD:	**28**
CV:	**1.10**
Min:	**0.5**
Max:	**131**
Median:	**14**

Load Data-based LN

u	ln dPb Load	dPb Load
3	5.5	248
0	2.85	17
-3	0.18	1.2

26	25.6
1.10	1.1

u=mLn(Load)+ b:

update for r2, EV, CV: **r2=0.957, EV=29.5lbs/day CV=2.71; max r2=0.98**

r2 u,lnLoad:	0.957	u	lnLoad	Load	
slope, m:	0.687	3	6.69	806	
intercept, b:	-1.596	0	2.32	10	
N:	95	-3	-2.04	0.1	
E[Load]:	29.5	Parameter Estimates			0.957 0.957
SD[Load]:	80	from LN regression			29.5 29.5
CV[Load]:	2.71	update graph label			2.7 2.71

N: 111

max r2 0.981

Date	dPb Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
2-Oct-91		1	0.0056	-2.535		
3-Oct-91		2	0.0146	-2.181		
4-Oct-91		3	0.0236	-1.985		
29-Oct-93		4	0.0326	-1.844		
30-Nov-93		5	0.0416	-1.733		
18-Nov-92	0.5	6	0.0506	-1.639	-0.782	0.957
23-Jul-94		7	0.0596	-1.559		
17-Feb-94		8	0.0685	-1.487		
21-Dec-93		9	0.0775	-1.422		
14-Sep-95		10	0.0865	-1.363		
16-Nov-94		11	0.0955	-1.308		
15-Aug-95		12	0.1045	-1.256		
21-Jan-94		13	0.1135	-1.208		
16-Aug-94	1.1	14	0.1225	-1.163	0.061	0.959
5-Oct-94	1.1	15	0.1315	-1.120	0.078	0.961
5-Oct-91	1.1	16	0.1404	-1.078	0.083	0.964
27-Apr-95		17	0.1494	-1.039		
1-Oct-91	1.5	18	0.1584	-1.001	0.417	0.969
21-Aug-96	1.5	19	0.1674	-0.964	0.424	0.972
23-Jul-96	2.3	20	0.1764	-0.929	0.825	0.976
26-Sep-96	2.3	21	0.1854	-0.895	0.853	0.977
24-Jun-94	3.2	22	0.1944	-0.862	1.162	0.978
7-Sep-99	3.4	23	0.2034	-0.830	1.221	0.978
4-Sep-97	3.4	24	0.2124	-0.798	1.230	0.977
21-Sep-93	3.5	25	0.2213	-0.768	1.257	0.977
27-Oct-98	3.8	26	0.2303	-0.738	1.332	0.977
23-Feb-93	3.9	27	0.2393	-0.708	1.360	0.977
26-Nov-96	4.0	28	0.2483	-0.680	1.376	0.976
25-Aug-93	4.2	29	0.2573	-0.652	1.434	0.976
17-Oct-97	4.6	30	0.2663	-0.624	1.515	0.976
9-Dec-98	4.6	31	0.2753	-0.597	1.523	0.976
17-Nov-98	4.8	32	0.2843	-0.570	1.567	0.976
4-Nov-97	4.9	33	0.2933	-0.544	1.580	0.976
9-Dec-98	4.9	34	0.3022	-0.518	1.586	0.976
17-Nov-98	5.0	35	0.3112	-0.492	1.603	0.977
25-Aug-98	5.2	36	0.3202	-0.467	1.642	0.978
27-Jul-98	5.2	37	0.3292	-0.442	1.648	0.979
26-Jul-95	6.1	38	0.3382	-0.417	1.808	0.981
21-Jan-93	7.1	39	0.3472	-0.393	1.961	0.981
23-Sep-98	7.1	40	0.3562	-0.369	1.965	0.981
26-Oct-98	7.4	41	0.3652	-0.345	1.999	0.981
14-Aug-97	7.5	42	0.3742	-0.321	2.014	0.980
17-Dec-96	8.4	43	0.3831	-0.297	2.131	0.980
23-Jan-98	8.5	44	0.3921	-0.274	2.143	0.980
8-Feb-99	9.4	45	0.4011	-0.250	2.236	0.980

22-Feb-99	9.5	46	0.4101	-0.227	2.254	0.979
29-Oct-96	9.8	47	0.4191	-0.204	2.282	0.978
12-Jul-95	9.8	48	0.4281	-0.181	2.285	0.978
9-Aug-99	10.1	49	0.4371	-0.158	2.310	0.977
4-Jan-99	10.4	50	0.4461	-0.136	2.338	0.976
28-Jun-95	10.6	51	0.4551	-0.113	2.363	0.976
8-Jun-94	11.2	52	0.4640	-0.090	2.413	0.975
24-Nov-98	11.2	53	0.4730	-0.068	2.415	0.974
7-Nov-95	11.3	54	0.4820	-0.045	2.423	0.974
23-Jun-93	11.8	55	0.4910	-0.023	2.466	0.973
13-Apr-99	11.8	56	0.5000	0.000	2.469	0.972
21-Jul-93	11.9	57	0.5090	0.023	2.477	0.972
9-Mar-99	12.2	58	0.5180	0.045	2.504	0.972
9-Mar-99	12.4	59	0.5270	0.068	2.518	0.972
24-Jul-97	13.4	60	0.5360	0.090	2.597	0.972
15-May-91		61	0.5449	0.113		
17-May-91		62	0.5539	0.136		
14-Dec-94	14.0	63	0.5629	0.158	2.640	0.972
7-Mar-94	15.6	64	0.5719	0.181	2.747	0.973
27-Mar-96	15.6	65	0.5809	0.204	2.747	0.972
8-Oct-95	16.4	66	0.5899	0.227	2.795	0.972
30-Dec-98	17.1	67	0.5989	0.250	2.841	0.972
15-Jul-99	18.3	68	0.6079	0.274	2.908	0.971
14-Jan-99	18.5	69	0.6169	0.297	2.920	0.971
23-Mar-94	18.9	70	0.6258	0.321	2.939	0.970
6-Apr-94	20.4	71	0.6348	0.345	3.016	0.969
26-Feb-98	20.7	72	0.6438	0.369	3.028	0.968
18-Dec-97	20.8	73	0.6528	0.393	3.034	0.967
20-Jun-96	22.0	74	0.6618	0.417	3.089	0.966
18-May-91		75	0.6708	0.442		
20-Apr-93	22.6	76	0.6798	0.467	3.118	0.964
20-May-94	23.3	77	0.6888	0.492	3.150	0.964
9-May-96	24.1	78	0.6978	0.518	3.184	0.963
25-Nov-97	26.3	79	0.7067	0.544	3.269	0.962
3-May-94	26.3	80	0.7157	0.570	3.271	0.960
16-May-91	27.0	81	0.7247	0.597	3.294	0.959
28-Feb-96	28.4	82	0.7337	0.624	3.347	0.957
27-Dec-95	29.1	83	0.7427	0.652	3.371	0.955
9-Feb-95	29.4	84	0.7517	0.680	3.380	0.953
6-May-99	30.4	85	0.7607	0.708	3.414	0.951
13-Jun-95	31.5	86	0.7697	0.738	3.451	0.950
19-Mar-98	32.7	87	0.7787	0.768	3.488	0.948
2-Jun-93	32.9	88	0.7876	0.798	3.493	0.946
7-Mar-95	34.6	89	0.7966	0.830	3.544	0.946
14-Apr-95	37.5	90	0.8056	0.862	3.625	0.945
27-May-99	41.6	91	0.8146	0.895	3.728	0.942
2-Jun-99	41.8	92	0.8236	0.929	3.734	0.938
18-Apr-94	42.3	93	0.8326	0.964	3.744	0.933
11-May-98	43.6	94	0.8416	1.001	3.776	0.928
25-Jun-97	44.0	95	0.8506	1.039	3.785	0.923
10-Jan-95	44.5	96	0.8596	1.078	3.795	0.919
5-Apr-93	47.5	97	0.8685	1.120	3.861	0.923
24-May-95	49.0	98	0.8775	1.163	3.892	0.927
17-Apr-97	56.5	99	0.8865	1.208	4.034	0.947
20-Apr-99	63.3	100	0.8955	1.256	4.148	0.949
18-Apr-96	63.9	101	0.9045	1.308	4.158	0.943
11-May-95	67.8	102	0.9135	1.363	4.216	0.938
18-Jan-96	71.0	103	0.9225	1.422	4.263	0.930
23-Mar-95	71.6	104	0.9315	1.487	4.270	0.921
29-May-98	79.9	105	0.9404	1.559	4.381	0.947
23-Mar-93	88.8	106	0.9494	1.639	4.486	0.964
3-May-93	96.7	107	0.9584	1.733	4.572	0.956
24-Apr-98	97.8	108	0.9674	1.844	4.583	
25-May-99	103.7	109	0.9764	1.985	4.641	
27-Mar-97	120.1	110	0.9854	2.181	4.788	
19-May-93	131.4	111	0.9944	2.535	4.878	

update for EV, CV:

dPb		NM295		7	6.98
LN Analysis		tPb		0.46	0.463
Concentration		Conc. Data, EV=6.09 ug/L CV=0.606			
Avg:	7	Data-based LN			
SD:	3	u	ln[dPb]	[dPb]	
CV:	0.46	3	3.2	24	
Min:	1	0	1.85	6	
Max:	16	-3	0.52	2	
Median:	6				

				0.100	0.1
u=mLn(Conc.)+b:				267.3	267
update for r2, EV, CV:	r2=0.1, EV=267 ug/L CV=58.5; max r2=0.97			58.453	58.5
r2 u,lnConc:	0.100	u	lnConc.	Conc.	
slope, m:	0.351	3	10.08	23803	
intercept, b:	-0.533	0	1.52	5	
N:	111	-3	-7.04	0	
E[Conc]:	267.3	Parameter Estimates			
SD[Conc]:	15625	from LN regression			
CV[Conc]:	58.45	update graph label			

Date	dPb Concentration ug/L Ranked	N: 111 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.968 r2 forward
update and rank for new data						
27-Apr-95		1	0.0056	-2.535		
2-Oct-91		2	0.0146	-2.181		
3-Oct-91		3	0.0236	-1.985		
4-Oct-91		4	0.0326	-1.844		
29-Oct-93		5	0.0416	-1.733		
30-Nov-93		6	0.0506	-1.639		
21-Dec-93		7	0.0596	-1.559		
21-Jan-94		8	0.0685	-1.487		
17-Feb-94		9	0.0775	-1.422		
23-Jul-94		10	0.0865	-1.363		
16-Nov-94		11	0.0955	-1.308		
15-Aug-95		12	0.1045	-1.256		
14-Sep-95		13	0.1135	-1.208		
18-Nov-92	1	14	0.1225	-1.163	0.000	0.902
15-May-91		15	0.1315	-1.120		
17-May-91		16	0.1404	-1.078		
18-May-91		17	0.1494	-1.039		
5-Oct-91	2	18	0.1584	-1.001	0.693	0.930
23-Jul-96	2	19	0.1674	-0.964	0.693	0.933
21-Aug-96	2	20	0.1764	-0.929	0.693	0.938
16-Aug-94	2.5	21	0.1854	-0.895	0.916	0.945
30-Dec-98	2.7	22	0.1944	-0.862	0.993	0.947
27-May-99	2.8	23	0.2034	-0.830	1.030	0.948
16-May-91	3	24	0.2124	-0.798	1.099	0.949
1-Oct-91	3	25	0.2213	-0.768	1.099	0.949
24-Jun-94	3	26	0.2303	-0.738	1.099	0.949
5-Oct-94	3	27	0.2393	-0.708	1.099	0.951
9-Dec-98	3.1	28	0.2483	-0.680	1.131	0.953
9-Dec-98	3.3	29	0.2573	-0.652	1.194	0.956
8-Feb-99	3.3	30	0.2663	-0.624	1.194	0.957
13-Apr-99	3.6	31	0.2753	-0.597	1.281	0.960
2-Jun-99	3.6	32	0.2843	-0.570	1.281	0.961
4-Nov-97	3.64	33	0.2933	-0.544	1.292	0.963
26-Sep-96	4	34	0.3022	-0.518	1.386	0.965
26-Nov-96	4	35	0.3112	-0.492	1.386	0.965
4-Sep-97	4	36	0.3202	-0.467	1.386	0.966
20-Apr-93	4.2	37	0.3292	-0.442	1.435	0.967
7-Sep-99	4.5	38	0.3382	-0.417	1.504	0.968
25-May-99	4.6	39	0.3472	-0.393	1.526	0.967
25-Aug-93	5	40	0.3562	-0.369	1.609	0.967
7-Mar-94	5	41	0.3652	-0.345	1.609	0.966
28-Jun-95	5	42	0.3742	-0.321	1.609	0.965
4-Jan-99	5	43	0.3831	-0.297	1.609	0.964
14-Jan-99	5	44	0.3921	-0.274	1.609	0.963
6-May-99	5	45	0.4011	-0.250	1.609	0.962

9-Mar-99	5.1	46	0.4101	-0.227	1.629	0.961
9-Mar-99	5.1	47	0.4191	-0.204	1.629	0.960
11-May-98	5.3	48	0.4281	-0.181	1.668	0.960
21-Sep-93	5.4	49	0.4371	-0.158	1.686	0.958
20-Apr-99	5.4	50	0.4461	-0.136	1.686	0.957
17-Nov-98	5.5	51	0.4551	-0.113	1.705	0.956
23-Jun-93	5.7	52	0.4640	-0.090	1.740	0.955
17-Nov-98	5.7	53	0.4730	-0.068	1.740	0.953
21-Jul-93	5.9	54	0.4820	-0.045	1.775	0.952
6-Apr-94	6	55	0.4910	-0.023	1.792	0.951
18-Apr-94	6	56	0.5000	0.000	1.792	0.949
8-Jun-94	6	57	0.5090	0.023	1.792	0.947
26-Jul-95	6	58	0.5180	0.045	1.792	0.945
28-Feb-96	6	59	0.5270	0.068	1.792	0.944
17-Dec-96	6	60	0.5360	0.090	1.792	0.942
17-Oct-97	6	61	0.5449	0.113	1.792	0.940
23-Jan-98	6	62	0.5539	0.136	1.792	0.939
27-Jul-98	6	63	0.5629	0.158	1.792	0.938
22-Feb-99	6	64	0.5719	0.181	1.792	0.938
23-Feb-93	6.3	65	0.5809	0.204	1.841	0.939
5-Apr-93	6.4	66	0.5899	0.227	1.856	0.939
15-Jul-99	6.7	67	0.5989	0.250	1.902	0.938
2-Jun-93	6.9	68	0.6079	0.274	1.932	0.936
23-Mar-94	7	69	0.6169	0.297	1.946	0.934
9-Feb-95	7	70	0.6258	0.321	1.946	0.932
12-Jul-95	7	71	0.6348	0.345	1.946	0.929
9-May-96	7	72	0.6438	0.369	1.946	0.927
29-Oct-96	7	73	0.6528	0.393	1.946	0.925
17-Apr-97	7	74	0.6618	0.417	1.946	0.925
14-Aug-97	7	75	0.6708	0.442	1.946	0.926
24-Nov-98	7	76	0.6798	0.467	1.946	0.931
9-Aug-99	7.9	77	0.6888	0.492	2.067	0.940
3-May-94	8	78	0.6978	0.518	2.079	0.938
20-May-94	8	79	0.7067	0.544	2.079	0.935
20-Jun-96	8	80	0.7157	0.570	2.079	0.933
24-Jul-97	8	81	0.7247	0.597	2.079	0.933
25-Aug-98	8	82	0.7337	0.624	2.079	0.934
27-Oct-98	8	83	0.7427	0.652	2.079	0.940
14-Apr-95	9	84	0.7517	0.680	2.197	0.954
7-Nov-95	9	85	0.7607	0.708	2.197	0.952
18-Apr-96	9	86	0.7697	0.738	2.197	0.950
19-Mar-98	9	87	0.7787	0.768	2.197	0.949
24-Apr-98	9	88	0.7876	0.798	2.197	0.950
21-Jan-93	9.5	89	0.7966	0.830	2.251	0.957
10-Jan-95	10	90	0.8056	0.862	2.303	0.957
23-Mar-95	10	91	0.8146	0.895	2.303	0.954
11-May-95	10	92	0.8236	0.929	2.303	0.950
27-Mar-96	10	93	0.8326	0.964	2.303	0.946
26-Feb-98	10	94	0.8416	1.001	2.303	0.944
7-Mar-95	11	95	0.8506	1.039	2.398	0.946
24-May-95	11	96	0.8596	1.078	2.398	0.949
13-Jun-95	11	97	0.8685	1.120	2.398	0.950
27-Dec-95	11	98	0.8775	1.163	2.398	0.949
18-Jan-96	11	99	0.8865	1.208	2.398	0.945
18-Dec-97	11	100	0.8955	1.256	2.398	0.938
29-May-98	11	101	0.9045	1.308	2.398	0.930
3-May-93	11.1	102	0.9135	1.363	2.407	0.924
14-Dec-94	12	103	0.9225	1.422	2.485	0.934
27-Mar-97	12	104	0.9315	1.487	2.485	0.922
25-Jun-97	12	105	0.9404	1.559	2.485	0.904
23-Sep-98	13	106	0.9494	1.639	2.565	0.917
23-Mar-93	13.1	107	0.9584	1.733	2.573	0.896
19-May-93	13.8	108	0.9674	1.844	2.625	
25-Nov-97	14	109	0.9764	1.985	2.639	
26-Oct-98	14	110	0.9854	2.181	2.639	
8-Oct-95	16	111	0.9944	2.535	2.773	

update for EV, CV:

dPb		**NM295**
LN Analysis		**tPb**
Discharge, Q		**Q Data, EV=639 cfs CV=1.09**
Avg:	**639**	**Q Data-based LN**
SD:	**698**	u
CV:	**1.09**	3
Min:	**67**	0
Max:	**4,190**	-3
Median:	**351**	

u=mLn(Q)+b:

update for r2, EV, CV: **r2=0.00671, EV=6.57E+36 cfs CV=1.71E+34; max r2=0.99**

r2 u,lnQ:	0.007
slope, m:	0.080
intercept, b:	-0.474
N:	111
E[Q]:	65727559377087100000000000000000000.0
SD[Q]:	11261515856680200000000000000000000000000000000000000000000000000000000000000000000
CV[Q]:	17133628516573200000000000000000000.00

Date	Q Discharge cfs Ranked	i rank
update and rank for new data		
5-Oct-94	67	1
16-Aug-94	79	2
18-Nov-92	85	3
27-Oct-98	88	4
1-Oct-91	94	5
2-Oct-91	94	6
3-Oct-91	96	7
4-Oct-91	98	8
26-Oct-98	98	9
29-Oct-93	100	10
5-Oct-91	101	11
23-Sep-98	102	12
30-Nov-93	105	13
26-Sep-96	109	14
23-Feb-93	115	15
23-Jul-94	116	16
25-Aug-98	120	17
21-Sep-93	121	18
17-Feb-94	122	19
21-Dec-93	130	20
14-Sep-95	130	21
21-Jan-93	139	22
16-Nov-94	139	23
7-Sep-99	140	24
17-Oct-97	141	25
21-Aug-96	142	26
25-Aug-93	156	27
15-Aug-95	159	28
4-Sep-97	159	29
27-Jul-98	161	30
17-Nov-98	162	31
17-Nov-98	162	32
26-Nov-96	184	33
26-Jul-95	189	34
8-Oct-95	190	35
24-Jun-94	198	36
14-Aug-97	199	37
21-Jan-94	205	38
23-Jul-96	212	39
14-Dec-94	217	40
7-Nov-95	233	41
9-Aug-99	237	42
4-Nov-97	248	43
29-Oct-96	260	44
12-Jul-95	261	45

17-Dec-96	261	46
23-Jan-98	264	47
9-Dec-98	275	48
9-Dec-98	275	49
27-Mar-96	290	50
22-Feb-99	295	51
24-Nov-98	297	52
24-Jul-97	312	53
8-Jun-94	346	54
25-Nov-97	349	55
18-Dec-97	351	56
21-Jul-93	375	57
23-Jun-93	384	58
26-Feb-98	384	59
4-Jan-99	385	60
28-Jun-95	395	61
9-Mar-99	446	62
9-Mar-99	452	63
27-Dec-95	492	64
23-Mar-94	502	65
15-Jul-99	508	66
20-Jun-96	510	67
8-Feb-99	527	68
13-Jun-95	533	69
20-May-94	542	70
7-Mar-94	580	71
7-Mar-95	585	72
13-Apr-99	610	73
3-May-94	612	74
6-Apr-94	632	75
9-May-96	641	76
19-Mar-98	676	77
25-Jun-97	682	78
27-Apr-95	685	79
14-Jan-99	689	80
14-Apr-95	775	81
9-Feb-95	780	82
10-Jan-95	827	83
24-May-95	828	84
28-Feb-96	880	85
2-Jun-93	886	86
20-Apr-93	1000	87
6-May-99	1130	88
30-Dec-98	1180	89
18-Jan-96	1200	90
23-Mar-93	1260	91
11-May-95	1260	92
18-Apr-94	1310	93
18-Apr-96	1320	94
23-Mar-95	1330	95
29-May-98	1350	96
5-Apr-93	1380	97
17-Apr-97	1500	98
11-May-98	1530	99
3-May-93	1620	100
16-May-91	1670	101
15-May-91	1700	102
17-May-91	1730	103
19-May-93	1770	104
27-Mar-97	1860	105
24-Apr-98	2020	106
2-Jun-99	2160	107
20-Apr-99	2180	108
27-May-99	2760	109
18-May-91	2770	110
25-May-99	4190	111

	639	639
	1.09	1.09

lnQ	Q
8.7	6158
6.07	432
3.41	30

	0.007	0.00671
	########	6.57E+36
	########	1.71E+34

u	lnQ	Q
3	43.62	########
0	5.95	384
-3	-31.72	0

Parameter Estimates
from LN regression
update graph label

			max r2
H=COUNT(AO31:AO231)			0.986
i-3/8 / N+1/4	**u**	**Ln**	**r2**
plotting points	**y-axis**	**x-axis**	forward
0.0056	-2.535	4.205	0.965
0.0146	-2.181	4.369	0.971
0.0236	-1.985	4.443	0.975
0.0326	-1.844	4.477	0.977
0.0416	-1.733	4.543	0.980
0.0506	-1.639	4.543	0.981
0.0596	-1.559	4.564	0.983
0.0685	-1.487	4.585	0.984
0.0775	-1.422	4.585	0.984
0.0865	-1.363	4.605	0.985
0.0955	-1.308	4.615	0.985
0.1045	-1.256	4.625	0.985
0.1135	-1.208	4.654	0.985
0.1225	-1.163	4.691	0.984
0.1315	-1.120	4.745	0.984
0.1404	-1.078	4.754	0.984
0.1494	-1.039	4.787	0.983
0.1584	-1.001	4.796	0.983
0.1674	-0.964	4.804	0.983
0.1764	-0.929	4.868	0.982
0.1854	-0.895	4.868	0.982
0.1944	-0.862	4.934	0.981
0.2034	-0.830	4.934	0.981
0.2124	-0.798	4.942	0.980
0.2213	-0.768	4.949	0.980
0.2303	-0.738	4.956	0.979
0.2393	-0.708	5.050	0.979
0.2483	-0.680	5.069	0.978
0.2573	-0.652	5.069	0.977
0.2663	-0.624	5.081	0.977
0.2753	-0.597	5.088	0.976
0.2843	-0.570	5.088	0.976
0.2933	-0.544	5.215	0.976
0.3022	-0.518	5.242	0.975
0.3112	-0.492	5.247	0.974
0.3202	-0.467	5.288	0.974
0.3292	-0.442	5.293	0.973
0.3382	-0.417	5.323	0.973
0.3472	-0.393	5.357	0.972
0.3562	-0.369	5.380	0.972
0.3652	-0.345	5.451	0.971
0.3742	-0.321	5.468	0.971
0.3831	-0.297	5.513	0.970
0.3921	-0.274	5.561	0.969
0.4011	-0.250	5.565	0.969

0.4101	-0.227	5.565	0.968
0.4191	-0.204	5.576	0.967
0.4281	-0.181	5.617	0.967
0.4371	-0.158	5.617	0.967
0.4461	-0.136	5.670	0.966
0.4551	-0.113	5.687	0.966
0.4640	-0.090	5.694	0.966
0.4730	-0.068	5.743	0.966
0.4820	-0.045	5.846	0.966
0.4910	-0.023	5.855	0.966
0.5000	0.000	5.861	0.965
0.5090	0.023	5.927	0.965
0.5180	0.045	5.951	0.964
0.5270	0.068	5.951	0.964
0.5360	0.090	5.953	0.964
0.5449	0.113	5.979	0.964
0.5539	0.136	6.100	0.965
0.5629	0.158	6.114	0.964
0.5719	0.181	6.198	0.963
0.5809	0.204	6.219	0.962
0.5899	0.227	6.230	0.961
0.5989	0.250	6.234	0.959
0.6079	0.274	6.267	0.958
0.6169	0.297	6.279	0.957
0.6258	0.321	6.295	0.957
0.6348	0.345	6.363	0.956
0.6438	0.369	6.372	0.955
0.6528	0.393	6.413	0.954
0.6618	0.417	6.417	0.952
0.6708	0.442	6.449	0.952
0.6798	0.467	6.463	0.951
0.6888	0.492	6.516	0.951
0.6978	0.518	6.525	0.950
0.7067	0.544	6.529	0.950
0.7157	0.570	6.535	0.952
0.7247	0.597	6.653	0.957
0.7337	0.624	6.659	0.958
0.7427	0.652	6.718	0.961
0.7517	0.680	6.719	0.963
0.7607	0.708	6.780	0.968
0.7697	0.738	6.787	0.973
0.7787	0.768	6.908	0.983
0.7876	0.798	7.030	0.986
0.7966	0.830	7.073	0.985
0.8056	0.862	7.090	0.984
0.8146	0.895	7.139	0.983
0.8236	0.929	7.139	0.982
0.8326	0.964	7.178	0.981
0.8416	1.001	7.185	0.981
0.8506	1.039	7.193	0.979
0.8596	1.078	7.208	0.977
0.8685	1.120	7.230	0.975
0.8775	1.163	7.313	0.972
0.8865	1.208	7.333	0.970
0.8955	1.256	7.390	0.968
0.9045	1.308	7.421	0.968
0.9135	1.363	7.438	0.970
0.9225	1.422	7.456	0.970
0.9315	1.487	7.479	0.967
0.9404	1.559	7.528	0.960
0.9494	1.639	7.611	0.949
0.9584	1.733	7.678	0.940
0.9674	1.844	7.687	
0.9764	1.985	7.923	
0.9854	2.181	7.927	
0.9944	2.535	8.340	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SF271	**Date:**	12-Jul-00
Chemical:	dZn	**Analyst:**	B.Walthall
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	35,077	639	1,388	2,892	0.00	0.00	0.00
SD:	877	698	676	1,596	1.00	1.00	1.00
CV:	0.03	1.09	0.49	0.55			
Min:	33,373	67	227	641.8	-0.82	-1.72	-1.41
Max:	36,410	4,190	2,920	8,456	5.09	2.27	3.49
Median:	35,010	351	1,280	2,589	-0.41	-0.16	-0.19

dZn	SF271		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.55)		update r2	0.55	0.55		r2:	0.002	0.007
r2 Q,[COC]:	0.55	[dZn]	Q			m:	0.0312	0.00010
slope, m:	-0.7	1,798	67.0			b:	-455	2.53
intercept, b:	1846.4	1,388	639.3					
N:	111	-1,161	4190					
LnConc. = mLn(Q)+b (r2=0.831)			update r2	0.83	0.831			
r2 lnQ,ln[COC]:	0.83	ln[dZn]	ln Q	[dZn]	Q			
slope, m:	-0.50	7.98	4.20	2,913	67			
intercept, b:	10.10	6.84	6.46	933	639			
N:	111	5.89	8.34	361	4,190			

N= 111

	Sampling Date	Q Discharge	dZn Concentration	dZn Load	Ln Q	Ln dZn Conc.	Ln dZn Load	for graph 0 dZn SF271 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	1700	508	4646.2	7.44	6.23	8.44	1.52	-1.30	1.10
MFG	16-May-91	1670	585	5256.0	7.42	6.37	8.57	1.48	-1.19	1.48
MFG	17-May-91	1730	498	4635.1	7.46	6.21	8.44	1.56	-1.32	1.09
MFG	18-May-91	2770	345	5141.4	7.93	5.84	8.55	3.05	-1.54	1.41
MFG	1-Oct-91	94	2640	1335.1	4.54	7.88	7.20	-0.78	1.85	-0.98
MFG	2-Oct-91	94	2620	1325.0	4.54	7.87	7.19	-0.78	1.82	-0.98
MFG	3-Oct-91	96	2590	1337.7	4.56	7.86	7.20	-0.78	1.78	-0.97
MFG	4-Oct-91	98	2920	1539.5	4.58	7.98	7.34	-0.78	2.27	-0.85
MFG	5-Oct-91	101	2810	1526.9	4.62	7.94	7.33	-0.77	2.11	-0.86
IDEQ	18-Nov-92	85	2184.9	999.2	4.44	7.69	6.91	-0.79	1.18	-1.19
IDEQ	21-Jan-93	139	2683.4	2006.7	4.93	7.89	7.60	-0.72	1.92	-0.55
IDEQ	23-Feb-93	115	2683.4	1660.2	4.74	7.89	7.41	-0.75	1.92	-0.77
IDEQ	23-Mar-93	1260	1088.2	7376.7	7.14	6.99	8.91	0.89	-0.44	2.81
IDEQ	5-Apr-93	1380	759.2	5636.6	7.23	6.63	8.64	1.06	-0.93	1.72
IDEQ	20-Apr-93	1000	699.4	3762.8	6.91	6.55	8.23	0.52	-1.02	0.55
IDEQ	3-May-93	1620	699.4	6095.7	7.39	6.55	8.72	1.41	-1.02	2.01
IDEQ	19-May-93	1770	639.6	6090.7	7.48	6.46	8.71	1.62	-1.11	2.00
IDEQ	2-Jun-93	886	829	3951.6	6.79	6.72	8.28	0.35	-0.83	0.66
IDEQ	23-Jun-93	384	1287.6	2660.1	5.95	7.16	7.89	-0.37	-0.15	-0.15
IDEQ	21-Jul-93	375	1387.3	2798.9	5.93	7.24	7.94	-0.38	0.00	-0.06
IDEQ	25-Aug-93	156	1985.5	1666.4	5.05	7.59	7.42	-0.69	0.89	-0.77
IDEQ	21-Sep-93	121	1985.5	1292.5	4.80	7.59	7.16	-0.74	0.89	-1.00
IDEQ	29-Oct-93	100	2350	1264.3	4.61	7.76	7.14	-0.77	1.42	-1.02
IDEQ	30-Nov-93	105	2310	1304.9	4.65	7.75	7.17	-0.77	1.37	-0.99
IDEQ	21-Dec-93	130	2100	1468.7	4.87	7.65	7.29	-0.73	1.05	-0.89
IDEQ	21-Jan-94	205	1660	1830.8	5.32	7.41	7.51	-0.62	0.40	-0.66
IDEQ	17-Feb-94	122	2460	1614.6	4.80	7.81	7.39	-0.74	1.59	-0.80
IDEQ	7-Mar-94	580	1060	3307.6	6.36	6.97	8.10	-0.08	-0.48	0.26
IDEQ	23-Mar-94	502	1160	3132.9	6.22	7.06	8.05	-0.20	-0.34	0.15
IDEQ	6-Apr-94	632	819	2784.7	6.45	6.71	7.93	-0.01	-0.84	-0.07
IDEQ	18-Apr-94	1310	417	2938.9	7.18	6.03	7.99	0.96	-1.44	0.03
IDEQ	3-May-94	612	737	2426.6	6.42	6.60	7.79	-0.04	-0.96	-0.29
IDEQ	20-May-94	542	788	2297.8	6.30	6.67	7.74	-0.14	-0.89	-0.37
IDEQ	8-Jun-94	346	1130	2103.5	5.85	7.03	7.65	-0.42	-0.38	-0.49
IDEQ	24-Jun-94	198	1360	1448.7	5.29	7.22	7.28	-0.63	-0.04	-0.90
IDEQ	23-Jul-94	116	1380	861.2	4.75	7.23	6.76	-0.75	-0.01	-1.27
IDEQ	16-Aug-94	79	1510	641.8	4.37	7.32	6.46	-0.80	0.18	-1.41
IDEQ	5-Oct-94	67	2520	908.4	4.20	7.83	6.81	-0.82	1.68	-1.24
IDEQ	16-Nov-94	139	2030	1518.1	4.93	7.62	7.33	-0.72	0.95	-0.86
IDEQ	14-Dec-94	217	2020	2358.3	5.38	7.61	7.77	-0.61	0.94	-0.33
IDEQ	10-Jan-95	827	1040	4627.2	6.72	6.95	8.44	0.27	-0.51	1.09
IDEQ	9-Feb-95	780	1030	4322.3	6.66	6.94	8.37	0.20	-0.53	0.90
IDEQ	7-Mar-95	585	1250	3934.1	6.37	7.13	8.28	-0.08	-0.20	0.65
IDEQ	23-Mar-95	1330	901	6447.0	7.19	6.80	8.77	0.99	-0.72	2.23
IDEQ	14-Apr-95	775	1000	4169.5	6.65	6.91	8.34	0.19	-0.57	0.80

IDEQ	27-Apr-95	685	906	3338.9	6.53	6.81	8.11	0.07	-0.71	0.28
IDEQ	11-May-95	1260	499	3382.6	7.14	6.21	8.13	0.89	-1.32	0.31
IDEQ	24-May-95	828	646	2877.7	6.72	6.47	7.96	0.27	-1.10	-0.01
IDEQ	13-Jun-95	533	908	2603.7	6.28	6.81	7.86	-0.15	-0.71	-0.18
IDEQ	28-Jun-95	395	1100	2337.6	5.98	7.00	7.76	-0.35	-0.43	-0.35
IDEQ	12-Jul-95	261	1480	2078.2	5.56	7.30	7.64	-0.54	0.14	-0.51
IDEQ	26-Jul-95	189	1860	1891.3	5.24	7.53	7.55	-0.65	0.70	-0.63
IDEQ	15-Aug-95	159	1920	1642.4	5.07	7.56	7.40	-0.69	0.79	-0.78
IDEQ	14-Sep-95	130	1790	1251.9	4.87	7.49	7.13	-0.73	0.60	-1.03
IDEQ	8-Oct-95	190	1487	1520.0	5.25	7.30	7.33	-0.64	0.15	-0.86
IDEQ	7-Nov-95	233	969.6	1215.4	5.45	6.82	7.10	-0.58	-0.62	-1.05
IDEQ	27-Dec-95	492	1457.1	3856.9	6.20	7.28	8.26	-0.21	0.10	0.60
IDEQ	18-Jan-96	1200	842.9	5441.8	7.09	6.74	8.60	0.80	-0.81	1.60
IDEQ	28-Feb-96	880	1387.3	6568.0	6.78	7.24	8.79	0.34	0.00	2.30
IDEQ	27-Mar-96	290	1128.1	1760.1	5.67	7.03	7.47	-0.50	-0.38	-0.71
IDEQ	18-Apr-96	1320	883.8	6276.4	7.19	6.78	8.74	0.98	-0.75	2.12
IDEQ	9-May-96	641	1098.2	3787.2	6.46	7.00	8.24	0.00	-0.43	0.56
IDEQ	20-Jun-96	510	1080.2	2963.9	6.23	6.98	7.99	-0.19	-0.46	0.05
IDEQ	23-Jul-96	212	2304.5	2628.4	5.36	7.74	7.87	-0.61	1.36	-0.16
IDEQ	21-Aug-96	142	2165	1654.0	4.96	7.68	7.41	-0.71	1.15	-0.78
IDEQ	26-Sep-96	109	2354.4	1380.7	4.69	7.76	7.23	-0.76	1.43	-0.95
IDEQ	29-Oct-96	260	2540	3553.0	5.56	7.84	8.18	-0.54	1.71	0.41
IDEQ	26-Nov-96	184	2360	2336.2	5.21	7.77	7.76	-0.65	1.44	-0.35
IDEQ	17-Dec-96	261	2250	3159.4	5.56	7.72	8.06	-0.54	1.28	0.17
IDEQ	27-Mar-97	1860	845	8455.7	7.53	6.74	9.04	1.75	-0.80	3.49
IDEQ	17-Apr-97	1500	671	5415.0	7.31	6.51	8.60	1.23	-1.06	1.58
IDEQ	25-Jun-97	682	729	2674.8	6.53	6.59	7.89	0.06	-0.97	-0.14
IDEQ	24-Jul-97	312	1210	2031.1	5.74	7.10	7.62	-0.47	-0.26	-0.54
IDEQ	14-Aug-97	199	1440	1541.7	5.29	7.27	7.34	-0.63	0.08	-0.85
IDEQ	4-Sep-97	159	1800	1539.8	5.07	7.50	7.34	-0.69	0.61	-0.85
IDEQ	17-Oct-97	141	2020	1532.3	4.95	7.61	7.33	-0.71	0.94	-0.85
URS	4-Nov-97	248	1540	2054.7	5.51	7.34	7.63	-0.56	0.23	-0.52
IDEQ	25-Nov-97	349	1200	2253.1	5.86	7.09	7.72	-0.42	-0.28	-0.40
IDEQ	18-Dec-97	351	1280	2417.1	5.86	7.15	7.79	-0.41	-0.16	-0.30
IDEQ	23-Jan-98	264	1700	2414.5	5.58	7.44	7.79	-0.54	0.46	-0.30
IDEQ	26-Feb-98	384	1330	2747.7	5.95	7.19	7.92	-0.37	-0.09	-0.09
IDEQ	19-Mar-98	676	974	3542.3	6.52	6.88	8.17	0.05	-0.61	0.41
IDEQ	24-Apr-98	2020	415	4510.1	7.61	6.03	8.41	1.98	-1.44	1.01
URS	11-May-98	1530	502	4132.2	7.33	6.22	8.33	1.28	-1.31	0.78
IDEQ	29-May-98	1350	633	4597.5	7.21	6.45	8.43	1.02	-1.12	1.07
IDEQ	27-Jul-98	161	1210	1048.1	5.08	7.10	6.95	-0.69	-0.26	-1.15
IDEQ	25-Aug-98	120	1900	1226.6	4.79	7.55	7.11	-0.74	0.76	-1.04
IDEQ	23-Sep-98	102	2030	1114.0	4.62	7.62	7.02	-0.77	0.95	-1.11
USGS	26-Oct-98	98	2130	1123.0	4.58	7.66	7.02	-0.78	1.10	-1.11
IDEQ	27-Oct-98	88	2010	951.6	4.48	7.61	6.86	-0.79	0.92	-1.22
USGS	17-Nov-98	162	1910	1664.7	5.09	7.55	7.42	-0.68	0.77	-0.77
USGS	17-Nov-98	162	1930	1682.1	5.09	7.57	7.43	-0.68	0.80	-0.76
IDEQ	24-Nov-98	297	1840	2940.1	5.69	7.52	7.99	-0.49	0.67	0.03
USGS	9-Dec-98	275	1750	2589.1	5.62	7.47	7.86	-0.52	0.54	-0.19
USGS	9-Dec-98	275	1900	2811.1	5.62	7.55	7.94	-0.52	0.76	-0.05
USGS	30-Dec-98	1180	661	4196.3	7.07	6.49	8.34	0.77	-1.08	0.82
IDEQ	4-Jan-99	385	1170	2423.4	5.95	7.06	7.79	-0.36	-0.32	-0.29
IDEQ	14-Jan-99	689	1040	3855.1	6.54	6.95	8.26	0.07	-0.51	0.60
USGS	8-Feb-99	527	1180	3345.6	6.27	7.07	8.12	-0.16	-0.31	0.28
IDEQ	22-Feb-99	295	1460	2317.2	5.69	7.29	7.75	-0.49	0.11	-0.36
USGS	9-Mar-99	452	1310	3185.6	6.11	7.18	8.07	-0.27	-0.11	0.18
USGS	9-Mar-99	446	1310	3143.3	6.10	7.18	8.05	-0.28	-0.11	0.16
USGS	13-Apr-99	610	979	3212.9	6.41	6.89	8.07	-0.04	-0.60	0.20
USGS	20-Apr-99	2180	453	5313.0	7.69	6.12	8.58	2.21	-1.38	1.52
USGS	6-May-99	1130	601	3653.7	7.03	6.40	8.20	0.70	-1.16	0.48
USGS	25-May-99	4190	227	5117.1	8.34	5.42	8.54	5.09	-1.72	1.39
USGS	27-May-99	2760	274	4068.6	7.92	5.61	8.31	3.04	-1.65	0.74
USGS	2-Jun-99	2160	317	3683.8	7.68	5.76	8.21	2.18	-1.58	0.50
USGS	15-Jul-99	508	714	1951.4	6.23	6.57	7.58	-0.19	-1.00	-0.59
USGS	9-Aug-99	237	1210	1542.8	5.47	7.10	7.34	-0.58	-0.26	-0.85
USGS	7-Sep-99	140	1340	1009.3	4.94	7.20	6.92	-0.72	-0.07	-1.18

dZn

Concentration over time analysis

	dZn	SF271		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.017**	**-0.00008**
	Time	**Ln[COC]**	**[COC]**		
first:	15-May-91	7.24	1,392		
mid:	7-Nov-95	7.10	1,214		
last:	7-Sep-99	6.98	1,080		
	LnConc.=mTime+b >'96 r2, m:			**0.099**	**-0.00036**
	28-Jun-95	7.39	1,626		
	7-Sep-99	6.84	937		

Load over time analysis

	dZn	SF271		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.000**	**0.00001**
	Time	**LnLoad**	**Load**		
first:	15-May-91	7.80	2,434		
mid:	7-Nov-95	7.82	2,489		
last:	7-Sep-99	7.84	2,538		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00002**
	28-Jun-95	7.82	2,483		
	7-Sep-99	7.84	2,550		

	max r2: 0.962			max r2: 0.996		
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.017	-0.00008	10.03	0.000	0.00001	7.34
	0.026	-0.00010	10.78	0.002	0.00003	6.86
	0.037	-0.00012	11.48	0.005	0.00004	6.24
	0.052	-0.00015	12.39	0.009	0.00006	5.66
	0.082	-0.00019	13.70	0.015	0.00008	4.94
	0.072	-0.00018	13.34	0.011	0.00007	5.32
	0.062	-0.00017	12.94	0.007	0.00006	5.75
	0.052	-0.00015	12.51	0.004	0.00005	6.22
	0.041	-0.00014	11.92	0.002	0.00003	6.60
	0.030	-0.00012	11.30	0.001	0.00002	7.04
	0.025	-0.00011	10.95	0.000	0.00000	7.75
	0.019	-0.00009	10.41	0.000	0.00000	7.93
	0.013	-0.00008	9.85	0.000	-0.00001	8.27
	0.014	-0.00008	9.99	0.000	0.00001	7.41
	0.018	-0.00010	10.44	0.002	0.00003	6.72
	0.024	-0.00011	11.00	0.003	0.00004	6.33
	0.031	-0.00013	11.59	0.008	0.00007	5.48
	0.041	-0.00015	12.30	0.015	0.00009	4.58
	0.048	-0.00016	12.81	0.021	0.00011	4.02
	0.049	-0.00017	12.94	0.022	0.00011	3.80
	0.048	-0.00017	12.99	0.025	0.00012	3.52
	0.042	-0.00016	12.69	0.022	0.00011	3.75
	0.037	-0.00015	12.36	0.016	0.00010	4.26
	0.030	-0.00013	11.84	0.011	0.00008	4.82
	0.023	-0.00012	11.29	0.007	0.00007	5.38
	0.018	-0.00011	10.81	0.005	0.00006	5.85
	0.015	-0.00010	10.55	0.003	0.00005	6.12
	0.010	-0.00008	9.84	0.002	0.00004	6.55
	0.010	-0.00008	10.03	0.003	0.00005	6.19
	0.011	-0.00009	10.12	0.004	0.00006	5.87
	0.014	-0.00010	10.65	0.005	0.00006	5.67
	0.028	-0.00014	12.06	0.006	0.00007	5.38
	0.036	-0.00016	12.86	0.006	0.00007	5.32
	0.045	-0.00018	13.63	0.006	0.00007	5.32
	0.048	-0.00019	13.96	0.005	0.00007	5.46
	0.047	-0.00020	14.05	0.003	0.00005	6.15
	0.046	-0.00020	14.12	0.000	0.00000	7.67
	0.044	-0.00020	14.05	0.003	-0.00005	9.78
	0.033	-0.00017	13.17	0.012	-0.00010	11.48
	0.026	-0.00015	12.56	0.020	-0.00013	12.49
	0.020	-0.00014	11.89	0.022	-0.00014	12.87
	0.022	-0.00015	12.26	0.016	-0.00012	12.17
	0.024	-0.00016	12.66	0.011	-0.00010	11.52
	0.024	-0.00016	12.76	0.008	-0.00009	10.97
	0.029	-0.00018	13.45	0.002	-0.00005	9.48

0.033	-0.00019	14.00	0.001	-0.00002	8.65
0.039	-0.00022	14.81	0.000	-0.00001	8.17
0.063	-0.00028	16.91	0.000	0.00001	7.60
0.085	-0.00033	18.71	0.000	0.00001	7.31
0.099	-0.00036	19.94	0.000	0.00002	7.21
0.108	-0.00039	20.87	0.000	0.00001	7.35
0.106	-0.00039	21.16	0.000	0.00000	7.81
0.097	-0.00039	20.88	0.000	-0.00002	8.59
0.086	-0.00037	20.43	0.002	-0.00006	9.88
0.077	-0.00036	20.10	0.010	-0.00012	12.16
0.074	-0.00037	20.28	0.019	-0.00018	14.18
0.087	-0.00041	21.88	0.041	-0.00026	17.23
0.085	-0.00042	22.22	0.034	-0.00024	16.65
0.106	-0.00049	24.58	0.020	-0.00019	14.68
0.106	-0.00051	25.31	0.006	-0.00011	11.67
0.116	-0.00055	26.95	0.013	-0.00016	13.51
0.142	-0.00064	29.92	0.002	-0.00006	10.09
0.159	-0.00071	32.39	0.000	-0.00002	8.38
0.179	-0.00078	35.25	0.000	0.00001	7.60
0.158	-0.00076	34.44	0.000	0.00001	7.30
0.138	-0.00074	33.68	0.001	-0.00005	9.67
0.113	-0.00070	32.06	0.009	-0.00016	13.68
0.085	-0.00062	29.39	0.004	-0.00012	12.11
0.059	-0.00054	26.45	0.006	-0.00015	13.27
0.036	-0.00044	22.95	0.003	-0.00012	12.18
0.050	-0.00055	26.63	0.004	0.00014	2.87
0.080	-0.00073	33.27	0.028	0.00035	-4.87
0.112	-0.00090	39.62	0.035	0.00042	-7.19
0.118	-0.00098	42.30	0.032	0.00042	-7.29
0.114	-0.00102	43.63	0.019	0.00034	-4.47
0.097	-0.00098	42.51	0.009	0.00024	-0.78
0.074	-0.00090	39.29	0.002	0.00011	3.84
0.063	-0.00087	38.52	0.000	0.00005	5.93
0.063	-0.00094	40.94	0.000	0.00001	7.31
0.061	-0.00099	42.73	0.000	0.00000	7.98
0.044	-0.00090	39.30	0.000	-0.00003	8.86
0.037	-0.00089	39.03	0.000	0.00001	7.47
0.045	-0.00105	45.05	0.003	0.00021	0.07
0.119	-0.00179	71.70	0.021	0.00063	-14.90
0.230	-0.00265	102.99	0.060	0.00113	-33.17
0.370	-0.00366	139.44	0.153	0.00193	-62.27
0.410	-0.00414	156.81	0.099	0.00159	-49.93
0.393	-0.00426	161.21	0.059	0.00127	-38.07
0.364	-0.00425	160.84	0.022	0.00078	-20.26
0.330	-0.00410	155.46	0.002	0.00024	-0.87
0.292	-0.00395	150.01	0.017	-0.00060	29.78
0.256	-0.00375	142.87	0.055	-0.00109	47.50
0.211	-0.00348	132.82	0.138	-0.00174	71.16
0.164	-0.00313	120.37	0.158	-0.00199	79.99
0.117	-0.00270	104.71	0.206	-0.00241	95.28
0.058	-0.00194	76.98	0.259	-0.00292	113.83
0.082	-0.00247	96.39	0.227	-0.00289	112.65
0.056	-0.00221	86.89	0.337	-0.00382	146.65
0.039	-0.00202	79.78	0.330	-0.00416	159.01
0.015	-0.00134	55.22	0.354	-0.00471	179.10
0.001	0.00028	-3.60	0.534	-0.00633	237.92
0.039	0.00237	-79.74	0.618	-0.00754	281.62
0.269	0.00671	-237.51	0.802	-0.01009	374.38
0.583	0.01040	-371.57	0.927	-0.01200	443.82
0.678	0.01277	-457.86	0.918	-0.01244	459.84
0.962	0.01738	-625.27	0.981	-0.01428	526.67
0.962	0.01643	-590.76	0.996	-0.01335	493.01

update for EV, CV:

dZn
SF271
LN Analysis
dZn

Load

Load Data, EV=2890 lbs/day CV=0.552

Avg:	2,892
SD:	1,596
CV:	0.55
Min:	641.8
Max:	8,456
Median:	2,589

Load Data-based LN

u	ln dZn Load	dZn Load
3	9.4	11895
0	7.84	2532
-3	6.29	538.8

2,892	2890
0.55	0.552

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.989, EV=2920lbs/day CV=0.612; max r2=0.99**

		u	lnLoad	Load		
r2 u,lnLoad:	0.989	3	9.51	13516		
slope, m:	1.774	0	7.82	2492		
intercept, b:	-13.875	-3	6.13	459.3		
N: 111					0.989	0.989
E[Load]:	2920.6	Parameter Estimates			2920.6	2920
SD[Load]:	1786	from LN regression			0.6	0.612
CV[Load]:	0.61	update graph label			max r2	
					0.989	

N: 111

Date	dZn Load lbs/day Ranked	I rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
16-Aug-94	641.8	1	0.0056	-2.535	6.464	0.989
23-Jul-94	861.2	2	0.0146	-2.181	6.758	0.988
5-Oct-94	908.4	3	0.0236	-1.985	6.812	0.989
27-Oct-98	951.6	4	0.0326	-1.844	6.858	0.989
18-Nov-92	999.2	5	0.0416	-1.733	6.907	0.989
7-Sep-99	1009.3	6	0.0506	-1.639	6.917	0.988
27-Jul-98	1048.1	7	0.0596	-1.559	6.955	0.988
23-Sep-98	1114.0	8	0.0685	-1.487	7.016	0.988
26-Oct-98	1123.0	9	0.0775	-1.422	7.024	0.987
7-Nov-95	1215.4	10	0.0865	-1.363	7.103	0.987
25-Aug-98	1226.6	11	0.0955	-1.308	7.112	0.987
14-Sep-95	1251.9	12	0.1045	-1.256	7.132	0.987
29-Oct-93	1264.3	13	0.1135	-1.208	7.142	0.986
21-Sep-93	1292.5	14	0.1225	-1.163	7.164	0.986
30-Nov-93	1304.9	15	0.1315	-1.120	7.174	0.986
2-Oct-91	1325.0	16	0.1404	-1.078	7.189	0.985
1-Oct-91	1335.1	17	0.1494	-1.039	7.197	0.985
3-Oct-91	1337.7	18	0.1584	-1.001	7.199	0.984
26-Sep-96	1380.7	19	0.1674	-0.964	7.230	0.984
24-Jun-94	1448.7	20	0.1764	-0.929	7.278	0.983
21-Dec-93	1468.7	21	0.1854	-0.895	7.292	0.983
16-Nov-94	1518.1	22	0.1944	-0.862	7.325	0.983
8-Oct-95	1520.0	23	0.2034	-0.830	7.326	0.982
5-Oct-91	1526.9	24	0.2124	-0.798	7.331	0.982
17-Oct-97	1532.3	25	0.2213	-0.768	7.335	0.981
4-Oct-91	1539.5	26	0.2303	-0.738	7.339	0.981
4-Sep-97	1539.8	27	0.2393	-0.708	7.339	0.980
14-Aug-97	1541.7	28	0.2483	-0.680	7.341	0.980
9-Aug-99	1542.8	29	0.2573	-0.652	7.341	0.980
17-Feb-94	1614.6	30	0.2663	-0.624	7.387	0.980
15-Aug-95	1642.4	31	0.2753	-0.597	7.404	0.980
21-Aug-96	1654.0	32	0.2843	-0.570	7.411	0.979
23-Feb-93	1660.2	33	0.2933	-0.544	7.415	0.979
17-Nov-98	1664.7	34	0.3022	-0.518	7.417	0.980
25-Aug-93	1666.4	35	0.3112	-0.492	7.418	0.980
17-Nov-98	1682.1	36	0.3202	-0.467	7.428	0.982
27-Mar-96	1760.1	37	0.3292	-0.442	7.473	0.983
21-Jan-94	1830.8	38	0.3382	-0.417	7.513	0.984
26-Jul-95	1891.3	39	0.3472	-0.393	7.545	0.985
15-Jul-99	1951.4	40	0.3562	-0.369	7.576	0.985
21-Jan-93	2006.7	41	0.3652	-0.345	7.604	0.986
24-Jul-97	2031.1	42	0.3742	-0.321	7.616	0.986
4-Nov-97	2054.7	43	0.3831	-0.297	7.628	0.986
12-Jul-95	2078.2	44	0.3921	-0.274	7.639	0.986
8-Jun-94	2103.5	45	0.4011	-0.250	7.651	0.986

25-Nov-97	2253.1	46	0.4101	-0.227	7.720	0.987
20-May-94	2297.8	47	0.4191	-0.204	7.740	0.987
22-Feb-99	2317.2	48	0.4281	-0.181	7.748	0.986
26-Nov-96	2336.2	49	0.4371	-0.158	7.756	0.986
28-Jun-95	2337.6	50	0.4461	-0.136	7.757	0.986
14-Dec-94	2358.3	51	0.4551	-0.113	7.766	0.985
23-Jan-98	2414.5	52	0.4640	-0.090	7.789	0.985
18-Dec-97	2417.1	53	0.4730	-0.068	7.790	0.985
4-Jan-99	2423.4	54	0.4820	-0.045	7.793	0.985
3-May-94	2426.6	55	0.4910	-0.023	7.794	0.985
9-Dec-98	2589.1	56	0.5000	0.000	7.859	0.986
13-Jun-95	2603.7	57	0.5090	0.023	7.865	0.986
23-Jul-96	2628.4	58	0.5180	0.045	7.874	0.986
23-Jun-93	2660.1	59	0.5270	0.068	7.886	0.985
25-Jun-97	2674.8	60	0.5360	0.090	7.892	0.985
26-Feb-98	2747.7	61	0.5449	0.113	7.919	0.985
6-Apr-94	2784.7	62	0.5539	0.136	7.932	0.985
21-Jul-93	2798.9	63	0.5629	0.158	7.937	0.985
9-Dec-98	2811.1	64	0.5719	0.181	7.941	0.985
24-May-95	2877.7	65	0.5809	0.204	7.965	0.985
18-Apr-94	2938.9	66	0.5899	0.227	7.986	0.985
24-Nov-98	2940.1	67	0.5989	0.250	7.986	0.985
20-Jun-96	2963.9	68	0.6079	0.274	7.994	0.985
23-Mar-94	3132.9	69	0.6169	0.297	8.050	0.986
9-Mar-99	3143.3	70	0.6258	0.321	8.053	0.985
17-Dec-96	3159.4	71	0.6348	0.345	8.058	0.985
9-Mar-99	3185.6	72	0.6438	0.369	8.066	0.984
13-Apr-99	3212.9	73	0.6528	0.393	8.075	0.984
7-Mar-94	3307.6	74	0.6618	0.417	8.104	0.984
27-Apr-95	3338.9	75	0.6708	0.442	8.113	0.984
8-Feb-99	3345.6	76	0.6798	0.467	8.115	0.984
11-May-95	3382.6	77	0.6888	0.492	8.126	0.984
19-Mar-98	3542.3	78	0.6978	0.518	8.173	0.985
29-Oct-96	3553.0	79	0.7067	0.544	8.176	0.984
6-May-99	3653.7	80	0.7157	0.570	8.204	0.984
2-Jun-99	3683.8	81	0.7247	0.597	8.212	0.983
20-Apr-93	3762.8	82	0.7337	0.624	8.233	0.983
9-May-96	3787.2	83	0.7427	0.652	8.239	0.982
14-Jan-99	3855.1	84	0.7517	0.680	8.257	0.981
27-Dec-95	3856.9	85	0.7607	0.708	8.258	0.980
7-Mar-95	3934.1	86	0.7697	0.738	8.277	0.980
2-Jun-93	3951.6	87	0.7787	0.768	8.282	0.979
27-May-99	4068.6	88	0.7876	0.798	8.311	0.979
11-May-98	4132.2	89	0.7966	0.830	8.327	0.978
14-Apr-95	4169.5	90	0.8056	0.862	8.336	0.977
30-Dec-98	4196.3	91	0.8146	0.895	8.342	0.977
9-Feb-95	4322.3	92	0.8236	0.929	8.372	0.979
24-Apr-98	4510.1	93	0.8326	0.964	8.414	0.979
29-May-98	4597.5	94	0.8416	1.001	8.433	0.977
10-Jan-95	4627.2	95	0.8506	1.039	8.440	0.975
17-May-91	4635.1	96	0.8596	1.078	8.441	0.974
15-May-91	4646.2	97	0.8685	1.120	8.444	0.975
25-May-99	5117.1	98	0.8775	1.163	8.540	0.984
18-May-91	5141.4	99	0.8865	1.208	8.545	0.983
16-May-91	5256.0	100	0.8955	1.256	8.567	0.981
20-Apr-99	5313.0	101	0.9045	1.308	8.578	0.979
17-Apr-97	5415.0	102	0.9135	1.363	8.597	0.976
18-Jan-96	5441.8	103	0.9225	1.422	8.602	0.971
5-Apr-93	5636.6	104	0.9315	1.487	8.637	0.968
19-May-93	6090.7	105	0.9404	1.559	8.715	0.963
3-May-93	6095.7	106	0.9494	1.639	8.715	0.975
18-Apr-96	6276.4	107	0.9584	1.733	8.745	0.975
23-Mar-95	6447.0	108	0.9674	1.844	8.771	
28-Feb-96	6568.0	109	0.9764	1.985	8.790	
23-Mar-93	7376.7	110	0.9854	2.181	8.906	
27-Mar-97	8455.7	111	0.9944	2.535	9.043	

update for EV, CV:

dZn		SF271		1,388	1390
LN Analysis		dZn		0.49	0.487
Concentration		Conc. Data, EV=1390 ug/L CV=0.487			
Avg:	1,388	Data-based LN			
SD:	676	u	ln[dZn]	[dZn]	
CV:	0.49	3	8.5	4977	
Min:	227	0	7.13	1248	
Max:	2,920	-3	5.75	313	
Median:	1,280				

				0.963	0.963
u=mLn(Conc.)+b:				1428.6	1430
update for r2, EV, CV:	r2=0.963, EV=1430 ug/L CV=0.633; max r2=0.98			0.633	0.633
r2 u,lnConc:	0.963	u	lnConc.	Conc.	
slope, m:	1.723	3	8.84	6883	
intercept, b:	-12.230	0	7.10	1207	
N:	111	-3	5.36	212	
E[Conc]:	1428.6	Parameter Estimates			
SD[Conc]:	904	from LN regression			
CV[Conc]:	0.63	update graph label			

	dZn	N: 111				max r2 0.979
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
25-May-99	227	1	0.0056	-2.535	5.425	0.963
27-May-99	274	2	0.0146	-2.181	5.613	0.962
2-Jun-99	317	3	0.0236	-1.985	5.759	0.962
18-May-91	345	4	0.0326	-1.844	5.844	0.962
24-Apr-98	415	5	0.0416	-1.733	6.028	0.962
18-Apr-94	417	6	0.0506	-1.639	6.033	0.961
20-Apr-99	453	7	0.0596	-1.559	6.116	0.961
17-May-91	498	8	0.0685	-1.487	6.211	0.960
11-May-95	499	9	0.0775	-1.422	6.213	0.959
11-May-98	502	10	0.0865	-1.363	6.219	0.959
15-May-91	508	11	0.0955	-1.308	6.230	0.959
16-May-91	585	12	0.1045	-1.256	6.372	0.959
6-May-99	601	13	0.1135	-1.208	6.399	0.958
29-May-98	633	14	0.1225	-1.163	6.450	0.957
19-May-93	639.6	15	0.1315	-1.120	6.461	0.956
24-May-95	646	16	0.1404	-1.078	6.471	0.955
30-Dec-98	661	17	0.1494	-1.039	6.494	0.954
17-Apr-97	671	18	0.1584	-1.001	6.509	0.954
20-Apr-93	699.4	19	0.1674	-0.964	6.550	0.953
3-May-93	699.4	20	0.1764	-0.929	6.550	0.952
15-Jul-99	714	21	0.1854	-0.895	6.571	0.952
25-Jun-97	729	22	0.1944	-0.862	6.592	0.951
3-May-94	737	23	0.2034	-0.830	6.603	0.951
5-Apr-93	759.2	24	0.2124	-0.798	6.632	0.950
20-May-94	788	25	0.2213	-0.768	6.669	0.950
6-Apr-94	819	26	0.2303	-0.738	6.708	0.949
2-Jun-93	829	27	0.2393	-0.708	6.720	0.949
18-Jan-96	842.9	28	0.2483	-0.680	6.737	0.948
27-Mar-97	845	29	0.2573	-0.652	6.739	0.947
18-Apr-96	883.8	30	0.2663	-0.624	6.784	0.946
23-Mar-95	901	31	0.2753	-0.597	6.804	0.945
27-Apr-95	906	32	0.2843	-0.570	6.809	0.944
13-Jun-95	908	33	0.2933	-0.544	6.811	0.943
7-Nov-95	969.6	34	0.3022	-0.518	6.877	0.943
19-Mar-98	974	35	0.3112	-0.492	6.881	0.941
13-Apr-99	979	36	0.3202	-0.467	6.887	0.940
14-Apr-95	1000	37	0.3292	-0.442	6.908	0.939
9-Feb-95	1030	38	0.3382	-0.417	6.937	0.937
10-Jan-95	1040	39	0.3472	-0.393	6.947	0.936
14-Jan-99	1040	40	0.3562	-0.369	6.947	0.934
7-Mar-94	1060	41	0.3652	-0.345	6.966	0.933
20-Jun-96	1080.2	42	0.3742	-0.321	6.985	0.931
23-Mar-93	1088.2	43	0.3831	-0.297	6.992	0.929
9-May-96	1098.2	44	0.3921	-0.274	7.001	0.927
28-Jun-95	1100	45	0.4011	-0.250	7.003	0.926

27-Mar-96	1128.1	46	0.4101	-0.227	7.028	0.924
8-Jun-94	1130	47	0.4191	-0.204	7.030	0.922
23-Mar-94	1160	48	0.4281	-0.181	7.056	0.921
4-Jan-99	1170	49	0.4371	-0.158	7.065	0.919
8-Feb-99	1180	50	0.4461	-0.136	7.073	0.917
25-Nov-97	1200	51	0.4551	-0.113	7.090	0.915
24-Jul-97	1210	52	0.4640	-0.090	7.098	0.913
27-Jul-98	1210	53	0.4730	-0.068	7.098	0.911
9-Aug-99	1210	54	0.4820	-0.045	7.098	0.910
7-Mar-95	1250	55	0.4910	-0.023	7.131	0.909
18-Dec-97	1280	56	0.5000	0.000	7.155	0.907
23-Jun-93	1287.6	57	0.5090	0.023	7.161	0.905
9-Mar-99	1310	58	0.5180	0.045	7.178	0.904
9-Mar-99	1310	59	0.5270	0.068	7.178	0.902
26-Feb-98	1330	60	0.5360	0.090	7.193	0.900
7-Sep-99	1340	61	0.5449	0.113	7.200	0.899
24-Jun-94	1360	62	0.5539	0.136	7.215	0.898
23-Jul-94	1380	63	0.5629	0.158	7.230	0.897
21-Jul-93	1387.3	64	0.5719	0.181	7.235	0.896
28-Feb-96	1387.3	65	0.5809	0.204	7.235	0.897
14-Aug-97	1440	66	0.5899	0.227	7.272	0.899
27-Dec-95	1457.1	67	0.5989	0.250	7.284	0.900
22-Feb-99	1460	68	0.6079	0.274	7.286	0.901
12-Jul-95	1480	69	0.6169	0.297	7.300	0.904
8-Oct-95	1487	70	0.6258	0.321	7.305	0.909
16-Aug-94	1510	71	0.6348	0.345	7.320	0.918
4-Nov-97	1540	72	0.6438	0.369	7.340	0.930
21-Jan-94	1660	73	0.6528	0.393	7.415	0.944
23-Jan-98	1700	74	0.6618	0.417	7.438	0.948
9-Dec-98	1750	75	0.6708	0.442	7.467	0.950
14-Sep-95	1790	76	0.6798	0.467	7.490	0.950
4-Sep-97	1800	77	0.6888	0.492	7.496	0.949
24-Nov-98	1840	78	0.6978	0.518	7.518	0.949
26-Jul-95	1860	79	0.7067	0.544	7.528	0.947
25-Aug-98	1900	80	0.7157	0.570	7.550	0.945
9-Dec-98	1900	81	0.7247	0.597	7.550	0.942
17-Nov-98	1910	82	0.7337	0.624	7.555	0.939
15-Aug-95	1920	83	0.7427	0.652	7.560	0.937
17-Nov-98	1930	84	0.7517	0.680	7.565	0.934
25-Aug-93	1985.5	85	0.7607	0.708	7.594	0.932
21-Sep-93	1985.5	86	0.7697	0.738	7.594	0.928
27-Oct-98	2010	87	0.7787	0.768	7.606	0.925
14-Dec-94	2020	88	0.7876	0.798	7.611	0.920
17-Oct-97	2020	89	0.7966	0.830	7.611	0.916
16-Nov-94	2030	90	0.8056	0.862	7.616	0.914
23-Sep-98	2030	91	0.8146	0.895	7.616	0.914
21-Dec-93	2100	92	0.8236	0.929	7.650	0.923
26-Oct-98	2130	93	0.8326	0.964	7.664	0.924
21-Aug-96	2165	94	0.8416	1.001	7.680	0.927
18-Nov-92	2184.9	95	0.8506	1.039	7.689	0.929
17-Dec-96	2250	96	0.8596	1.078	7.719	0.937
23-Jul-96	2304.5	97	0.8685	1.120	7.743	0.937
30-Nov-93	2310	98	0.8775	1.163	7.745	0.931
29-Oct-93	2350	99	0.8865	1.208	7.762	0.928
26-Sep-96	2354.4	100	0.8955	1.256	7.764	0.922
26-Nov-96	2360	101	0.9045	1.308	7.766	0.925
17-Feb-94	2460	102	0.9135	1.363	7.808	0.970
5-Oct-94	2520	103	0.9225	1.422	7.832	0.979
29-Oct-96	2540	104	0.9315	1.487	7.840	0.975
3-Oct-91	2590	105	0.9404	1.559	7.859	0.973
2-Oct-91	2620	106	0.9494	1.639	7.871	0.966
1-Oct-91	2640	107	0.9584	1.733	7.879	0.962
21-Jan-93	2683.4	108	0.9674	1.844	7.895	0.949
23-Feb-93	2683.4	109	0.9764	1.985	7.895	
5-Oct-91	2810	110	0.9854	2.181	7.941	
4-Oct-91	2920	111	0.9944	2.535	7.979	

update for EV, CV:

dZn		SF271			639	639
LN Analysis		dZn			1.09	1.09
Discharge, Q		Q Data, EV=639 cfs CV=1.09				
Avg:	639	Q Data-based LN				
SD:	698	u	lnQ	Q		
CV:	1.09	3	8.7	6158		
Min:	67	0	6.07	432		
Max:	4,190	-3	3.41	30		
Median:	351					
					0.965	0.965
					663.5	664
	u=mLn(Q)+b:				1.41	1.41

update for r2, EV, CV: **r2=0.965, EV=664 cfs CV=1.41; max r2=0.98**

r2 u,lnQ:	0.965	u	lnQ	Q
slope, m:	0.955	3	9.09	8867
intercept, b:	-5.683	0	5.95	384
N:	111	-3	2.81	17
E[Q]:	663.5	Parameter Estimates		
SD[Q]:	936	from LN regression		
CV[Q]:	1.41	update graph label		

N: 111 — max r2 = 0.986

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
5-Oct-94	67	1	0.0056	-2.535	4.205	0.965
16-Aug-94	79	2	0.0146	-2.181	4.369	0.971
18-Nov-92	85	3	0.0236	-1.985	4.443	0.975
27-Oct-98	88	4	0.0326	-1.844	4.477	0.977
1-Oct-91	94	5	0.0416	-1.733	4.543	0.980
2-Oct-91	94	6	0.0506	-1.639	4.543	0.981
3-Oct-91	96	7	0.0596	-1.559	4.564	0.983
4-Oct-91	98	8	0.0685	-1.487	4.585	0.984
26-Oct-98	98	9	0.0775	-1.422	4.585	0.984
29-Oct-93	100	10	0.0865	-1.363	4.605	0.985
5-Oct-91	101	11	0.0955	-1.308	4.615	0.985
23-Sep-98	102	12	0.1045	-1.256	4.625	0.985
30-Nov-93	105	13	0.1135	-1.208	4.654	0.985
26-Sep-96	109	14	0.1225	-1.163	4.691	0.984
23-Feb-93	115	15	0.1315	-1.120	4.745	0.984
23-Jul-94	116	16	0.1404	-1.078	4.754	0.984
25-Aug-98	120	17	0.1494	-1.039	4.787	0.983
21-Sep-93	121	18	0.1584	-1.001	4.796	0.983
17-Feb-94	122	19	0.1674	-0.964	4.804	0.983
21-Dec-93	130	20	0.1764	-0.929	4.868	0.982
14-Sep-95	130	21	0.1854	-0.895	4.868	0.982
21-Jan-93	139	22	0.1944	-0.862	4.934	0.981
16-Nov-94	139	23	0.2034	-0.830	4.934	0.981
7-Sep-99	140	24	0.2124	-0.798	4.942	0.980
17-Oct-97	141	25	0.2213	-0.768	4.949	0.980
21-Aug-96	142	26	0.2303	-0.738	4.956	0.979
25-Aug-93	156	27	0.2393	-0.708	5.050	0.979
15-Aug-95	159	28	0.2483	-0.680	5.069	0.978
4-Sep-97	159	29	0.2573	-0.652	5.069	0.977
27-Jul-98	161	30	0.2663	-0.624	5.081	0.977
17-Nov-98	162	31	0.2753	-0.597	5.088	0.976
17-Nov-98	162	32	0.2843	-0.570	5.088	0.976
26-Nov-96	184	33	0.2933	-0.544	5.215	0.976
26-Jul-95	189	34	0.3022	-0.518	5.242	0.975
8-Oct-95	190	35	0.3112	-0.492	5.247	0.974
24-Jun-94	198	36	0.3202	-0.467	5.288	0.974
14-Aug-97	199	37	0.3292	-0.442	5.293	0.973
21-Jan-94	205	38	0.3382	-0.417	5.323	0.973
23-Jul-96	212	39	0.3472	-0.393	5.357	0.972
14-Dec-94	217	40	0.3562	-0.369	5.380	0.972
7-Nov-95	233	41	0.3652	-0.345	5.451	0.971
9-Aug-99	237	42	0.3742	-0.321	5.468	0.971
4-Nov-97	248	43	0.3831	-0.297	5.513	0.970
29-Oct-96	260	44	0.3921	-0.274	5.561	0.969
12-Jul-95	261	45	0.4011	-0.250	5.565	0.969

17-Dec-96	261	46	0.4101	-0.227	5.565	0.968
23-Jan-98	264	47	0.4191	-0.204	5.576	0.967
9-Dec-98	275	48	0.4281	-0.181	5.617	0.967
9-Dec-98	275	49	0.4371	-0.158	5.617	0.967
27-Mar-96	290	50	0.4461	-0.136	5.670	0.966
22-Feb-99	295	51	0.4551	-0.113	5.687	0.966
24-Nov-98	297	52	0.4640	-0.090	5.694	0.966
24-Jul-97	312	53	0.4730	-0.068	5.743	0.966
8-Jun-94	346	54	0.4820	-0.045	5.846	0.966
25-Nov-97	349	55	0.4910	-0.023	5.855	0.966
18-Dec-97	351	56	0.5000	0.000	5.861	0.965
21-Jul-93	375	57	0.5090	0.023	5.927	0.965
23-Jun-93	384	58	0.5180	0.045	5.951	0.964
26-Feb-98	384	59	0.5270	0.068	5.951	0.964
4-Jan-99	385	60	0.5360	0.090	5.953	0.964
28-Jun-95	395	61	0.5449	0.113	5.979	0.964
9-Mar-99	446	62	0.5539	0.136	6.100	0.965
9-Mar-99	452	63	0.5629	0.158	6.114	0.964
27-Dec-95	492	64	0.5719	0.181	6.198	0.963
23-Mar-94	502	65	0.5809	0.204	6.219	0.962
15-Jul-99	508	66	0.5899	0.227	6.230	0.961
20-Jun-96	510	67	0.5989	0.250	6.234	0.959
8-Feb-99	527	68	0.6079	0.274	6.267	0.958
13-Jun-95	533	69	0.6169	0.297	6.279	0.957
20-May-94	542	70	0.6258	0.321	6.295	0.957
7-Mar-94	580	71	0.6348	0.345	6.363	0.956
7-Mar-95	585	72	0.6438	0.369	6.372	0.955
13-Apr-99	610	73	0.6528	0.393	6.413	0.954
3-May-94	612	74	0.6618	0.417	6.417	0.952
6-Apr-94	632	75	0.6708	0.442	6.449	0.952
9-May-96	641	76	0.6798	0.467	6.463	0.951
19-Mar-98	676	77	0.6888	0.492	6.516	0.951
25-Jun-97	682	78	0.6978	0.518	6.525	0.950
27-Apr-95	685	79	0.7067	0.544	6.529	0.950
14-Jan-99	689	80	0.7157	0.570	6.535	0.952
14-Apr-95	775	81	0.7247	0.597	6.653	0.957
9-Feb-95	780	82	0.7337	0.624	6.659	0.958
10-Jan-95	827	83	0.7427	0.652	6.718	0.961
24-May-95	828	84	0.7517	0.680	6.719	0.963
28-Feb-96	880	85	0.7607	0.708	6.780	0.968
2-Jun-93	886	86	0.7697	0.738	6.787	0.973
20-Apr-93	1000	87	0.7787	0.768	6.908	0.983
6-May-99	1130	88	0.7876	0.798	7.030	0.986
30-Dec-98	1180	89	0.7966	0.830	7.073	0.985
18-Jan-96	1200	90	0.8056	0.862	7.090	0.984
23-Mar-93	1260	91	0.8146	0.895	7.139	0.983
11-May-95	1260	92	0.8236	0.929	7.139	0.982
18-Apr-94	1310	93	0.8326	0.964	7.178	0.981
18-Apr-96	1320	94	0.8416	1.001	7.185	0.981
23-Mar-95	1330	95	0.8506	1.039	7.193	0.979
29-May-98	1350	96	0.8596	1.078	7.208	0.977
5-Apr-93	1380	97	0.8685	1.120	7.230	0.975
17-Apr-97	1500	98	0.8775	1.163	7.313	0.972
11-May-98	1530	99	0.8865	1.208	7.333	0.970
3-May-93	1620	100	0.8955	1.256	7.390	0.968
16-May-91	1670	101	0.9045	1.308	7.421	0.968
15-May-91	1700	102	0.9135	1.363	7.438	0.970
17-May-91	1730	103	0.9225	1.422	7.456	0.970
19-May-93	1770	104	0.9315	1.487	7.479	0.967
29-Mar-97	1860	105	0.9404	1.559	7.528	0.960
24-Apr-98	2020	106	0.9494	1.639	7.611	0.949
2-Jun-99	2160	107	0.9584	1.733	7.678	0.940
20-Apr-99	2180	108	0.9674	1.844	7.687	
27-May-99	2760	109	0.9764	1.985	7.923	
18-May-91	2770	110	0.9854	2.181	7.927	
25-May-99	4190	111	0.9944	2.535	8.340	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SF271 **Date:** 30-Jun-00
Chemical: tCd **Analyst:** B.Walthall
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	35,075	655	9	25	0.00	0.00	0.00
SD:	966	753	4	39	1.00	1.00	1.00
CV:	0.03	1.15	0.45	1.57			
Min:	33,373	67	3	3.7	-0.78	-1.60	-0.54
Max:	36,410	4,190	21	311	4.70	2.98	7.26
Median:	34,837	390	9	16	-0.35	-0.08	-0.22

tCd SF271 : Concentration v. Discharge, Q

Conc. = mQ+b (r2=0.155) update r2 **0.16** 0.155

r2 Q,[COC]:	0.16	[tCd]	Q	
slope, m:	0.0	10	67.0	
intercept, b:	10.3	9	655.0	
N: 68		2	4190	

LnConc. = mLn(Q)+b (r2=0.419) update r2 0.42 0.419

r2 lnQ,ln[COC]:	0.42	ln[tCd]	ln Q	[tCd]	Q
slope, m:	-0.29	2.58	4.20	13	67
intercept, b:	3.78	1.92	6.48	7	655
N: 68		1.39	8.34	4	4,190

Q = mTime +b r2: 0.005 m: 0.0529 b: -1199

LnQ = mTime +b 0.015 0.00014 1.16

for graph: tCd 0

N= 68

update for new data	Sampling Date	Q Discharge cfs	tCd Concentration ug/L	tCd Load lbs/day	Ln Q	Ln tCd Conc.	Ln tCd Load	SF271 Standardized Values = (x - Avg)/SD Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	1700	2.8	25.6	7.44	1.03	3.24	1.39	-1.53	0.01
MFG	16-May-91	1670	2.5	22.5	7.42	0.92	3.11	1.35	-1.60	-0.07
MFG	17-May-91	1730	2.9	27.0	7.46	1.06	3.30	1.43	-1.50	0.05
MFG	18-May-91	2770	20.9	311.5	7.93	3.04	5.74	2.81	2.98	7.26
MFG	1-Oct-91	94	15	7.6	4.54	2.71	2.03	-0.75	1.51	-0.44
MFG	2-Oct-91	94	14	7.1	4.54	2.64	1.96	-0.75	1.26	-0.46
MFG	3-Oct-91	96	8	4.1	4.56	2.08	1.42	-0.74	-0.23	-0.53
MFG	4-Oct-91	98	9	4.7	4.58	2.20	1.56	-0.74	0.02	-0.52
MFG	5-Oct-91	101	9	4.9	4.62	2.20	1.59	-0.74	0.02	-0.51
IDEQ	29-Oct-93	100	8.9	4.8	4.61	2.19	1.57	-0.74	-0.01	-0.51
IDEQ	30-Nov-93	105	10.4	5.9	4.65	2.34	1.77	-0.73	0.37	-0.49
IDEQ	21-Dec-93	130	11.8	8.3	4.87	2.47	2.11	-0.70	0.72	-0.43
IDEQ	21-Jan-94	205	9.8	10.8	5.32	2.28	2.38	-0.60	0.22	-0.36
IDEQ	17-Feb-94	122	14	9.2	4.80	2.64	2.22	-0.71	1.26	-0.40
IDEQ	7-Mar-94	580	7.2	22.5	6.36	1.97	3.11	-0.10	-0.43	-0.07
IDEQ	23-Mar-94	502	7.1	19.2	6.22	1.96	2.95	-0.20	-0.46	-0.15
IDEQ	6-Apr-94	632	5.7	19.4	6.45	1.74	2.96	-0.03	-0.81	-0.14
IDEQ	18-Apr-94	1310	4.6	32.4	7.18	1.53	3.48	0.87	-1.08	0.19
IDEQ	3-May-94	612	4.8	15.8	6.42	1.57	2.76	-0.06	-1.03	-0.24
IDEQ	20-May-94	542	4.8	14.0	6.30	1.57	2.64	-0.15	-1.03	-0.28
IDEQ	8-Jun-94	346	6.7	12.5	5.85	1.90	2.52	-0.41	-0.56	-0.32
IDEQ	24-Jun-94	198	7.3	7.8	5.29	1.99	2.05	-0.61	-0.41	-0.44
IDEQ	23-Jul-94	116	8.4	5.2	4.75	2.13	1.66	-0.72	-0.13	-0.50
IDEQ	16-Aug-94	79	8.6	3.7	4.37	2.15	1.30	-0.77	-0.08	-0.54
IDEQ	5-Oct-94	67	12	4.3	4.20	2.48	1.46	-0.78	0.77	-0.53
IDEQ	16-Nov-94	139	19	14.2	4.93	2.94	2.65	-0.69	2.51	-0.28
IDEQ	14-Dec-94	217	16	18.7	5.38	2.77	2.93	-0.58	1.76	-0.16
IDEQ	10-Jan-95	827	13	57.8	6.72	2.56	4.06	0.23	1.01	0.83
IDEQ	9-Feb-95	780	7.1	29.8	6.66	1.96	3.39	0.17	-0.46	0.12
IDEQ	7-Mar-95	585	7.6	23.9	6.37	2.03	3.17	-0.09	-0.33	-0.03
IDEQ	23-Mar-95	1330	8.8	63.0	7.19	2.17	4.14	0.90	-0.03	0.96
IDEQ	14-Apr-95	775	8.6	35.9	6.65	2.15	3.58	0.16	-0.08	0.27
IDEQ	27-Apr-95	685	6.8	25.1	6.53	1.92	3.22	0.04	-0.53	0.00
IDEQ	11-May-95	1260	4.8	32.5	7.14	1.57	3.48	0.80	-1.03	0.19
IDEQ	24-May-95	828	6.6	29.4	6.72	1.89	3.38	0.23	-0.58	0.11
IDEQ	13-Jun-95	533	5.8	16.6	6.28	1.76	2.81	-0.16	-0.78	-0.21
IDEQ	28-Jun-95	395	6	12.8	5.98	1.79	2.55	-0.35	-0.73	-0.31
IDEQ	12-Jul-95	261	8.7	12.2	5.56	2.16	2.50	-0.52	-0.06	-0.33
IDEQ	26-Jul-95	189	10	10.2	5.24	2.30	2.32	-0.62	0.27	-0.38
IDEQ	15-Aug-95	159	9.8	8.4	5.07	2.28	2.13	-0.66	0.22	-0.42
IDEQ	14-Sep-95	130	8.8	6.2	4.87	2.17	1.82	-0.70	-0.03	-0.48
URS	4-Nov-97	248	8.5	11.3	5.51	2.14	2.43	-0.54	-0.11	-0.35
IDEQ	24-Apr-98	2020	6.9	75.0	7.61	1.93	4.32	1.81	-0.51	1.27
URS	11-May-98	1530	3.5	28.8	7.33	1.25	3.36	1.16	-1.35	0.09
IDEQ	29-May-98	1350	5.2	37.8	7.21	1.65	3.63	0.92	-0.93	0.32

IDEQ	27-Jul-98	161	9.2	8.0	5.08	2.22	2.08	-0.66	0.97	-0.43
IDEQ	25-Aug-98	120	12	7.7	4.79	2.48	2.05	-0.71	0.77	-0.44
IDEQ	23-Sep-98	102	14	7.7	4.62	2.64	2.04	-0.73	1.26	-0.44
USGS	26-Oct-98	98	14	7.4	4.58	2.64	2.00	-0.74	1.26	-0.45
IDEQ	27-Oct-98	88	13	6.2	4.48	2.56	1.82	-0.75	1.01	-0.48
USGS	17-Nov-98	162	15	13.1	5.09	2.71	2.57	-0.66	1.51	-0.30
USGS	17-Nov-98	162	16	13.9	5.09	2.77	2.64	-0.66	1.76	-0.28
IDEQ	24-Nov-98	297	17	27.2	5.69	2.83	3.30	-0.48	2.01	0.05
USGS	9-Dec-98	275	13	19.2	5.62	2.56	2.96	-0.50	1.01	-0.15
USGS	30-Dec-98	1180	6	38.1	7.07	1.79	3.64	0.70	-0.73	0.33
IDEQ	4-Jan-99	385	8.6	17.8	5.95	2.15	2.88	-0.36	-0.08	-0.18
IDEQ	14-Jan-99	689	8.8	32.6	6.54	2.17	3.48	0.05	-0.03	0.19
USGS	8-Feb-99	527	11	31.2	6.27	2.40	3.44	-0.17	0.52	0.15
USGS	9-Mar-99	452	9	21.9	6.11	2.20	3.09	-0.27	0.02	-0.08
USGS	9-Mar-99	446	9	21.6	6.10	2.20	3.07	-0.28	0.02	-0.09
USGS	13-Apr-99	610	7	23.0	6.41	1.95	3.13	-0.06	-0.48	-0.05
USGS	20-Apr-99	2180	4	46.9	7.69	1.39	3.85	2.03	-1.23	0.55
USGS	6-May-99	1130	4	24.3	7.03	1.39	3.19	0.63	-1.23	-0.02
USGS	25-May-99	4190	5	112.7	8.34	1.61	4.72	4.70	-0.98	2.22
USGS	2-Jun-99	2160	3	34.9	7.68	1.10	3.55	2.06	-1.48	0.25
USGS	15-Jul-99	508	5	13.7	6.23	1.61	2.61	-0.20	-0.98	-0.29
USGS	9-Aug-99	237	8	10.2	5.47	2.06	2.32	-0.56	-0.23	-0.38
USGS	7-Sep-99	140	8	6.0	4.94	2.08	1.80	-0.68	-0.23	-0.48

tCd

Concentration over time analysis

				r2	Slope, m
	tCd	SF271		Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.001	0.00002
	Time	Ln[COC]	[COC]		
first:	15-May-91	2.05	8		
mid:	17-May-95	2.08	8		
last:	7-Sep-99	2.11	8		
	LnConc.=mTime+b >'96 r2, m:			0.458	-0.00352
	27-Oct-98	2.55	13		
	7-Sep-99	1.44	4		

Load over time analysis

	tCd	SF271		Load over time	
	LnLoad=mTime+b All data r2, m:			0.031	0.00015
	Time	LnLoad	Load		
first:	15-May-91	2.52	12		
mid:	17-May-95	2.74	16		
last:	7-Sep-99	2.98	20		
	LnLoad=mTime+b >'96 r2, m:			0.0000043	0.00002
	27-Oct-98	3.05	21		
	7-Sep-99	3.06	21		

max r2:	0.692		max r2:	0.884	
Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.001	0.00002	1.45	0.031	0.00015	-2.61
0.001	-0.00001	2.50	0.038	0.00017	-3.35
0.010	-0.00005	3.80	0.045	0.00019	-4.05
0.034	-0.00009	5.13	0.056	0.00022	-5.06
0.016	-0.00006	4.18	0.153	0.00034	-9.31
0.008	-0.00004	3.57	0.143	0.00034	-9.16
0.003	-0.00002	2.95	0.131	0.00033	-8.90
0.003	-0.00003	3.04	0.105	0.00030	-7.80
0.002	-0.00002	2.96	0.082	0.00027	-6.70
0.002	-0.00002	2.87	0.059	0.00023	-5.43
0.001	-0.00002	2.80	0.045	0.00020	-4.35
0.001	-0.00001	2.55	0.035	0.00018	-3.41
0.000	0.00000	2.13	0.028	0.00016	-2.78
0.000	0.00001	1.90	0.024	0.00015	-2.42
0.002	0.00002	1.22	0.018	0.00013	-1.82
0.001	0.00002	1.31	0.021	0.00015	-2.30
0.001	0.00002	1.44	0.023	0.00015	-2.60
0.000	0.00001	1.87	0.025	0.00016	-2.96
0.001	-0.00002	2.66	0.035	0.00020	-4.09
0.004	-0.00004	3.48	0.035	0.00020	-4.26
0.012	-0.00006	4.40	0.033	0.00020	-4.25
0.016	-0.00008	4.86	0.030	0.00019	-4.04
0.020	-0.00009	5.24	0.021	0.00016	-2.97
0.021	-0.00009	5.40	0.010	0.00011	-1.03
0.021	-0.00010	5.54	0.001	0.00003	1.90
0.015	-0.00008	5.01	0.002	-0.00005	4.82
0.003	-0.00004	3.44	0.004	-0.00007	5.61
0.000	0.00000	2.02	0.005	-0.00008	5.90
0.003	0.00003	0.87	0.000	-0.00002	3.57
0.002	0.00003	1.06	0.000	0.00001	2.53
0.001	0.00003	1.09	0.001	0.00003	1.90
0.003	0.00004	0.71	0.011	0.00013	-1.70
0.004	0.00005	0.32	0.025	0.00020	-4.27
0.002	0.00004	0.67	0.037	0.00025	-6.17
0.000	-0.00001	2.55	0.065	0.00035	-9.67
0.002	-0.00004	3.54	0.102	0.00046	-13.83
0.011	-0.00010	5.63	0.116	0.00053	-16.34
0.029	-0.00018	8.45	0.116	0.00058	-18.17
0.033	-0.00021	9.69	0.116	0.00065	-20.65
0.027	-0.00022	10.21	0.102	0.00071	-22.86
0.024	-0.00027	11.82	0.068	0.00074	-23.85
0.050	-0.00069	27.18	0.003	0.00028	-7.17
0.063	-0.00091	34.97	0.000	-0.00010	6.51
0.089	-0.00117	44.33	0.018	0.00077	-24.76
0.258	-0.00204	75.81	0.041	0.00124	-42.02

0.456	-0.00292	107.84	0.108	0.00217	-75.51
0.514	-0.00334	123.08	0.071	0.00184	-63.72
0.517	-0.00355	130.77	0.036	0.00136	-46.35
0.490	-0.00358	131.92	0.010	0.00074	-23.92
0.458	-0.00352	129.75	0.000	0.00002	2.51
0.427	-0.00351	129.20	0.028	-0.00115	44.85
0.377	-0.00329	121.11	0.064	-0.00180	68.55
0.303	-0.00289	106.83	0.128	-0.00267	99.80
0.202	-0.00222	82.26	0.136	-0.00297	110.99
0.112	-0.00162	60.67	0.196	-0.00387	143.55
0.149	-0.00202	75.32	0.169	-0.00383	142.16
0.113	-0.00191	71.06	0.267	-0.00531	195.80
0.065	-0.00159	59.58	0.275	-0.00609	224.20
0.002	-0.00029	12.36	0.287	-0.00701	257.59
0.022	0.00095	-32.86	0.364	-0.00875	320.72
0.293	0.00362	-129.74	0.535	-0.01253	458.28
0.676	0.00580	-209.23	0.677	-0.01579	576.76
0.692	0.00664	-239.77	0.665	-0.01747	637.93
0.689	0.00760	-274.56	0.884	-0.02436	888.73

update for EV, CV:

tCd
LN Analysis
Load

SF271
tCd
Load Data, EV=25.1 lbs/day CV=1.57
Load Data-based LN

		u	ln tCd Load	tCd Load
Avg:	**25**	3	5.9	382
SD:	**39**	0	2.60	13
CV:	**1.57**	-3	-0.75	0.5
Min:	**3.7**			
Max:	**311**			
Median:	**16**			

25 25.1
1.57 1.57

u=mLn(Load)+ b:

update for r2, EV, CV: **r2=0.962, EV=23.8lbs/day CV=1.08; max r2=0.97**

r2 u,lnLoad:	0.962	u	lnLoad	Load
slope, m:	1.135	3	5.42	227
intercept, b:	-3.153	0	2.78	16
N:	68	-3	0.14	1.1
E[Load]:	23.8	Parameter Estimates		
SD[Load]:	26	from LN regression		
CV[Load]:	1.08	update graph label		

0.962 0.962
23.8 23.8
1.1 1.08
max r2
0.969

N: 68

Date	tCd Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
16-Aug-94	3.7	1	0.0092	-2.359	1.296	0.962
3-Oct-91	4.1	2	0.0238	-1.981	1.419	0.967
5-Oct-94	4.3	3	0.0385	-1.769	1.465	0.969
4-Oct-91	4.7	4	0.0531	-1.615	1.557	0.969
29-Oct-93	4.8	5	0.0678	-1.493	1.566	0.969
5-Oct-91	4.9	6	0.0824	-1.389	1.587	0.969
23-Jul-94	5.2	7	0.0971	-1.298	1.657	0.968
30-Nov-93	5.9	8	0.1117	-1.217	1.771	0.966
7-Sep-99	6.0	9	0.1264	-1.144	1.796	0.966
27-Oct-98	6.2	10	0.1410	-1.076	1.817	0.965
14-Sep-95	6.2	11	0.1557	-1.012	1.817	0.963
2-Oct-91	7.1	12	0.1703	-0.953	1.957	0.962
26-Oct-98	7.4	13	0.1850	-0.897	1.999	0.961
1-Oct-91	7.6	14	0.1996	-0.843	2.026	0.959
23-Sep-98	7.7	15	0.2143	-0.792	2.039	0.958
25-Aug-98	7.7	16	0.2289	-0.742	2.047	0.956
24-Jun-94	7.8	17	0.2436	-0.695	2.051	0.955
27-Jul-98	8.0	18	0.2582	-0.649	2.076	0.952
21-Dec-93	8.3	19	0.2729	-0.604	2.111	0.950
15-Aug-95	8.4	20	0.2875	-0.561	2.126	0.948
17-Feb-94	9.2	21	0.3022	-0.518	2.218	0.946
26-Jul-95	10.2	22	0.3168	-0.477	2.319	0.943
9-Aug-99	10.2	23	0.3315	-0.436	2.322	0.941
21-Jan-94	10.8	24	0.3462	-0.396	2.380	0.938
4-Nov-97	11.3	25	0.3608	-0.356	2.428	0.935
12-Jul-95	12.2	26	0.3755	-0.317	2.503	0.932
8-Jun-94	12.5	27	0.3901	-0.279	2.523	0.930
28-Jun-95	12.8	28	0.4048	-0.241	2.546	0.927
17-Nov-98	13.1	29	0.4194	-0.203	2.571	0.925
15-Jul-99	13.7	30	0.4341	-0.166	2.615	0.921
17-Nov-98	13.9	31	0.4487	-0.129	2.635	0.918
20-May-94	14.0	32	0.4634	-0.092	2.639	0.915
16-Nov-94	14.2	33	0.4780	-0.055	2.654	0.911
3-May-94	15.8	34	0.4927	-0.018	2.760	0.906
13-Jun-95	16.6	35	0.5073	0.018	2.811	0.903
4-Jan-99	17.8	36	0.5220	0.055	2.880	0.899
14-Dec-94	18.7	37	0.5366	0.092	2.927	0.897
23-Mar-94	19.2	38	0.5513	0.129	2.954	0.896
9-Dec-98	19.2	39	0.5659	0.166	2.957	0.895
6-Apr-94	19.4	40	0.5806	0.203	2.964	0.893
9-Mar-99	21.6	41	0.5952	0.241	3.072	0.890
9-Mar-99	21.9	42	0.6099	0.279	3.086	0.891
16-May-91	22.5	43	0.6245	0.317	3.112	0.892
7-Mar-94	22.5	44	0.6392	0.356	3.112	0.893
13-Apr-99	23.0	45	0.6538	0.396	3.134	0.893

7-Mar-95	23.9	46	0.6685	0.436	3.175	0.893
6-May-99	24.3	47	0.6832	0.477	3.191	0.895
27-Apr-95	25.1	48	0.6978	0.518	3.221	0.896
15-May-91	25.6	49	0.7125	0.561	3.243	0.897
17-May-91	27.0	50	0.7271	0.604	3.296	0.899
24-Nov-98	27.2	51	0.7418	0.649	3.302	0.903
11-May-98	28.8	52	0.7564	0.695	3.361	0.905
24-May-95	29.4	53	0.7711	0.742	3.381	0.912
9-Feb-95	29.8	54	0.7857	0.792	3.394	0.918
8-Feb-99	31.2	55	0.8004	0.843	3.440	0.924
18-Apr-94	32.4	56	0.8150	0.897	3.479	0.932
11-May-95	32.5	57	0.8297	0.953	3.482	0.942
14-Jan-99	32.6	58	0.8443	1.012	3.485	0.950
2-Jun-99	34.9	59	0.8590	1.076	3.551	0.955
14-Apr-95	35.9	60	0.8736	1.144	3.580	0.962
29-May-98	37.8	61	0.8883	1.217	3.631	0.966
30-Dec-98	38.1	62	0.9029	1.298	3.640	0.969
20-Apr-99	46.9	63	0.9176	1.389	3.848	0.961
10-Jan-95	57.8	64	0.9322	1.493	4.058	0.959
23-Mar-95	63.0	65	0.9469	1.615	4.143	
24-Apr-98	75.0	66	0.9615	1.769	4.317	
25-May-99	112.7	67	0.9762	1.981	4.725	
18-May-91	311.5	68	0.9908	2.359	5.741	

		update for EV, CV:			
tCd		**SF271**		9	8.93
LN Analysis		**tCd**		0.45	0.449
Concentration		**Conc. Data, EV=8.93 ug/L CV=0.449**			
Avg:	**9**	**Data-based LN**			
SD:	**4**	u	ln[tCd]	[tCd]	
CV:	**0.45**	3	3.4	29	
Min:	**3**	0	2.10	8	
Max:	**21**	-3	0.81	2	
Median:	**9**				

				0.980	0.98
u=mLn(Conc.)+b:				9.1	9.06
update for r2, EV, CV:	**r2=0.98, EV=9.06 ug/L CV=0.52; max r2=0.98**			0.520	0.52
r2 u,lnConc:	0.980	u	lnConc.	Conc.	
slope, m:	2.044	3	3.55	35	
intercept, b:	-4.261	0	2.08	8	
N:	68	-3	0.62	2	
E[Conc]:	9.1	Parameter Estimates			
SD[Conc]:	5	from LN regression			
CV[Conc]:	0.52	update graph label			

	tCd	N: 68				max r2 0.982
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L Ranked**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
update and rank for new data						
16-May-91	2.5	1	0.0092	-2.359	0.916	0.980
15-May-91	2.8	2	0.0238	-1.981	1.030	0.978
17-May-91	2.9	3	0.0385	-1.769	1.065	0.977
2-Jun-99	3	4	0.0531	-1.615	1.099	0.977
11-May-98	3.5	5	0.0678	-1.493	1.253	0.981
20-Apr-99	4	6	0.0824	-1.389	1.386	0.982
6-May-99	4	7	0.0971	-1.298	1.386	0.982
18-Apr-94	4.6	8	0.1117	-1.217	1.526	0.982
3-May-94	4.8	9	0.1264	-1.144	1.569	0.982
20-May-94	4.8	10	0.1410	-1.076	1.569	0.981
11-May-95	4.8	11	0.1557	-1.012	1.569	0.980
25-May-99	5	12	0.1703	-0.953	1.609	0.980
15-Jul-99	5	13	0.1850	-0.897	1.609	0.980
29-May-98	5.2	14	0.1996	-0.843	1.649	0.981
6-Apr-94	5.7	15	0.2143	-0.792	1.740	0.982
13-Jun-95	5.8	16	0.2289	-0.742	1.758	0.981
28-Jun-95	6	17	0.2436	-0.695	1.792	0.980
30-Dec-98	6	18	0.2582	-0.649	1.792	0.980
24-May-95	6.6	19	0.2729	-0.604	1.887	0.979
8-Jun-94	6.7	20	0.2875	-0.561	1.902	0.978
27-Apr-95	6.8	21	0.3022	-0.518	1.917	0.978
24-Apr-98	6.9	22	0.3168	-0.477	1.932	0.977
13-Apr-99	7	23	0.3315	-0.436	1.946	0.976
23-Mar-94	7.1	24	0.3462	-0.396	1.960	0.975
9-Feb-95	7.1	25	0.3608	-0.356	1.960	0.973
7-Mar-94	7.2	26	0.3755	-0.317	1.974	0.972
24-Jun-94	7.3	27	0.3901	-0.279	1.988	0.971
7-Mar-95	7.6	28	0.4048	-0.241	2.028	0.969
3-Oct-91	8	29	0.4194	-0.203	2.079	0.968
9-Aug-99	8	30	0.4341	-0.166	2.079	0.967
7-Sep-99	8	31	0.4487	-0.129	2.079	0.966
23-Jul-94	8.4	32	0.4634	-0.092	2.128	0.965
4-Nov-97	8.5	33	0.4780	-0.055	2.140	0.964
16-Aug-94	8.6	34	0.4927	-0.018	2.152	0.964
14-Apr-95	8.6	35	0.5073	0.018	2.152	0.964
4-Jan-99	8.6	36	0.5220	0.055	2.152	0.963
12-Jul-95	8.7	37	0.5366	0.092	2.163	0.961
23-Mar-95	8.8	38	0.5513	0.129	2.175	0.960
14-Sep-95	8.8	39	0.5659	0.166	2.175	0.958
14-Jan-99	8.8	40	0.5806	0.203	2.175	0.956
29-Oct-93	8.9	41	0.5952	0.241	2.186	0.953
4-Oct-91	9	42	0.6099	0.279	2.197	0.950
5-Oct-91	9	43	0.6245	0.317	2.197	0.946
9-Mar-99	9	44	0.6392	0.356	2.197	0.943
9-Mar-99	9	45	0.6538	0.396	2.197	0.942

27-Jul-98	9.2	46	0.6685	0.436	2.219	0.943
21-Jan-94	9.8	47	0.6832	0.477	2.282	0.947
15-Aug-95	9.8	48	0.6978	0.518	2.282	0.947
26-Jul-95	10	49	0.7125	0.561	2.303	0.952
30-Nov-93	10.4	50	0.7271	0.604	2.342,	0.962
8-Feb-99	11	51	0.7418	0.649	2.398	0.973
21-Dec-93	11.8	52	0.7564	0.695	2.468	0.980
5-Oct-94	12	53	0.7711	0.742	2.485	0.978
25-Aug-98	12	54	0.7857	0.792	2.485	0.977
10-Jan-95	13	55	0.8004	0.843	2.565	0.980
27-Oct-98	13	56	0.8150	0.897	2.565	0.979
9-Dec-98	13	57	0.8297	0.953	2.565	0.976
2-Oct-91	14	58	0.8443	1.012	2.639	0.974
17-Feb-94	14	59	0.8590	1.076	2.639	0.980
23-Sep-98	14	60	0.8736	1.144	2.639	0.981
26-Oct-98	14	61	0.8883	1.217	2.639	0.978
1-Oct-91	15	62	0.9029	1.298	2.708	0.976
17-Nov-98	15	63	0.9176	1.389	2.708	0.976
14-Dec-94	16	64	0.9322	1.493	2.773	0.968
17-Nov-98	16	65	0.9469	1.615	2.773	
24-Nov-98	17	66	0.9615	1.769	2.833	
16-Nov-94	19	67	0.9762	1.981	2.944	
18-May-91	20.9	68	0.9908	2.359	3.040	

update for EV, CV:

tCd		SF271			655	655
LN Analysis		tCd			1.15	1.15
Discharge, Q		Q Data, EV=655 cfs CV=1.15				
Avg:	655	Q Data-based LN				
SD:	753	u	lnQ	Q		
CV:	1.15	3	8.8	6741		
Min:	67	0	6.06	430		
Max:	4,190	-3	3.31	27		
Median:	390					
					0.956	0.956
					697.3	697
u=mLn(Q)+b:					1.58	1.58

update for r2, EV, CV: **r2=0.956, EV=697 cfs CV=1.58; max r2=0.98**

r2 u,lnQ:	0.956	u	lnQ	Q
slope, m:	0.893	3	9.28	10722
intercept, b:	-5.286	0	5.92	372
N:	68	-3	2.56	13
E[Q]:	697.3	Parameter Estimates		
SD[Q]:	1104	from LN regression		
CV[Q]:	1.58	update graph label		

	Q	N: 68				max r2 0.983
	Discharge	i	i-3/8 / N+1/4	u	Ln	r2
Date	cfs	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
5-Oct-94	67	1	0.0092	-2.359	4.205	0.956
16-Aug-94	79	2	0.0238	-1.981	4.369	0.964
27-Oct-98	88	3	0.0385	-1.769	4.477	0.969
1-Oct-91	94	4	0.0531	-1.615	4.543	0.973
2-Oct-91	94	5	0.0678	-1.493	4.543	0.977
3-Oct-91	96	6	0.0824	-1.389	4.564	0.979
4-Oct-91	98	7	0.0971	-1.298	4.585	0.980
26-Oct-98	98	8	0.1117	-1.217	4.585	0.981
29-Oct-93	100	9	0.1264	-1.144	4.605	0.981
5-Oct-91	101	10	0.1410	-1.076	4.615	0.980
23-Sep-98	102	11	0.1557	-1.012	4.625	0.979
30-Nov-93	105	12	0.1703	-0.953	4.654	0.978
23-Jul-94	116	13	0.1850	-0.897	4.754	0.977
25-Aug-98	120	14	0.1996	-0.843	4.787	0.976
17-Feb-94	122	15	0.2143	-0.792	4.804	0.975
21-Dec-93	130	16	0.2289	-0.742	4.868	0.974
14-Sep-95	130	17	0.2436	-0.695	4.868	0.973
16-Nov-94	139	18	0.2582	-0.649	4.934	0.972
7-Sep-99	140	19	0.2729	-0.604	4.942	0.971
15-Aug-95	159	20	0.2875	-0.561	5.069	0.970
27-Jul-98	161	21	0.3022	-0.518	5.081	0.969
17-Nov-98	162	22	0.3168	-0.477	5.088	0.968
17-Nov-98	162	23	0.3315	-0.436	5.088	0.968
26-Jul-95	189	24	0.3462	-0.396	5.242	0.969
24-Jun-94	198	25	0.3608	-0.356	5.288	0.969
21-Jan-94	205	26	0.3755	-0.317	5.323	0.969
14-Dec-94	217	27	0.3901	-0.279	5.380	0.970
9-Aug-99	237	28	0.4048	-0.241	5.468	0.971
4-Nov-97	248	29	0.4194	-0.203	5.513	0.971
12-Jul-95	261	30	0.4341	-0.166	5.565	0.972
9-Dec-98	275	31	0.4487	-0.129	5.617	0.974
24-Nov-98	297	32	0.4634	-0.092	5.694	0.976
8-Jun-94	346	33	0.4780	-0.055	5.846	0.978
4-Jan-99	385	34	0.4927	-0.018	5.953	0.978
28-Jun-95	395	35	0.5073	0.018	5.979	0.977
9-Mar-99	446	36	0.5220	0.055	6.100	0.976
9-Mar-99	452	37	0.5366	0.092	6.114	0.975
23-Mar-94	502	38	0.5513	0.129	6.219	0.974
15-Jul-99	508	39	0.5659	0.166	6.230	0.972
8-Feb-99	527	40	0.5806	0.203	6.267	0.970
13-Jun-95	533	41	0.5952	0.241	6.279	0.969
20-May-94	542	42	0.6099	0.279	6.295	0.967
7-Mar-94	580	43	0.6245	0.317	6.363	0.964
7-Mar-95	585	44	0.6392	0.356	6.372	0.962
13-Apr-99	610	45	0.6538	0.396	6.413	0.960

3-May-94	612	46	0.6685	0.436	6.417	0.957
6-Apr-94	632	47	0.6832	0.477	6.449	0.955
27-Apr-95	685	48	0.6978	0.518	6.529	0.954
14-Jan-99	689	49	0.7125	0.561	6.535	0.952
14-Apr-95	775	50	0.7271	0.604	6.653	0.954
9-Feb-95	780	51	0.7418	0.649	6.659	0.952
10-Jan-95	827	52	0.7564	0.695	6.718	0.954
24-May-95	828	53	0.7711	0.742	6.719	0.959
6-May-99	1130	54	0.7857	0.792	7.030	0.983
30-Dec-98	1180	55	0.8004	0.843	7.073	0.981
11-May-95	1260	56	0.8150	0.897	7.139	0.979
18-Apr-94	1310	57	0.8297	0.953	7.178	0.977
23-Mar-95	1330	58	0.8443	1.012	7.193	0.975
29-May-98	1350	59	0.8590	1.076	7.208	0.971
11-May-98	1530	60	0.8736	1.144	7.333	0.966
16-May-91	1670	61	0.8883	1.217	7.421	0.962
15-May-91	1700	62	0.9029	1.298	7.438	0.965
17-May-91	1730	63	0.9176	1.389	7.456	0.963
24-Apr-98	2020	64	0.9322	1.493	7.611	0.950
2-Jun-99	2160	65	0.9469	1.615	7.678	
20-Apr-99	2180	66	0.9615	1.769	7.687	
18-May-91	2770	67	0.9762	1.981	7.927	
25-May-99	4190	68	0.9908	2.359	8.340	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SF271 **Date:** 30-Jun-00
Chemical: tPb **Analyst:** B.Walthall
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	35,091	649	63	583	0.00	0.00	0.00
SD:	967	748	126	2,328	1.00	1.00	1.00
CV:	0.03	1.15	1.99	4.00			
Min:	33,373	67	13	9.1	-0.78	-0.40	-0.25
Max:	36,410	4,190	790	17,808	4.73	5.77	7.40
Median:	34,843	385	26	51	-0.35	-0.30	-0.23

tPb SF271 : Concentration v. Discharge, Q

						Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.496)		update r2	0.50	0.496		r2:	0.003	0.014
r2 Q,[COC]:	0.50	[tPb]	Q			m:	0.0458	0.00013
slope, m:	0.1	-6	67.0			b:	-957	1.41
intercept, b:	-14.3	62	649.5					
N:	68	481	4190					
LnConc. = mLn(Q)+b (r2=0.268)		update r2		0.27	0.268			
r2 lnQ,ln[COC]:	0.27	ln[tPb]	ln Q	[tPb]	Q			
slope, m:	0.42	2.82	4.20	17	67			
intercept, b:	1.05	3.77	6.48	43	649			
N:	68	4.55	8.34	95	4,190			

N= 69

	Sampling Date	Q Discharge	tPb Concentration	tPb Load	Ln Q	Ln tPb Conc.	Ln tPb Load	for graph: tPb 0 SF271 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	1700	28	256.1	7.44	3.33	5.55	1.40	-0.28	-0.14
MFG	16-May-91	1670	24	215.6	7.42	3.18	5.37	1.36	-0.31	-0.16
MFG	17-May-91	1730	15	139.6	7.46	2.71	4.94	1.44	-0.38	-0.19
MFG	18-May-91	2770	169	2518.5	7.93	5.13	7.83	2.83	0.84	0.83
MFG	1-Oct-91	94	20	10.1	4.54	3.00	2.31	-0.74	-0.34	-0.25
MFG	2-Oct-91	94	22	11.1	4.54	3.09	2.41	-0.74	-0.33	-0.25
MFG	3-Oct-91	96	18	9.3	4.56	2.89	2.23	-0.74	-0.36	-0.25
MFG	4-Oct-91	98	18	9.5	4.58	2.89	2.25	-0.74	-0.36	-0.25
MFG	5-Oct-91	101	21	11.4	4.62	3.04	2.43	-0.73	-0.34	-0.25
IDEQ	29-Oct-93	100	17	9.1	4.61	2.83	2.21	-0.73	-0.37	-0.25
IDEQ	30-Nov-93	105	23	13.0	4.65	3.14	2.56	-0.73	-0.32	-0.24
IDEQ	21-Dec-93	130	15	10.5	4.87	2.71	2.35	-0.69	-0.38	-0.25
IDEQ	21-Jan-94	205	13	14.3	5.32	2.56	2.66	-0.59	-0.40	-0.24
IDEQ	17-Feb-94	122	16	10.5	4.80	2.77	2.35	-0.70	-0.38	-0.25
IDEQ	7-Mar-94	580	23	71.8	6.36	3.14	4.27	-0.09	-0.32	-0.22
IDEQ	23-Mar-94	502	21	56.7	6.22	3.04	4.04	-0.20	-0.34	-0.23
IDEQ	6-Apr-94	632	22	74.8	6.45	3.09	4.31	-0.02	-0.33	-0.22
IDEQ	18-Apr-94	1310	195	1374.3	7.18	5.27	7.23	0.88	1.04	0.34
IDEQ	3-May-94	612	16	52.7	6.42	2.77	3.96	-0.05	-0.38	-0.23
IDEQ	20-May-94	542	24	70.0	6.30	3.18	4.25	-0.14	-0.31	-0.22
IDEQ	8-Jun-94	346	20	37.2	5.85	3.00	3.62	-0.41	-0.34	-0.23
IDEQ	24-Jun-94	198	18	19.2	5.29	2.89	2.95	-0.60	-0.36	-0.24
IDEQ	23-Jul-94	116			4.75			-0.71		
IDEQ	16-Aug-94	79	24	10.2	4.37	3.18	2.32	-0.76	-0.31	-0.25
IDEQ	5-Oct-94	67	26	9.4	4.20	3.26	2.24	-0.78	-0.30	-0.25
IDEQ	16-Nov-94	139	17	12.7	4.93	2.83	2.54	-0.68	-0.37	-0.24
IDEQ	14-Dec-94	217	24	28.0	5.38	3.18	3.33	-0.58	-0.31	-0.24
IDEQ	10-Jan-95	827	127	565.1	6.72	4.84	6.34	0.24	0.51	-0.01
IDEQ	9-Feb-95	780	25	104.9	6.66	3.22	4.65	0.17	-0.30	-0.21
IDEQ	7-Mar-95	585	23	72.4	6.37	3.14	4.28	-0.09	-0.32	-0.22
IDEQ	23-Mar-95	1330	47	336.3	7.19	3.85	5.82	0.91	-0.13	-0.11
IDEQ	14-Apr-95	775	26	108.4	6.65	3.26	4.69	0.17	-0.30	-0.20
IDEQ	27-Apr-95	685	36	132.7	6.53	3.58	4.89	0.05	-0.22	-0.19
IDEQ	11-May-95	1260	65	440.6	7.14	4.17	6.09	0.82	0.01	-0.06
IDEQ	24-May-95	828	22	98.0	6.72	3.09	4.58	0.24	-0.33	-0.21
IDEQ	13-Jun-95	533	31	88.9	6.28	3.43	4.49	-0.16	-0.26	-0.21
IDEQ	28-Jun-95	395	21	44.6	5.98	3.04	3.80	-0.34	-0.34	-0.23
IDEQ	12-Jul-95	261	22	30.9	5.56	3.09	3.43	-0.52	-0.33	-0.24
IDEQ	26-Jul-95	189	31	31.5	5.24	3.43	3.45	-0.62	-0.26	-0.24
IDEQ	15-Aug-95	159	27	23.1	5.07	3.30	3.14	-0.66	-0.29	-0.24
IDEQ	14-Sep-95	130	25	17.5	4.87	3.22	2.86	-0.69	-0.30	-0.24
URS	4-Nov-97	248	28.2	37.6	5.51	3.34	3.63	-0.54	-0.28	-0.23
IDEQ	24-Apr-98	2020	688	7476.9	7.61	6.53	8.92	1.83	4.96	2.96
URS	11-May-98	1530	58.4	480.7	7.33	4.07	6.18	1.18	-0.04	-0.04
IDEQ	29-May-98	1350	55	399.5	7.21	4.01	5.99	0.94	-0.07	-0.08

IDEQ	27-Jul-98	161	26	22.5	5.08	3.26	3.11	-0.65	-0.30	-0.24
IDEQ	25-Aug-98	120	44	28.4	4.79	3.78	3.35	-0.71	-0.15	-0.24
IDEQ	23-Sep-98	102	35	19.2	4.62	3.56	2.96	-0.73	-0.22	-0.24
USGS	26-Oct-98	98	150	79.1	4.58	5.01	4.37	-0.74	0.69	-0.22
IDEQ	27-Oct-98	88	52	24.6	4.48	3.95	3.20	-0.75	-0.09	-0.24
USGS	17-Nov-98	162	61	53.2	5.09	4.11	3.97	-0.65	-0.02	-0.23
USGS	17-Nov-98	162	63	54.9	5.09	4.14	4.01	-0.65	0.00	-0.23
IDEQ	24-Nov-98	297	35	55.9	5.69	3.56	4.02	-0.47	-0.22	-0.23
USGS	9-Dec-98	275	32	47.3	5.62	3.47	3.86	-0.50	-0.25	-0.23
USGS	9-Dec-98	275	34	50.3	5.62	3.53	3.92	-0.50	-0.23	-0.23
USGS	30-Dec-98	1180	200	1269.7	7.07	5.30	7.15	0.71	1.08	0.30
IDEQ	4-Jan-99	385	23	47.6	5.95	3.14	3.86	-0.35	-0.32	-0.23
IDEQ	14-Jan-99	689	51	189.0	6.54	3.93	5.24	0.05	-0.10	-0.17
USGS	8-Feb-99	527	16	45.4	6.27	2.77	3.81	-0.16	-0.38	-0.23
USGS	9-Mar-99	452	15	36.5	6.11	2.71	3.60	-0.26	-0.38	-0.23
USGS	9-Mar-99	446	15	36.0	6.10	2.71	3.58	-0.27	-0.38	-0.23
USGS	13-Apr-99	610	21	68.9	6.41	3.04	4.23	-0.05	-0.34	-0.22
USGS	20-Apr-99	2180	190	2228.4	7.69	5.25	7.71	2.04	1.00	0.71
USGS	6-May-99	1130	44	267.5	7.03	3.78	5.59	0.64	-0.15	-0.14
USGS	25-May-99	4190	790	17808.3	8.34	6.67	9.79	4.73	5.77	7.40
USGS	2-Jun-99	2160	130	1510.7	7.68	4.87	7.32	2.02	0.53	0.40
USGS	15-Jul-99	508	29	79.3	6.23	3.37	4.37	-0.19	-0.27	-0.22
USGS	9-Aug-99	237	26	33.2	5.47	3.26	3.50	-0.55	-0.30	-0.24
USGS	7-Sep-99	140	19	14.3	4.94	2.94	2.66	-0.68	-0.35	-0.24

tPb

Concentration over time analysis

	tPb	SF271		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.122**	**0.00031**
	Time	**Ln[COC]**	**[COC]**		
first:	15-May-91	3.01	20		
mid:	24-May-95	3.46	32		
last:	7-Sep-99	3.95	52		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00001**
	27-Oct-98	3.82	46		
	7-Sep-99	3.83	46		

Load over time analysis

	tPb	SF271			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.062**	**0.00043**
	Time	**LnLoad**	**Load**		
first:	15-May-91	3.51	33		
mid:	24-May-95	4.14	63		
last:	7-Sep-99	4.81	123		
	LnLoad=mTime+b >'96 r2, m:			**0.037**	**0.00368**
	27-Oct-98	4.30	74		
	7-Sep-99	5.46	235		

max r2:	0.783		max r2:	0.898	
Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.122	0.00031	-7.34	0.062	0.00043	-10.81
0.124	0.00032	-7.67	0.076	0.00049	-12.88
0.122	0.00033	-7.88	0.093	0.00055	-15.06
0.111	0.00032	-7.57	0.107	0.00060	-17.05
0.169	0.00039	-10.27	0.176	0.00077	-23.01
0.164	0.00040	-10.42	0.161	0.00075	-22.35
0.161	0.00041	-10.73	0.147	0.00073	-21.71
0.153	0.00041	-10.80	0.129	0.00071	-20.69
0.144	0.00041	-10.87	0.111	0.00067	-19.49
0.140	0.00042	-11.25	0.095	0.00064	-18.37
0.131	0.00041	-10.91	0.082	0.00060	-16.80
0.127	0.00041	-10.88	0.071	0.00056	-15.49
0.116	0.00039	-10.32	0.059	0.00051	-13.79
0.102	0.00037	-9.54	0.050	0.00047	-12.33
0.092	0.00036	-8.93	0.038	0.00042	-10.33
0.086	0.00035	-8.73	0.039	0.00043	-10.64
0.079	0.00034	-8.38	0.037	0.00043	-10.65
0.072	0.00033	-8.05	0.038	0.00044	-11.05
0.115	0.00041	-10.97	0.065	0.00057	-15.89
0.101	0.00039	-10.26	0.064	0.00058	-16.12
0.095	0.00039	-10.12	0.065	0.00060	-16.84
0.085	0.00037	-9.64	0.060	0.00059	-16.52
0.073	0.00035	-8.87	0.049	0.00054	-14.87
0.073	0.00035	-8.87	0.049	0.00054	-14.87
0.066	0.00034	-8.54	0.034	0.00046	-11.75
0.061	0.00034	-8.29	0.020	0.00035	-8.06
0.048	0.00030	-7.10	0.011	0.00026	-4.51
0.040	0.00029	-6.48	0.006	0.00019	-2.18
0.067	0.00038	-9.66	0.014	0.00031	-6.53
0.060	0.00036	-9.26	0.015	0.00034	-7.36
0.050	0.00034	-8.54	0.014	0.00033	-7.30
0.056	0.00038	-9.75	0.025	0.00046	-11.73
0.048	0.00037	-9.30	0.028	0.00050	-13.45
0.048	0.00038	-9.88	0.034	0.00058	-16.30
0.065	0.00047	-13.02	0.061	0.00082	-24.83
0.052	0.00044	-12.06	0.070	0.00093	-29.01
0.048	0.00046	-12.58	0.080	0.00108	-34.14
0.031	0.00040	-10.65	0.077	0.00115	-36.87
0.017	0.00033	-7.91	0.064	0.00118	-37.88
0.010	0.00030	-7.05	0.051	0.00123	-39.79
0.002	0.00016	-1.91	0.028	0.00116	-37.34
0.013	-0.00076	31.45	0.000	0.00022	-3.20
0.041	-0.00157	60.90	0.003	-0.00074	31.47
0.000	-0.00015	9.33	0.018	0.00181	-60.95
0.000	-0.00002	4.50	0.051	0.00329	-114.46

0.000	0.00012	-0.60	0.108	0.00522	-184.22
0.001	-0.00033	15.86	0.084	0.00486	-171.20
0.002	-0.00044	19.93	0.064	0.00449	-157.94
0.005	-0.00075	31.13	0.039	0.00363	-126.88
0.000	0.00001	3.29	0.037	0.00368	-128.66
0.000	0.00012	-0.71	0.019	0.00274	-94.60
0.001	0.00038	-10.04	0.012	0.00227	-77.38
0.004	0.00077	-23.98	0.006	0.00165	-54.96
0.002	0.00061	-18.47	0.001	0.00083	-24.93
0.000	0.00030	-7.02	0.000	-0.00046	21.72
0.000	-0.00009	7.23	0.008	-0.00234	90.11
0.021	0.00227	-78.47	0.000	0.00046	-11.62
0.008	0.00156	-52.90	0.004	-0.00184	71.83
0.016	0.00245	-85.10	0.004	-0.00205	79.53
0.000	0.00016	-2.00	0.031	-0.00656	243.22
0.021	-0.00325	121.86	0.105	-0.01294	475.44
0.183	-0.01055	387.23	0.349	-0.02669	975.25
0.475	-0.01794	656.01	0.644	-0.03953	1442.00
0.425	-0.01894	692.50	0.619	-0.04305	1570.20
0.783	-0.03093	1128.75	0.898	-0.06290	2292.04

update for EV, CV:

tPb		SF271		
LN Analysis		tPb		
Load		Load Data, EV=583 lbs/day CV=4		
Avg:	583	Load Data-based LN		
SD:	2,328	u	ln tPb Load	tPb Load
CV:	4.00	3	10.0	22020
Min:	9.1	0	4.95	141
Max:	17,808	-3	-0.10	0.9
Median:	51			
		583	583	
		4.00	4	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.919, EV=369lbs/day CV=5.53; max r2=0.99**

r2 u,lnLoad:	0.919	u	lnLoad	Load	
slope, m:	0.538	3	9.76	17321	
intercept, b:	-2.252	0	4.18	66	
N:	68	-3	-1.39	0.2	
E[Load]:	369.2	Parameter Estimates			0.919 0.919
SD[Load]:	2043	from LN regression			369.2 369
CV[Load]:	5.53	update graph label			5.5 5.53

N: 69

Date	tPb Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.991 r2 forward
update and rank for new data						
23-Jul-94		1	0.0090	-2.365		
29-Oct-93	9.1	2	0.0235	-1.987	2.213	0.919
3-Oct-91	9.3	3	0.0379	-1.776	2.230	0.929
5-Oct-94	9.4	4	0.0523	-1.623	2.238	0.936
4-Oct-91	9.5	5	0.0668	-1.500	2.250	0.940
1-Oct-91	10.1	6	0.0812	-1.397	2.314	0.944
16-Aug-94	10.2	7	0.0957	-1.307	2.322	0.947
21-Dec-93	10.5	8	0.1101	-1.226	2.351	0.948
17-Feb-94	10.5	9	0.1245	-1.153	2.352	0.950
2-Oct-91	11.1	10	0.1390	-1.085	2.409	0.950
5-Oct-91	11.4	11	0.1534	-1.022	2.435	0.950
16-Nov-94	12.7	12	0.1679	-0.963	2.543	0.950
30-Nov-93	13.0	13	0.1823	-0.907	2.564	0.950
7-Sep-99	14.3	14	0.1968	-0.853	2.661	0.950
21-Jan-94	14.3	15	0.2112	-0.802	2.663	0.950
14-Sep-95	17.5	16	0.2256	-0.753	2.861	0.949
24-Jun-94	19.2	17	0.2401	-0.706	2.954	0.949
23-Sep-98	19.2	18	0.2545	-0.660	2.955	0.950
27-Jul-98	22.5	19	0.2690	-0.616	3.114	0.950
15-Aug-95	23.1	20	0.2834	-0.573	3.140	0.951
27-Oct-98	24.6	21	0.2978	-0.531	3.204	0.951
14-Dec-94	28.0	22	0.3123	-0.489	3.333	0.952
25-Aug-98	28.4	23	0.3267	-0.449	3.347	0.954
12-Jul-95	30.9	24	0.3412	-0.409	3.430	0.955
26-Jul-95	31.5	25	0.3556	-0.370	3.451	0.957
9-Aug-99	33.2	26	0.3700	-0.332	3.501	0.958
9-Mar-99	36.0	27	0.3845	-0.294	3.583	0.960
9-Mar-99	36.5	28	0.3989	-0.256	3.597	0.962
8-Jun-94	37.2	29	0.4134	-0.219	3.617	0.964
4-Nov-97	37.6	30	0.4278	-0.182	3.628	0.965
28-Jun-95	44.6	31	0.4422	-0.145	3.798	0.966
8-Feb-99	45.4	32	0.4567	-0.109	3.815	0.969
9-Dec-98	47.3	33	0.4711	-0.072	3.857	0.972
4-Jan-99	47.6	34	0.4856	-0.036	3.864	0.974
9-Dec-98	50.3	35	0.5000	0.000	3.918	0.976
3-May-94	52.7	36	0.5144	0.036	3.964	0.978
17-Nov-98	53.2	37	0.5289	0.072	3.973	0.980
17-Nov-98	54.9	38	0.5433	0.109	4.006	0.982
24-Nov-98	55.9	39	0.5578	0.145	4.024	0.984
23-Mar-94	56.7	40	0.5722	0.182	4.038	0.985
13-Apr-99	68.9	41	0.5866	0.219	4.233	0.985
20-May-94	70.0	42	0.6011	0.256	4.248	0.987
7-Mar-94	71.8	43	0.6155	0.294	4.273	0.989
7-Mar-95	72.4	44	0.6300	0.332	4.282	0.990
6-Apr-94	74.8	45	0.6444	0.370	4.315	0.991

26-Oct-98	79.1	46	0.6588	0.409	4.371	0.991
15-Jul-99	79.3	47	0.6733	0.449	4.373	0.991
13-Jun-95	88.9	48	0.6877	0.489	4.487	0.991
24-May-95	98.0	49	0.7022	0.531	4.585	0.990
9-Feb-95	104.9	50	0.7166	0.573	4.653	0.990
14-Apr-95	108.4	51	0.7310	0.616	4.686	0.989
27-Apr-95	132.7	52	0.7455	0.660	4.888	0.988
17-May-91	139.6	53	0.7599	0.706	4.939	0.987
14-Jan-99	189.0	54	0.7744	0.753	5.242	0.986
16-May-91	215.6	55	0.7888	0.802	5.374	0.984
15-May-91	256.1	56	0.8032	0.853	5.546	0.982
6-May-99	267.5	57	0.8177	0.907	5.589	0.981
23-Mar-95	336.3	58	0.8321	0.963	5.818	0.978
29-May-98	399.5	59	0.8466	1.022	5.990	0.975
11-May-95	440.6	60	0.8610	1.085	6.088	0.971
11-May-98	480.7	61	0.8755	1.153	6.175	0.966
10-Jan-95	565.1	62	0.8899	1.226	6.337	0.961
30-Dec-98	1269.7	63	0.9043	1.307	7.147	0.963
18-Apr-94	1374.3	64	0.9188	1.397	7.226	0.970
2-Jun-99	1510.7	65	0.9332	1.500	7.320	0.971
20-Apr-99	2218.4	66	0.9477	1.623	7.709	
18-May-91	2518.5	67	0.9621	1.776	7.831	
24-Apr-98	7476.9	68	0.9765	1.987	8.920	
25-May-99	17808.3	69	0.9910	2.365	9.787	

		update for EV, CV:			
tPb		SF271		63	63.3
LN Analysis		tPb		1.99	1.99
Concentration		Conc. Data, EV=63.3 ug/L CV=1.99			
Avg:	63	Data-based LN			
SD:	126	u	ln[tPb]	[tPb]	
CV:	1.99	3	7.1	1267	
Min:	13	0	3.35	28	
Max:	790	-3	-0.45	1	
Median:	26				

				0.813	0.813
u=mLn{Conc.}+b:				*55.7*	*55.7*
update for r2, EV, CV:	r2=0.813, EV=55.7 ug/L CV=1.34; max r2=0.96			1.340	1.34
r2 u,lnConc:	0.813	u	lnConc.	Conc.	
slope, m:	0.986	3	6.55	698	
intercept, b:	-3.458	0	3.51	33	
N:	68	-3	0.46	2	
E[Conc]:	55.7	Parameter Estimates			
SD[Conc]:	75	from LN regression			
CV[Conc]:	1.34	update graph label			

	tPb	N: 69				max r2 0.960
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
23-Jul-94		1	0.0090	-2.365		
21-Jan-94	13	2	0.0235	-1.987	2.565	0.813
17-May-91	15	3	0.0379	-1.776	2.708	0.820
21-Dec-93	15	4	0.0523	-1.623	2.708	0.828
9-Mar-99	15	5	0.0668	-1.500	2.708	0.835
9-Mar-99	15	6	0.0812	-1.397	2.708	0.840
17-Feb-94	16	7	0.0957	-1.307	2.773	0.843
3-May-94	16	8	0.1101	-1.226	2.773	0.848
8-Feb-99	16	9	0.1245	-1.153	2.773	0.851
29-Oct-93	17	10	0.1390	-1.085	2.833	0.854
16-Nov-94	17	11	0.1534	-1.022	2.833	0.858
3-Oct-91	18	12	0.1679	-0.963	2.890	0.861
4-Oct-91	18	13	0.1823	-0.907	2.890	0.865
24-Jun-94	18	14	0.1968	-0.853	2.890	0.868
7-Sep-99	19	15	0.2112	-0.802	2.944	0.871
1-Oct-91	20	16	0.2256	-0.753	2.996	0.874
8-Jun-94	20	17	0.2401	-0.706	2.996	0.879
5-Oct-91	21	18	0.2545	-0.660	3.045	0.883
23-Mar-94	21	19	0.2690	-0.616	3.045	0.888
28-Jun-95	21	20	0.2834	-0.573	3.045	0.893
13-Apr-99	21	21	0.2978	-0.531	3.045	0.897
2-Oct-91	22	22	0.3123	-0.489	3.091	0.901
6-Apr-94	22	23	0.3267	-0.449	3.091	0.906
24-May-95	22	24	0.3412	-0.409	3.091	0.911
12-Jul-95	22	25	0.3556	-0.370	3.091	0.915
30-Nov-93	23	26	0.3700	-0.332	3.135	0.918
7-Mar-94	23	27	0.3845	-0.294	3.135	0.923
7-Mar-95	23	28	0.3989	-0.256	3.135	0.927
4-Jan-99	23	29	0.4134	-0.219	3.135	0.931
16-May-91	24	30	0.4278	-0.182	3.178	0.934
20-May-94	24	31	0.4422	-0.145	3.178	0.938
16-Aug-94	24	32	0.4567	-0.109	3.178	0.941
14-Dec-94	24	33	0.4711	-0.072	3.178	0.944
9-Feb-95	25	34	0.4856	-0.036	3.219	0.946
14-Sep-95	25	35	0.5000	0.000	3.219	0.949
5-Oct-94	26	36	0.5144	0.036	3.258	0.951
14-Apr-95	26	37	0.5289	0.072	3.258	0.954
27-Jul-98	26	38	0.5433	0.109	3.258	0.956
9-Aug-99	26	39	0.5578	0.145	3.258	0.957
15-Aug-95	27	40	0.5722	0.182	3.296	0.958
15-May-91	28	41	0.5866	0.219	3.332	0.959
4-Nov-97	28.2	42	0.6011	0.256	3.339	0.960
15-Jul-99	29	43	0.6155	0.294	3.367	0.960
13-Jun-95	31	44	0.6300	0.332	3.434	0.959
26-Jul-95	31	45	0.6444	0.370	3.434	0.960

9-Dec-98	32	46	0.6588	0.409	3.466	0.959
9-Dec-98	34	47	0.6733	0.449	3.526	0.958
23-Sep-98	35	48	0.6877	0.489	3.555	0.957
24-Nov-98	35	49	0.7022	0.531	3.555	0.955
27-Apr-95	36	50	0.7166	0.573	3.584	0.952
25-Aug-98	44	51	0.7310	0.616	3.784	0.949
6-May-99	44	52	0.7455	0.660	3.784	0.947
23-Mar-95	47	53	0.7599	0.706	3.850	0.944
14-Jan-99	51	54	0.7744	0.753	3.932	0.940
27-Oct-98	52	55	0.7888	0.802	3.951	0.936
29-May-98	55	56	0.8032	0.853	4.007	0.930
11-May-98	58.4	57	0.8177	0.907	4.067	0.922
17-Nov-98	61	58	0.8321	0.963	4.111	0.912
17-Nov-98	63	59	0.8466	1.022	4.143	0.899
11-May-95	65	60	0.8610	1.085	4.174	0.884
10-Jan-95	127	61	0.8755	1.153	4.844	0.877
2-Jun-99	130	62	0.8899	1.226	4.868	0.870
26-Oct-98	150	63	0.9043	1.307	5.011	0.852
18-May-91	169	64	0.9188	1.397	5.130	0.836
20-Apr-99	190	65	0.9332	1.500	5.247	0.819
18-Apr-94	195	66	0.9477	1.623	5.273	
30-Dec-98	200	67	0.9621	1.776	5.298	
24-Apr-98	688	68	0.9765	1.987	6.534	
25-May-99	790	69	0.9910	2.365	6.672	

update for EV, CV:

tPb		**SF271**			649	649
LN Analysis		**tPb**			1.15	1.15
Discharge, Q		**Q Data, EV=649 cfs CV=1.15**				
Avg:	**649**	**Q Data-based LN**				
SD:	**748**	u	lnQ	Q		
CV:	**1.15**	3	8.8	6710		
Min:	**67**	0	6.05	426		
Max:	**4,190**	-3	3.30	27		
Median:	**385**					
					0.958	0.958
					687.4	687
	u=mLn(Q)+b:				1.56	1.56

update for r2, EV, CV: **r2=0.958, EV=687 cfs CV=1.56; max r2=0.98**

r2 u,lnQ:	0.958	u	lnQ	Q
slope, m:	0.900	3	9.25	10393
intercept, b:	-5.324	0	5.92	371
N:	69	-3	2.58	13
E[Q]:	687.4	Parameter Estimates		
SD[Q]:	1073	from LN regression		
CV[Q]:	1.56	update graph label		

N: 69

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.983 r2 forward
update and rank for new data						
5-Oct-94	67	1	0.0090	-2.365	4.205	0.958
16-Aug-94	79	2	0.0235	-1.987	4.369	0.966
27-Oct-98	88	3	0.0379	-1.776	4.477	0.971
1-Oct-91	94	4	0.0523	-1.623	4.543	0.975
2-Oct-91	94	5	0.0668	-1.500	4.543	0.979
3-Oct-91	96	6	0.0812	-1.397	4.564	0.981
4-Oct-91	98	7	0.0957	-1.307	4.585	0.982
26-Oct-98	98	8	0.1101	-1.226	4.585	0.983
29-Oct-93	100	9	0.1245	-1.153	4.605	0.983
5-Oct-91	101	10	0.1390	-1.085	4.615	0.983
23-Sep-98	102	11	0.1534	-1.022	4.625	0.982
30-Nov-93	105	12	0.1679	-0.963	4.654	0.981
23-Jul-94	116	13	0.1823	-0.907	4.754	0.980
25-Aug-98	120	14	0.1968	-0.853	4.787	0.979
17-Feb-94	122	15	0.2112	-0.802	4.804	0.978
21-Dec-93	130	16	0.2256	-0.753	4.868	0.977
14-Sep-95	130	17	0.2401	-0.706	4.868	0.976
16-Nov-94	139	18	0.2545	-0.660	4.934	0.976
7-Sep-99	140	19	0.2690	-0.616	4.942	0.975
15-Aug-95	159	20	0.2834	-0.573	5.069	0.974
27-Jul-98	161	21	0.2978	-0.531	5.081	0.973
17-Nov-98	162	22	0.3123	-0.489	5.088	0.972
17-Nov-98	162	23	0.3267	-0.449	5.088	0.972
26-Jul-95	189	24	0.3412	-0.409	5.242	0.973
24-Jun-94	198	25	0.3556	-0.370	5.288	0.972
21-Jan-94	205	26	0.3700	-0.332	5.323	0.972
14-Dec-94	217	27	0.3845	-0.294	5.380	0.972
9-Aug-99	237	28	0.3989	-0.256	5.468	0.973
4-Nov-97	248	29	0.4134	-0.219	5.513	0.972
12-Jul-95	261	30	0.4278	-0.182	5.565	0.973
9-Dec-98	275	31	0.4422	-0.145	5.617	0.973
9-Dec-98	275	32	0.4567	-0.109	5.617	0.973
24-Nov-98	297	33	0.4711	-0.072	5.694	0.976
8-Jun-94	346	34	0.4856	-0.036	5.846	0.978
4-Jan-99	385	35	0.5000	0.000	5.953	0.978
28-Jun-95	395	36	0.5144	0.036	5.979	0.977
9-Mar-99	446	37	0.5289	0.072	6.100	0.976
9-Mar-99	452	38	0.5433	0.109	6.114	0.975
23-Mar-94	502	39	0.5578	0.145	6.219	0.973
15-Jul-99	508	40	0.5722	0.182	6.230	0.972
8-Feb-99	527	41	0.5866	0.219	6.267	0.970
13-Jun-95	533	42	0.6011	0.256	6.279	0.968
20-May-94	542	43	0.6155	0.294	6.295	0.966
7-Mar-94	580	44	0.6300	0.332	6.363	0.964
7-Mar-95	585	45	0.6444	0.370	6.372	0.962

13-Apr-99	610	46	0.6588	0.409	6.413	0.959
3-May-94	612	47	0.6733	0.449	6.417	0.957
6-Apr-94	632	48	0.6877	0.489	6.449	0.955
27-Apr-95	685	49	0.7022	0.531	6.529	0.954
14-Jan-99	689	50	0.7166	0.573	6.535	0.952
14-Apr-95	775	51	0.7310	0.616	6.653	0.953
9-Feb-95	780	52	0.7455	0.660	6.659	0.951
10-Jan-95	827	53	0.7599	0.706	6.718	0.954
24-May-95	828	54	0.7744	0.753	6.719	0.959
6-May-99	1130	55	0.7888	0.802	7.030	0.983
30-Dec-98	1180	56	0.8032	0.853	7.073	0.981
11-May-95	1260	57	0.8177	0.907	7.139	0.979
18-Apr-94	1310	58	0.8321	0.963	7.178	0.977
23-Mar-95	1330	59	0.8466	1.022	7.193	0.975
29-May-98	1350	60	0.8610	1.085	7.208	0.971
11-May-98	1530	61	0.8755	1.153	7.333	0.967
16-May-91	1670	62	0.8899	1.226	7.421	0.962
15-May-91	1700	63	0.9043	1.307	7.438	0.966
17-May-91	1730	64	0.9188	1.397	7.456	0.963
24-Apr-98	2020	65	0.9332	1.500	7.611	0.950
2-Jun-99	2160	66	0.9477	1.623	7.678	
20-Apr-99	2180	67	0.9621	1.776	7.687	
18-May-91	2770	68	0.9765	1.987	7.927	
25-May-99	4190	69	0.9910	2.365	8.340	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	**SF271**	**Date:**	**30-Jun-00**
Chemical:	**tZn**	**Analyst:**	**B.Walthall**
Notes:			
Input Discharge and Concentration Data below (in red			

	Date	Discharge	Concentration	Load			
Avg:	35,093	685	1,375	3,041	0.00	0.00	0.00
SD:	970	788	687	2,255	1.00	1.00	1.00
CV:	0.03	1.15	0.50	0.74			
Min:	33,373	67	360	680.0	-0.78	-1.48	-1.05
Max:	36,410	4,190	2,830	15,103	4.45	2.12	5.35
Median:	34,843	395	1,200	2,364	-0.37	-0.26	-0.30

tZn	**SF271**		**: Concentration v. Discharge, Q**		**Q = mTime +b**		**LnQ = mTime +b**
Conc. = mQ+b (r2=0.486)		update r2	0.49	0.486	r2:	0.013	0.023
r2 Q,[COC]:	0.49	[tZn]	Q		m:	0.0910	0.00017
slope, m:	-0.6	1,751	67.0		b:	-2508	-0.02
intercept, b:	1792.1	1,375	685.5				
N: 69		-755	4190				
LnConc. = mLn(Q)+b (r2=0.862)		update r2	0.86	0.862			
r2 lnQ,ln[COC]:	0.86	ln[tZn]	ln Q	[tZn]	Q		
slope, m:	-0.46	7.89	4.20	2,669	67		
intercept, b:	9.82	6.82	6.53	920	685		
N: 69		5.99	8.34	401	4,190		

N= 69

	Sampling Date	Q Discharge	tZn Concentration	tZn Load	Ln Q	Ln tZn Conc.	Ln tZn Load	for graph 0 tZn SF271 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
MFG	15-May-91	1700	503	4600.4	7.44	6.22	8.43	1.29	-1.27	0.69
MFG	16-May-91	1670	565	5076.3	7.42	6.34	8.53	1.25	-1.18	0.90
MFG	17-May-91	1730	534	4970.2	7.46	6.28	8.51	1.33	-1.22	0.86
MFG	18-May-91	2770	531	7913.3	7.93	6.27	8.98	2.64	-1.23	2.16
MFG	1-Oct-91	94	2530	1279.5	4.54	7.84	7.15	-0.75	1.68	-0.78
MFG	2-Oct-91	94	2560	1294.6	4.54	7.85	7.17	-0.75	1.72	-0.77
MFG	3-Oct-91	96	2700	1394.5	4.56	7.90	7.24	-0.75	1.93	-0.73
MFG	4-Oct-91	98	2830	1492.1	4.58	7.95	7.31	-0.75	2.12	-0.69
MFG	5-Oct-91	101	2660	1445.4	4.62	7.89	7.28	-0.74	1.87	-0.71
IDEQ	29-Oct-93	100	2290	1232.0	4.61	7.74	7.12	-0.74	1.33	-0.80
IDEQ	30-Nov-93	105	2290	1293.6	4.65	7.74	7.17	-0.74	1.33	-0.77
IDEQ	21-Dec-93	130	2150	1503.7	4.87	7.67	7.32	-0.70	1.13	-0.68
IDEQ	21-Jan-94	205	1640	1808.8	5.32	7.40	7.50	-0.61	0.38	-0.55
IDEQ	17-Feb-94	122	2370	1555.6	4.80	7.77	7.35	-0.71	1.45	-0.66
IDEQ	7-Mar-94	580	1040	3245.2	6.36	6.95	8.08	-0.13	-0.49	0.09
IDEQ	23-Mar-94	502	1130	3051.9	6.22	7.03	8.02	-0.23	-0.36	0.00
IDEQ	6-Apr-94	632	828	2815.3	6.45	6.72	7.94	-0.07	-0.80	-0.10
IDEQ	18-Apr-94	1310	606	4271.0	7.18	6.41	8.36	0.79	-1.12	0.55
IDEQ	3-May-94	612	718	2364.1	6.42	6.58	7.77	-0.09	-0.96	-0.30
IDEQ	20-May-94	542	752	2192.8	6.30	6.62	7.69	-0.18	-0.91	-0.38
IDEQ	8-Jun-94	346	1120	2084.9	5.85	7.02	7.64	-0.43	-0.37	-0.42
IDEQ	24-Jun-94	198	1360	1448.7	5.29	7.22	7.28	-0.62	-0.02	-0.71
IDEQ	23-Jul-94	116	1450	904.9	4.75	7.28	6.81	-0.72	0.11	-0.95
IDEQ	16-Aug-94	79	1600	680.0	4.37	7.38	6.52	-0.77	0.33	-1.05
IDEQ	5-Oct-94	67	2540	915.6	4.20	7.84	6.82	-0.78	1.69	-0.94
IDEQ	16-Nov-94	139	2060	1540.5	4.93	7.63	7.34	-0.69	1.00	-0.67
IDEQ	14-Dec-94	217	2030	2369.9	5.38	7.62	7.77	-0.59	0.95	-0.30
IDEQ	10-Jan-95	827	1140	5072.2	6.72	7.04	8.53	0.18	-0.34	0.90
IDEQ	9-Feb-95	780	1010	4238.4	6.66	6.92	8.35	0.12	-0.53	0.53
IDEQ	7-Mar-95	585	1250	3934.1	6.37	7.13	8.28	-0.13	-0.18	0.40
IDEQ	23-Mar-95	1330	927	6633.1	7.19	6.83	8.80	0.82	-0.65	1.59
IDEQ	14-Apr-95	775	1040	4336.3	6.65	6.95	8.37	0.11	-0.49	0.57
IDEQ	27-Apr-95	685	927	3416.3	6.53	6.83	8.14	0.00	-0.65	0.17
IDEQ	11-May-95	1260	622	4216.4	7.14	6.43	8.35	0.73	-1.10	0.52
IDEQ	24-May-95	828	660	2940.1	6.72	6.49	7.99	0.18	-1.04	-0.04
IDEQ	13-Jun-95	533	929	2663.9	6.28	6.83	7.89	-0.19	-0.65	-0.17
IDEQ	28-Jun-95	395	1100	2337.6	5.98	7.00	7.76	-0.37	-0.40	-0.31
IDEQ	12-Jul-95	261	1470	2064.1	5.56	7.29	7.63	-0.54	0.14	-0.43
IDEQ	26-Jul-95	189	1850	1881.1	5.24	7.52	7.54	-0.63	0.69	-0.51
IDEQ	15-Aug-95	159	1950	1668.1	5.07	7.58	7.42	-0.67	0.84	-0.61
IDEQ	14-Sep-95	130	1850	1293.9	4.87	7.52	7.17	-0.70	0.69	-0.77
URS	4-Nov-97	248	1670	2228.2	5.51	7.42	7.71	-0.55	0.43	-0.36
IDEQ	24-Apr-98	2020	758	8237.6	7.61	6.63	9.02	1.69	-0.90	2.31
URS	11-May-98	1530	572	4708.4	7.33	6.35	8.46	1.07	-1.17	0.74
IDEQ	29-May-98	1350	624	4532.1	7.21	6.44	8.42	0.84	-1.09	0.66
IDEQ	27-Jul-98	161	1290	1117.4	5.08	7.16	7.02	-0.67	-0.12	-0.85
IDEQ	25-Aug-98	120	1980	1278.3	4.79	7.59	7.15	-0.72	0.88	-0.78

IDEQ	23-Sep-98	102	2510	1377.4	4.62	7.83	7.23	-0.74	1.65	-0.74
USGS	26-Oct-98	98	2300	1212.7	4.58	7.74	7.10	-0.75	1.35	-0.81
IDEQ	27-Oct-98	88	2060	975.3	4.48	7.63	6.88	-0.76	1.00	-0.92
USGS	17-Nov-98	162	2000	1743.1	5.09	7.60	7.46	-0.66	0.91	-0.58
USGS	17-Nov-98	162	2100	1830.3	5.09	7.65	7.51	-0.66	1.05	-0.54
IDEQ	24-Nov-98	297	1780	2844.2	5.69	7.48	7.95	-0.49	0.59	-0.09
USGS	9-Dec-98	275	1800	2663.1	5.62	7.50	7.89	-0.52	0.62	-0.17
USGS	30-Dec-98	1180	700	4443.9	7.07	6.55	8.40	0.63	-0.98	0.62
IDEQ	4-Jan-99	385	1130	2340.6	5.95	7.03	7.76	-0.38	-0.36	-0.31
IDEQ	14-Jan-99	689	1100	4077.5	6.54	7.00	8.31	0.00	-0.40	0.46
USGS	8-Feb-99	527	1300	3685.8	6.27	7.17	8.21	-0.20	-0.11	0.29
USGS	9-Mar-99	452	1200	2918.1	6.11	7.09	7.98	-0.30	-0.26	-0.05
USGS	9-Mar-99	446	1200	2879.4	6.10	7.09	7.97	-0.30	-0.26	-0.07
USGS	13-Apr-99	610	950	3117.7	6.41	6.86	8.04	-0.10	-0.62	0.03
USGS	20-Apr-99	2180	540	6333.3	7.69	6.29	8.75	1.90	-1.22	1.46
USGS	6-May-99	1130	590	3586.8	7.03	6.38	8.19	0.56	-1.14	0.24
USGS	25-May-99	4190	670	15103.3	8.34	6.51	9.62	4.45	-1.03	5.35
USGS	27-May-99	2760	450	6682.0	7.92	6.13	8.81	2.63	-1.35	1.62
USGS	2-Jun-99	2160	360	4183.5	7.68	5.89	8.34	1.87	-1.48	0.51
USGS	15-Jul-99	508	660	1803.8	6.23	6.49	7.50	-0.23	-1.04	-0.55
USGS	9-Aug-99	237	1100	1402.6	5.47	7.00	7.25	-0.57	-0.40	-0.73
USGS	7-Sep-99	140	1400	1054.5	4.94	7.24	6.96	-0.69	0.04	-0.88

tZn

Concentration over time analysis

	tZn	SF271		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.026**	**-0.00009**
	Time	**Ln[COC]**	**[COC]**		
first:	15-May-91	7.25	1,401		
mid:	24-May-95	7.11	1,228		
last:	7-Sep-99	6.97	1,066		
	LnConc.=mTime+b >'96 r2, m:			**0.372**	**-0.00338**
	27-Oct-98	7.39	1,619		
	7-Sep-99	6.33	559		

Load over time analysis

	tZn	SF271			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.015**	**0.00008**
	Time	**LnLoad**	**Load**		
first:	15-May-91	7.68	2,158		
mid:	24-May-95	7.79	2,427		
last:	7-Sep-99	7.92	2,751		
	LnLoad=mTime+b >'96 r2, m:			**0.013**	**0.00079**
	27-Oct-98	7.88	2,647		
	7-Sep-99	8.13	3,395		

max r2: 0.952

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.026	-0.00009	10.25
0.046	-0.00012	11.28
0.070	-0.00015	12.33
0.105	-0.00018	13.59
0.154	-0.00022	15.05
0.136	-0.00021	14.66
0.116	-0.00020	14.19
0.094	-0.00018	13.56
0.070	-0.00016	12.74
0.048	-0.00013	11.84
0.037	-0.00012	11.28
0.027	-0.00010	10.68
0.019	-0.00009	10.10
0.015	-0.00008	9.78
0.008	-0.00006	9.00
0.009	-0.00006	9.17
0.009	-0.00006	9.25
0.014	-0.00008	9.75
0.025	-0.00010	10.76
0.037	-0.00013	11.62
0.051	-0.00015	12.51
0.055	-0.00016	12.85
0.053	-0.00016	12.89
0.049	-0.00016	12.80
0.043	-0.00015	12.51
0.025	-0.00012	11.24
0.015	-0.00009	10.25
0.006	-0.00006	9.13
0.006	-0.00006	9.18
0.008	-0.00007	9.54
0.006	-0.00007	9.39
0.010	-0.00009	10.08
0.012	-0.00010	10.55
0.018	-0.00013	11.53
0.044	-0.00021	14.41
0.086	-0.00030	17.94
0.120	-0.00038	20.89
0.149	-0.00047	24.03
0.155	-0.00054	26.48
0.135	-0.00058	28.09
0.106	-0.00065	30.63
0.098	-0.00109	46.29
0.077	-0.00111	47.02
0.125	-0.00152	61.80
0.251	-0.00228	89.56
0.450	-0.00329	126.08
0.496	-0.00372	141.84

max r2: 0.936

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.015	0.00008	5.01
0.024	0.00010	4.25
0.038	0.00013	3.28
0.055	0.00016	2.19
0.097	0.00021	0.36
0.085	0.00020	0.67
0.074	0.00019	1.03
0.064	0.00018	1.33
0.055	0.00018	1.59
0.045	0.00017	1.96
0.037	0.00015	2.52
0.029	0.00013	3.07
0.024	0.00012	3.50
0.021	0.00012	3.75
0.016	0.00010	4.21
0.019	0.00011	3.79
0.022	0.00012	3.42
0.024	0.00013	3.12
0.033	0.00016	2.19
0.034	0.00016	2.04
0.033	0.00016	2.00
0.031	0.00016	2.04
0.023	0.00014	2.73
0.011	0.00010	4.38
0.001	0.00003	6.81
0.001	-0.00003	8.93
0.005	-0.00006	10.22
0.007	-0.00008	10.76
0.002	-0.00005	9.60
0.000	-0.00002	8.69
0.000	0.00000	7.82
0.005	0.00007	5.25
0.013	0.00012	3.48
0.020	0.00016	2.13
0.038	0.00023	-0.44
0.049	0.00028	-2.16
0.058	0.00033	-3.95
0.063	0.00038	-5.66
0.063	0.00042	-7.28
0.057	0.00047	-9.05
0.042	0.00051	-10.64
0.004	0.00027	-1.70
0.001	0.00017	1.63
0.031	0.00090	-24.76
0.073	0.00150	-46.33
0.147	0.00231	-75.84
0.102	0.00201	-64.77

0.473	-0.00381	145.00	0.066	0.00169	-53.22
0.421	-0.00362	137.97	0.038	0.00133	-40.07
0.372	-0.00338	129.31	0.013	0.00079	-20.66
0.318	-0.00315	121.11	0.000	-0.00015	13.32
0.262	-0.00285	110.07	0.011	-0.00071	33.92
0.185	-0.00236	92.21	0.043	-0.00147	61.39
0.112	-0.00185	73.79	0.064	-0.00195	78.76
0.039	-0.00107	45.55	0.103	-0.00268	105.39
0.068	-0.00153	62.26	0.092	-0.00274	107.53
0.039	-0.00126	52.31	0.174	-0.00415	158.62
0.013	-0.00082	36.53	0.192	-0.00496	188.15
0.003	0.00043	-9.15	0.231	-0.00618	232.36
0.056	0.00189	-62.15	0.319	-0.00802	299.21
0.326	0.00491	-171.96	0.510	-0.01189	439.93
0.641	0.00733	-259.64	0.669	-0.01507	555.74
0.688	0.00854	-303.75	0.671	-0.01667	613.94
0.784	0.01035	-369.74	0.837	-0.02130	782.19
0.952	0.01275	-457.03	0.936	-0.01703	626.74

update for EV, CV:

tZn **SF271**

LN Analysis **tZn**

Load **Load Data, EV=3040 lbs/day CV=0.741**

Avg:	**3,041**	**Load Data-based LN**		
SD:	**2,255**	u	ln tZn Load	tZn Load
CV:	**0.74**	3	9.8	17792
Min:	**680.0**	0	7.80	2442
Max:	**15,103**	-3	5.82	335.3
Median:	**2,364**			

3,041	3040
0.74	0.741

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.979, EV=3050lbs/day CV=0.717; max r2=0.99**

r2 u,lnLoad:	0.979	u	lnLoad	Load	
slope, m:	1.552	3	9.75	17099	
intercept, b:	-12.131	0	7.81	2476	
N: 69		-3	5.88	358.5	
E[Load]:	3046.7	Parameter Estimates			0.979 0.979
SD[Load]:	2185	from LN regression			3046.7 3050
CV[Load]:	0.72	update graph label			0.7 0.717
					max r2
	N: 69				0.987

Date	tZn Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
16-Aug-94	**680.0**	1	0.0090	-2.365	6.522	0.979
23-Jul-94	**904.9**	2	0.0235	-1.987	6.808	0.980
5-Oct-94	**915.6**	3	0.0379	-1.776	6.820	0.982
27-Oct-98	**975.3**	4	0.0523	-1.623	6.883	0.982
7-Sep-99	**1054.5**	5	0.0668	-1.500	6.961	0.983
27-Jul-98	**1117.4**	6	0.0812	-1.397	7.019	0.983
26-Oct-98	**1212.7**	7	0.0957	-1.307	7.101	0.984
29-Oct-93	**1232.0**	8	0.1101	-1.226	7.116	0.985
25-Aug-98	**1278.3**	9	0.1245	-1.153	7.153	0.986
1-Oct-91	**1279.5**	10	0.1390	-1.085	7.154	0.986
30-Nov-93	**1293.6**	11	0.1534	-1.022	7.165	0.987
14-Sep-95	**1293.9**	12	0.1679	-0.963	7.165	0.987
2-Oct-91	**1294.6**	13	0.1823	-0.907	7.166	0.986
23-Sep-98	**1377.4**	14	0.1968	-0.853	7.228	0.986
3-Oct-91	**1394.5**	15	0.2112	-0.802	7.240	0.985
9-Aug-99	**1402.6**	16	0.2256	-0.753	7.246	0.985
5-Oct-91	**1445.4**	17	0.2401	-0.706	7.276	0.984
24-Jun-94	**1448.7**	18	0.2545	-0.660	7.278	0.984
4-Oct-91	**1492.1**	19	0.2690	-0.616	7.308	0.983
21-Dec-93	**1503.7**	20	0.2834	-0.573	7.316	0.982
16-Nov-94	**1540.5**	21	0.2978	-0.531	7.340	0.981
17-Feb-94	**1555.6**	22	0.3123	-0.489	7.350	0.981
15-Aug-95	**1668.1**	23	0.3267	-0.449	7.419	0.981
17-Nov-98	**1743.1**	24	0.3412	-0.409	7.463	0.980
15-Jul-99	**1803.8**	25	0.3556	-0.370	7.498	0.979
21-Jan-94	**1808.8**	26	0.3700	-0.332	7.500	0.978
17-Nov-98	**1830.3**	27	0.3845	-0.294	7.512	0.977
26-Jul-95	**1881.1**	28	0.3989	-0.256	7.540	0.977
12-Jul-95	**2064.1**	29	0.4134	-0.219	7.632	0.977
8-Jun-94	**2084.9**	30	0.4278	-0.182	7.642	0.975
20-May-94	**2192.8**	31	0.4422	-0.145	7.693	0.974
4-Nov-97	**2228.2**	32	0.4567	-0.109	7.709	0.973
28-Jun-95	**2337.6**	33	0.4711	-0.072	7.757	0.972
4-Jan-99	**2340.6**	34	0.4856	-0.036	7.758	0.970
3-May-94	**2364.1**	35	0.5000	0.000	7.768	0.969
14-Dec-94	**2369.9**	36	0.5144	0.036	7.771	0.967
9-Dec-98	**2663.1**	37	0.5289	0.072	7.887	0.966
13-Jun-95	**2663.9**	38	0.5433	0.109	7.888	0.964
6-Apr-94	**2815.3**	39	0.5578	0.145	7.943	0.962
24-Nov-98	**2844.2**	40	0.5722	0.182	7.953	0.960
9-Mar-99	**2879.4**	41	0.5866	0.219	7.965	0.958
9-Mar-99	**2918.1**	42	0.6011	0.256	7.979	0.956
24-May-95	**2940.1**	43	0.6155	0.294	7.986	0.953
23-Mar-94	**3051.9**	44	0.6300	0.332	8.024	0.950
13-Apr-99	**3117.7**	45	0.6444	0.370	8.045	0.946
7-Mar-94	**3245.2**	46	0.6588	0.409	8.085	0.942
27-Apr-95	**3416.3**	47	0.6733	0.449	8.136	0.938

6-May-99	3586.8	48	0.6877	0.489	8.185	0.934
8-Feb-99	3685.8	49	0.7022	0.531	8.212	0.930
7-Mar-95	3934.1	50	0.7166	0.573	8.277	0.927
14-Jan-99	4077.5	51	0.7310	0.616	8.313	0.927
2-Jun-99	4183.5	52	0.7455	0.660	8.339	0.930
11-May-95	4216.4	53	0.7599	0.706	8.347	0.935
9-Feb-95	4238.4	54	0.7744	0.753	8.352	0.940
18-Apr-94	4271.0	55	0.7888	0.802	8.360	0.943
14-Apr-95	4336.3	56	0.8032	0.853	8.375	0.945
30-Dec-98	4443.9	57	0.8177	0.907	8.399	0.946
29-May-98	4532.1	58	0.8321	0.963	8.419	0.947
15-May-91	4600.4	59	0.8466	1.022	8.434	0.947
11-May-98	4708.4	60	0.8610	1.085	8.457	0.945
17-May-91	4970.2	61	0.8755	1.153	8.511	0.939
10-Jan-95	5072.2	62	0.8899	1.226	8.532	0.934
16-May-91	5076.3	63	0.9043	1.307	8.532	0.923
20-Apr-99	6333.3	64	0.9188	1.397	8.754	0.900
23-Mar-95	6633.1	65	0.9332	1.500	8.800	0.910
27-May-99	6682.0	66	0.9477	1.623	8.807	
18-May-91	7913.3	67	0.9621	1.776	8.976	
24-Apr-98	8237.6	68	0.9765	1.987	9.016	
25-May-99	15103.3	69	0.9910	2.365	9.623	

update for EV, CV:

tZn		SF271		1,375	1380
LN Analysis		tZn		0.50	0.5
Concentration		Conc. Data, EV=1380 ug/L CV=0.5			
Avg:	1,375	Data-based LN			
SD:	687	u	ln[tZn]	[tZn]	
CV:	0.50	3	8.5	5072	
Min:	360	0	7.12	1230	
Max:	2,830	-3	5.70	298	
Median:	1,200				

					0.963	0.963
u=mLn{Conc.}+b:					1404.3	1400
update for r2, EV, CV:	r2=0.963, EV=1400 ug/L CV=0.607; max r2=0.98				0.607	0.607
r2 u,lnConc:	0.963	u		lnConc.	Conc.	
slope, m:	1.785	3		8.77	6447	
intercept, b:	-12.654	0		7.09	1200	
N: 69		-3		5.41	223	
E[Conc]:	1404.3	Parameter Estimates				
SD[Conc]:	853	from LN regression				
CV[Conc]:	0.61	update graph label				

Date	tZn Concentration ug/L Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.976 r2 forward
update and rank for new data			N: 69			
2-Jun-99	360	1	0.0090	-2.365	5.886	0.963
27-May-99	450	2	0.0235	-1.987	6.109	0.960
15-May-91	503	3	0.0379	-1.776	6.221	0.959
18-May-91	531	4	0.0523	-1.623	6.275	0.957
17-May-91	534	5	0.0668	-1.500	6.280	0.956
20-Apr-99	540	6	0.0812	-1.397	6.292	0.954
16-May-91	565	7	0.0957	-1.307	6.337	0.951
11-May-98	572	8	0.1101	-1.226	6.349	0.949
6-May-99	590	9	0.1245	-1.153	6.380	0.946
18-Apr-94	606	10	0.1390	-1.085	6.407	0.943
11-May-95	622	11	0.1534	-1.022	6.433	0.941
29-May-98	624	12	0.1679	-0.963	6.436	0.938
24-May-95	660	13	0.1823	-0.907	6.492	0.936
15-Jul-99	660	14	0.1968	-0.853	6.492	0.934
25-May-99	670	15	0.2112	-0.802	6.507	0.932
30-Dec-98	700	16	0.2256	-0.753	6.551	0.931
3-May-94	718	17	0.2401	-0.706	6.576	0.930
20-May-94	752	18	0.2545	-0.660	6.623	0.929
24-Apr-98	758	19	0.2690	-0.616	6.631	0.928
6-Apr-94	828	20	0.2834	-0.573	6.719	0.929
23-Mar-95	927	21	0.2978	-0.531	6.832	0.927
27-Apr-95	927	22	0.3123	-0.489	6.832	0.924
13-Jun-95	929	23	0.3267	-0.449	6.834	0.921
13-Apr-99	950	24	0.3412	-0.409	6.856	0.918
9-Feb-95	1010	25	0.3556	-0.370	6.918	0.915
7-Mar-94	1040	26	0.3700	-0.332	6.947	0.911
14-Apr-95	1040	27	0.3845	-0.294	6.947	0.907
28-Jun-95	1100	28	0.3989	-0.256	7.003	0.903
14-Jan-99	1100	29	0.4134	-0.219	7.003	0.899
9-Aug-99	1100	30	0.4278	-0.182	7.003	0.894
8-Jun-94	1120	31	0.4422	-0.145	7.021	0.889
23-Mar-94	1130	32	0.4567	-0.109	7.030	0.885
4-Jan-99	1130	33	0.4711	-0.072	7.030	0.880
10-Jan-95	1140	34	0.4856	-0.036	7.039	0.878
9-Mar-99	1200	35	0.5000	0.000	7.090	0.877
9-Mar-99	1200	36	0.5144	0.036	7.090	0.874
7-Mar-95	1250	37	0.5289	0.072	7.131	0.874
27-Jul-98	1290	38	0.5433	0.109	7.162	0.874
8-Feb-99	1300	39	0.5578	0.145	7.170	0.874
24-Jun-94	1360	40	0.5722	0.182	7.215	0.879
7-Sep-99	1400	41	0.5866	0.219	7.244	0.883
23-Jul-94	1450	42	0.6011	0.256	7.279	0.889
12-Jul-95	1470	43	0.6155	0.294	7.293	0.896
16-Aug-94	1600	44	0.6300	0.332	7.378	0.912
21-Jan-94	1640	45	0.6444	0.370	7.402	0.916
4-Nov-97	1670	46	0.6588	0.409	7.421	0.920
24-Nov-98	1780	47	0.6733	0.449	7.484	0.927

9-Dec-98	1800	48	0.6877	0.489	7.496	0.925
26-Jul-95	1850	49	0.7022	0.531	7.523	0.925
14-Sep-95	1850	50	0.7166	0.573	7.523	0.922
15-Aug-95	1950	51	0.7310	0.616	7.576	0.925
25-Aug-98	1980	52	0.7455	0.660	7.591	0.919
17-Nov-98	2000	53	0.7599	0.706	7.601	0.912
14-Dec-94	2030	54	0.7744	0.753	7.616	0.905
16-Nov-94	2060	55	0.7888	0.802	7.630	0.897
27-Oct-98	2060	56	0.8032	0.853	7.630	0.889
17-Nov-98	2100	57	0.8177	0.907	7.650	0.889
21-Dec-93	2150	58	0.8321	0.963	7.673	0.898
29-Oct-93	2290	59	0.8466	1.022	7.736	0.918
30-Nov-93	2290	60	0.8610	1.085	7.736	0.905
26-Oct-98	2300	61	0.8755	1.153	7.741	0.896
17-Feb-94	2370	62	0.8899	1.226	7.771	0.924
23-Sep-98	2510	63	0.9043	1.307	7.828	0.976
1-Oct-91	2530	64	0.9188	1.397	7.836	0.975
5-Oct-94	2540	65	0.9332	1.500	7.840	0.975
2-Oct-91	2560	66	0.9477	1.623	7.848	
5-Oct-91	2660	67	0.9621	1.776	7.886	
3-Oct-91	2700	68	0.9765	1.987	7.901	
4-Oct-91	2830	69	0.9910	2.365	7.948	

update for EV, CV:

tZn		SF271			685	685
LN Analysis		tZn			1.15	1.15

Discharge, Q

Q Data, EV=685 cfs CV=1.15

Avg:	685	Q Data-based LN		
SD:	788	u	lnQ	Q
CV:	1.15	3	8.9	7063
Min:	67	0	6.11	450
Max:	4,190	-3	3.35	29
Median:	395			

	0.956	0.956
	733.8	734
u=mLn{Q}+b:	1.63	1.63

update for r2, EV, CV: **r2=0.956, EV=734 cfs CV=1.63; max r2=0.99**

r2 u,lnQ:	0.956	u	lnQ	Q
slope, m:	0.878	3	9.37	11702
intercept, b:	-5.221	0	5.95	383
N: 69		-3	2.53	13
E[Q]:	733.8	Parameter Estimates		
SD[Q]:	1198	from LN regression		
CV[Q]:	1.63	update graph label		

N: 69 — max r2: 0.985

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
5-Oct-94	67	1	0.0090	-2.365	4.205	0.956
16-Aug-94	79	2	0.0235	-1.987	4.369	0.964
27-Oct-98	88	3	0.0379	-1.776	4.477	0.969
1-Oct-91	94	4	0.0523	-1.623	4.543	0.973
2-Oct-91	94	5	0.0668	-1.500	4.543	0.977
3-Oct-91	96	6	0.0812	-1.397	4.564	0.978
4-Oct-91	98	7	0.0957	-1.307	4.585	0.980
26-Oct-98	98	8	0.1101	-1.226	4.585	0.980
29-Oct-93	100	9	0.1245	-1.153	4.605	0.980
5-Oct-91	101	10	0.1390	-1.085	4.615	0.980
23-Sep-98	102	11	0.1534	-1.022	4.625	0.979
30-Nov-93	105	12	0.1679	-0.963	4.654	0.978
23-Jul-94	116	13	0.1823	-0.907	4.754	0.977
25-Aug-98	120	14	0.1968	-0.853	4.787	0.976
17-Feb-94	122	15	0.2112	-0.802	4.804	0.975
21-Dec-93	130	16	0.2256	-0.753	4.868	0.974
14-Sep-95	130	17	0.2401	-0.706	4.868	0.973
16-Nov-94	139	18	0.2545	-0.660	4.934	0.972
7-Sep-99	140	19	0.2690	-0.616	4.942	0.971
15-Aug-95	159	20	0.2834	-0.573	5.069	0.970
27-Jul-98	161	21	0.2978	-0.531	5.081	0.969
17-Nov-98	162	22	0.3123	-0.489	5.088	0.968
17-Nov-98	162	23	0.3267	-0.449	5.088	0.968
26-Jul-95	189	24	0.3412	-0.409	5.242	0.969
24-Jun-94	198	25	0.3556	-0.370	5.288	0.968
21-Jan-94	205	26	0.3700	-0.332	5.323	0.968
14-Dec-94	217	27	0.3845	-0.294	5.380	0.969
9-Aug-99	237	28	0.3989	-0.256	5.468	0.969
4-Nov-97	248	29	0.4134	-0.219	5.513	0.970
12-Jul-95	261	30	0.4278	-0.182	5.565	0.971
9-Dec-98	275	31	0.4422	-0.145	5.617	0.972
24-Nov-98	297	32	0.4567	-0.109	5.694	0.974
8-Jun-94	346	33	0.4711	-0.072	5.846	0.976
4-Jan-99	385	34	0.4856	-0.036	5.953	0.976
28-Jun-95	395	35	0.5000	0.000	5.979	0.975
9-Mar-99	446	36	0.5144	0.036	6.100	0.974
9-Mar-99	452	37	0.5289	0.072	6.114	0.972
23-Mar-94	502	38	0.5433	0.109	6.219	0.971
15-Jul-99	508	39	0.5578	0.145	6.230	0.969
8-Feb-99	527	40	0.5722	0.182	6.267	0.967
13-Jun-95	533	41	0.5866	0.219	6.279	0.965
20-May-94	542	42	0.6011	0.256	6.295	0.963
7-Mar-94	580	43	0.6155	0.294	6.363	0.961
7-Mar-95	585	44	0.6300	0.332	6.372	0.958
13-Apr-99	610	45	0.6444	0.370	6.413	0.956
3-May-94	612	46	0.6588	0.409	6.417	0.953
6-Apr-94	632	47	0.6733	0.449	6.449	0.951

27-Apr-95	685	48	0.6877	0.489	6.529	0.951
14-Jan-99	689	49	0.7022	0.531	6.535	0.949
14-Apr-95	775	50	0.7166	0.573	6.653	0.951
9-Feb-95	780	51	0.7310	0.616	6.659	0.950
10-Jan-95	827	52	0.7455	0.660	6.718	0.953
24-May-95	828	53	0.7599	0.706	6.719	0.959
6-May-99	1130	54	0.7744	0.753	7.030	0.985
30-Dec-98	1180	55	0.7888	0.802	7.073	0.984
11-May-95	1260	56	0.8032	0.853	7.139	0.982
18-Apr-94	1310	57	0.8177	0.907	7.178	0.979
23-Mar-95	1330	58	0.8321	0.963	7.193	0.977
29-May-98	1350	59	0.8466	1.022	7.208	0.974
11-May-98	1530	60	0.8610	1.085	7.333	0.974
16-May-91	1670	61	0.8755	1.153	7.421	0.969
15-May-91	1700	62	0.8899	1.226	7.438	0.966
17-May-91	1730	63	0.9043	1.307	7.456	0.958
24-Apr-98	2020	64	0.9188	1.397	7.611	0.948
2-Jun-99	2160	65	0.9332	1.500	7.678	0.939
20-Apr-99	2180	66	0.9477	1.623	7.687	
27-May-99	2760	67	0.9621	1.776	7.923	
18-May-91	2770	68	0.9765	1.987	7.927	
25-May-99	4190	69	0.9910	2.365	8.340	

Secondary Scale For LN graphs u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SR50 **Date:** 21-Jul-00
Chemical: dCd **Analyst:** L.Raschke
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load				
Avg:	36,255	6,419	1	112			0.00	#DIV/0!	#DIV/0!
SD:	113	6,073	0	0			1.00	#DIV/0!	#DIV/0!
CV:	0.00	0.95	0.00	0.00					
Min:	36,087	458	1	112.4			-0.98	#DIV/0!	#DIV/0!
Max:	36,410	20,900	1	112			2.38	#DIV/0!	#DIV/0!
Median:	36,262	5,030	1	112			-0.23	#DIV/0!	#DIV/0!

dCd	SR50		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b		
#DIV/0!		update r2	#DIV/0!	#DIV/0!		r2:	0.014	0.005		
r2 Q,[COC]:	#DIV/0!	[dCd]	Q			m:	6.3140	-0.00067		
slope, m:	#DIV/0!	#DIV/0!	458.0			b:	-222497	32.65		
intercept, b:	#DIV/0!	#DIV/0!	6418.7							
N: 1		#DIV/0!	20900							
#DIV/0!			update r2	#DIV/0!	#DIV/0!					
r2 lnQ,ln[COC]:	#DIV/0!	ln[dCd]	ln Q	[dCd]	Q					
slope, m:	#DIV/0!	#DIV/0!	6.13	#DIV/0!	458					
intercept, b:	#DIV/0!	#DIV/0!	8.77	#DIV/0!	6,419					
N: 1		#DIV/0!	9.95	#DIV/0!	20,900					

N= 9

	Sampling Date	Q Discharge	dCd Concentration	dCd Load	Ln Q	Ln dCd Conc.	Ln dCd Load	dCd SR50 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	19-Oct-98	2340			7.76			-0.67		
USGS	13-Nov-98	1110			7.01			-0.87		
USGS	16-Dec-98	6330			8.75			-0.01		
USGS	11-Mar-99	9320			9.14			0.48		
USGS	12-Apr-99	10100			9.22			0.61		
USGS	7-Jun-99	20900	1	112.4	9.95	0.00	4.72	2.38	#DIV/0!	#DIV/0!
USGS	12-Jul-99	5030			8.52			-0.23		
USGS	9-Aug-99	2180			7.69			-0.70		
USGS	7-Sep-99	458			6.13			-0.98		

dCd

Concentration over time analysis, r2 Slope, m

dCd SR50 **Concentration over time**

LnConc.=mTime+b All data r2, m: #DIV/0! #DIV/0!

	Time	Ln[COC]	[COC]
first:	19-Oct-98	#DIV/0!	#DIV/0!
mid:	12-Apr-99	#DIV/0!	#DIV/0!
last:	7-Sep-99	#DIV/0!	#DIV/0!

LnConc.=mTime+b >'96 r2, m: 0.000 0.00000

0-Jan-00	0.00	1
7-Sep-99	0.00	1

Load over time analysis

dCd SR50 **Load over time**

LnLoad=mTime+b All data r2, m: #DIV/0! #DIV/0!

	Time	LnLoad	Load
first:	19-Oct-98	#DIV/0!	#DIV/0!
mid:	12-Apr-99	#DIV/0!	#DIV/0!
last:	7-Sep-99	#DIV/0!	#DIV/0!

LnLoad=mTime+b >'96 r2, m: 0.000 0.00000

0-Jan-00	0.00	1
7-Sep-99	0.00	1

max r2: #DIV/0! max r2: #DIV/0!

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	#DIV/0!	#DIV/0!

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

dCd		**SR50**		
LN Analysis		**dCd**		
Load		**Load Data, EV=112 lbs/day CV=0**		
Avg:	**112**	**Load Data-based LN**		
SD:	**0**	u	ln dCd Load	dCd Load
CV:	**0.00**	3	4.7	112
Min:	**112.4**	0	4.72	112
Max:	**112**	-3	4.72	112.4
Median:	**112**			
		112	112	
		0.00	0	

u=mLn{Load}+ b:

update for r2, EV, CV: #DIV/0!

r2 u,lnLoad:	#DIV/0!	u	lnLoad	Load		
slope, m:	#DIV/0!	3	#DIV/0!	#DIV/0!		
intercept, b:	#DIV/0!	0	#DIV/0!	#DIV/0!		
N: 1		-3	#DIV/0!	#DIV/0!		
E[Load]:	#DIV/0!	Parameter Estimates			#DIV/0!	#DIV/0!
SD[Load]:	#DIV/0!	from LN regression			#DIV/0!	#DIV/0!
CV[Load]:	#DIV/0!	update graph label			#DIV/0!	#DIV/0!
					max r2	
	dCd	N: 9			0.000	

Date	Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
7-Sep-99		1	0.0676	-1.494		
13-Nov-98		2	0.1757	-0.932		
9-Aug-99		3	0.2838	-0.572		
19-Oct-98		4	0.3919	-0.274		
12-Jul-99		5	0.5000	0.000		
16-Dec-98		6	0.6081	0.274		
11-Mar-99		7	0.7162	0.572		
12-Apr-99		8	0.8243	0.932		
7-Jun-99	112.4	9	0.9324	1.494	4.722	

update for EV, CV:

dCd		SR50		1	1
LN Analysis		dCd		0.00	0

Concentration — Conc. Data, EV=1 ug/L CV=0

		Data-based LN		
Avg:	1	u	ln[dCd]	[dCd]
SD:	0	3	0.0	1
CV:	0.00	0	0.00	1
Min:	1	-3	0.00	1
Max:	1			
Median:	1			

u=mLn(Conc.)+b:

update for r2, EV, CV: #DIV/0!

r2 u,lnConc:	#DIV/0!	u	lnConc.	Conc.	
slope, m:	#DIV/0!	3	#DIV/0!	#DIV/0!	
intercept, b:	#DIV/0!	0	#DIV/0!	#DIV/0!	
N: 1		-3	#DIV/0!	#DIV/0!	
E[Conc]:	#DIV/0!	Parameter Estimates			
SD[Conc]:	#DIV/0!	from LN regression			
CV[Conc]:	#DIV/0!	update graph label			

#DIV/0! #DIV/0!
#DIV/0! #DIV/0!
#DIV/0! #DIV/0!

N: 9

Date	dCd Concentration ug/L Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.000 r2 forward
update and rank for new data						
19-Oct-98		1	0.0676	-1.494		
13-Nov-98		2	0.1757	-0.932		
16-Dec-98		3	0.2838	-0.572		
11-Mar-99		4	0.3919	-0.274		
12-Apr-99		5	0.5000	0.000		
12-Jul-99		6	0.6081	0.274		
8-Aug-99		7	0.7162	0.572		
7-Sep-99		8	0.8243	0.932		
7-Jun-99	1	9	0.9324	1.494	0.000	

update for EV, CV:

dCd		**SR50**			6,419	6420
LN Analysis		**dCd**			0.95	0.946
Discharge, Q		**Q Data, EV=6420 cfs CV=0.946**				
Avg:	6,419	**Q Data-based LN**				
SD:	6,073	u	lnQ	Q		
CV:	0.95	3	10.8	51330		
Min:	458	0	8.45	4663		
Max:	20,900	-3	6.05	424		
Median:	5,030					

					0.973	0.973
					8842.4	8840
u=mLn{Q}+b:					2.11	2.11
update for r2, EV, CV:	**r2=0.973, EV=8840 cfs CV=2.11; max r2=0.98**					
	r2 u,lnQ:	0.973	u	lnQ	Q	
	slope, m:	0.769	3	12.14	187999	
	intercept, b:	-6.334	0	8.24	3793	
	N: 9		-3	4.34	77	
	E[Q]:	8842.4	Parameter Estimates			
	SD[Q]:	18622	from LN regression			
	CV[Q]:	2.11	update graph label			

	Q	N: 9				max r2 0.973
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
7-Sep-99	*458*	1	0.0676	-1.494	6.127	0.973
13-Nov-98	*1110*	2	0.1757	-0.932	7.012	0.966
9-Aug-99	*2180*	3	0.2838	-0.572	7.687	0.956
19-Oct-98	*2340*	4	0.3919	-0.274	7.758	0.935
12-Jul-99	*5030*	5	0.5000	0.000	8.523	0.969
16-Dec-98	*6330*	6	0.6081	0.274	8.753	
11-Mar-99	*9320*	7	0.7162	0.572	9.140	
12-Apr-99	*10100*	8	0.8243	0.932	9.220	
7-Jun-99	20900	9	0.9324	1.494	9.948	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	**SR50**	**Date:**	**21-Jul-00**
Chemical:	**dPb**	**Analyst:**	**L.Raschke**
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	36,255	6,419	1	72	0.00	#DIV/0!	0.00
SD:	113	6,073	0	28	1.00	#DIV/0!	1.00
CV:	0.00	0.95	0.00	0.39			
Min:	36,087	458	1	50.1	-0.98	#DIV/0!	-0.78
Max:	36,410	20,900	1	112	2.38	#DIV/0!	1.41
Median:	36,262	5,030	1	54	-0.23	#DIV/0!	-0.63

dPb	**SR50**		**: Concentration v. Discharge, Q**		**Q = mTime +b**		**LnQ = mTime +b**
#DIV/0!		update r2	#DIV/0!	#DIV/0!	r2:	0.014	0.005
r2 Q,[COC]:	#DIV/0!	[dPb]	Q		m:	6.3140	-0.00067
slope, m:	0.0000000	1	458.0		b:	-222497	32.65
intercept, b:	1.0	1	6418.7				
N: 3		1	20900				

#DIV/0!		update r2	#DIV/0!	#DIV/0!
r2 lnQ,ln[COC]:	#DIV/0!	ln[dPb]	ln Q	[dPb]	Q
slope, m:	0.00	0.00	6.13	1	458
intercept, b:	0.00	0.00	8.77	1	6,419
N: 3		0.00	9.95	1	20,900

N= 9

	Sampling Date	Q Discharge	dPb Concentration	dPb Load	Ln Q	Ln dPb Conc.	Ln dPb Load	dPb SR50 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	*19-Oct-98*	*2340*			7.76			-0.67		
USGS	*13-Nov-98*	*1110*			7.01			-0.87		
USGS	*16-Dec-98*	*6330*			8.75			-0.01		
USGS	11-Mar-99	9320	1	50.1	9.14	0.00	3.91	0.48	#DIV/0!	-0.78
USGS	12-Apr-99	10100	1	54.3	9.22	0.00	4.00	0.61	#DIV/0!	-0.63
USGS	7-Jun-99	20900	1	112.4	9.95	0.00	4.72	2.38	#DIV/0!	1.41
USGS	*12-Jul-99*	*5030*			8.52			-0.23		
USGS	*9-Aug-99*	*2180*			7.69			-0.70		
USGS	*7-Sep-99*	*458*			6.13			-0.98		

for graph 0

dPb

Concentration over time analysis

	dPb	SR50		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**#DIV/0!**	**0.00000**
	Time	**Ln[COC]**	**[COC]**		
first:	19-Oct-98	0.00	1		
mid:	12-Apr-99	0.00	1		
last:	7-Sep-99	0.00	1		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	7-Sep-99	0.00	1		

Load over time analysis

	dPb	SR50			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.925**	**0.00961**
	Time	**LnLoad**	**Load**		
first:	19-Oct-98	2.45	12		
mid:	12-Apr-99	4.13	62		
last:	7-Sep-99	5.56	259		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	7-Sep-99	0.00	1		

max r2: #DIV/0!

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00

max r2: 1.000

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.925	0.00961	-344.24
0.925	0.00961	-344.24
0.925	0.00961	-344.24
0.925	0.00961	-344.24
1.000	0.01299	-466.90

update for EV, CV:

dPb | **SR50**

LN Analysis | **dPb**

Load | **Load Data, EV=72.3 lbs/day CV=0.393**

Avg:	72	**Load Data-based LN**		
SD:	28	u	ln dPb Load	dPb Load
CV:	0.39	3	5.3	210
Min:	50.1	0	4.21	67
Max:	112	-3	3.07	21.6
Median:				
		72	72.3	
		0.39	0.393	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.908, EV=40.9lbs/day CV=1.32; max r2=0**

r2 u,lnLoad:	0.908	u	lnLoad	Load			
slope, m:	0.996	3	6.22	502			
intercept, b:	-3.195	0	3.21	25			
N: 3		-3	0.20	1.2			
E[Load]:	40.9	Parameter Estimates				0.908	0.908
SD[Load]:	54	from LN regression				40.9	40.9
CV[Load]:	1.32	update graph label				1.3	1.32
						max r2	
	dPb	N: 9				0.000	
	Load	i	i-3/8 / N+1/4	u	Ln	r2	
Date	lbs/day	rank	plotting points	y-axis	x-axis	forward	
	Ranked						
update and rank for new data							
7-Sep-99		1	0.0676	-1.494			
13-Nov-98		2	0.1757	-0.932			
9-Aug-99		3	0.2838	-0.572			
19-Oct-98		4	0.3919	-0.274			
12-Jul-99		5	0.5000	0.000			
16-Dec-98		6	0.6081	0.274			
11-Mar-99	50.1	7	0.7162	0.572	3.915		
12-Apr-99	54.3	8	0.8243	0.932	3.995		
7-Jun-99	112.4	9	0.9324	1.494	4.722		

update for EV, CV:

dPb		SR50		1	1.02
LN Analysis		dPb		0.01	0.008

Concentration

Conc. Data, EV=1.02 ug/L CV=0.008

		Data-based LN		
Avg:	1	u	ln[dPb]	[dPb]
SD:	0	3	0.0	1
CV:	0.01	0	0.02	1
Min:	1	-3	0.00	1
Max:	1			
Median:	1			

					0.984 0.984
u=mLn(Conc.)+b:					1.0 0.999
update for r2, EV, CV:	r2=0.984, EV=0.999 ug/L CV=0.0213; max r2=0				0.021 0.0213
	r2 u,lnConc:	0.984	u	lnConc.	Conc.
	slope, m:	47.030	3	0.06	1
	intercept, b:	0.069	0	0.00	1
	N: 3		-3	-0.07	1
	E[Conc]:	1.0	Parameter Estimates		
	SD[Conc]:	0	from LN regression		
	CV[Conc]:	0.02	update graph label		

	dPb	N: 9				max r2 0.000
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
19-Oct-98		1	0.0676	-1.494		
13-Nov-98		2	0.1757	-0.932		
16-Dec-98		3	0.2838	-0.572		
12-Jul-99		4	0.3919	-0.274		
9-Aug-99		5	0.5000	0.000		
7-Sep-99		6	0.6081	0.274		
11-Mar-99	1.01	7	0.7162	0.572	0.010	
12-Apr-99	1.02	8	0.8243	0.932	0.020	
7-Jun-99	1.03	9	0.9324	1.494	0.030	

update for EV, CV:

dPb		**SR50**			6,419	6420
LN Analysis		**dPb**			0.95	0.946

Discharge, Q

Q Data, EV=6420 cfs CV=0.946

		Q Data-based LN				
Avg:	6,419	u	lnQ	Q		
SD:	6,073	3	10.8	51330		
CV:	0.95	0	8.45	4663		
Min:	458	-3	6.05	424		
Max:	20,900					
Median:	5,030					

					0.973	0.973
					8842.4	8840
	u=mLn(Q)+b:				2.11	2.11
update for r2, EV, CV:	**r2=0.973, EV=8840 cfs CV=2.11; max r2=0.97**					
	r2 u,lnQ:	0.973	u	lnQ	Q	
	slope, m:	0.769	3	12.14	187999	
	intercept, b:	-6.334	0	8.24	3793	
	N: 9		-3	4.34	77	
	E[Q]:	8842.4	Parameter Estimates			
	SD[Q]:	18622	from LN regression			
	CV[Q]:	2.11	update graph label			

		N: 9				max r2 0.973
	Q Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs Ranked**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
update and rank for new data						
7-Sep-99	*458*	1	0.0676	-1.494	6.127	0.973
13-Nov-98	*1110*	2	0.1757	-0.932	7.012	0.966
9-Aug-99	*2180*	3	0.2838	-0.572	7.687	0.956
19-Oct-98	*2340*	4	0.3919	-0.274	7.758	0.935
12-Jul-99	*5030*	5	0.5000	0.000	8.523	0.969
16-Dec-98	*6330*	6	0.6081	0.274	8.753	
11-Mar-99	9320	7	0.7162	0.572	9.140	
12-Apr-99	10100	8	0.8243	0.932	9.220	
7-Jun-99	20900	9	0.9324	1.494	9.948	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.		see comment
Station:	SR50	Date: 23-Jul-00
Chemical:	dZn	Analyst: L.Raschke
Notes:		

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,239	6,011	59	2,373	0.00	0.00	0.00
SD:	119	5,890	19	2,310	1.00	1.00	1.00
CV:	0.00	0.98	0.32	0.97			
Min:	36,087	458	32	78.8	-0.94	-1.43	-0.99
Max:	36,410	20,900	88	6,971	2.53	1.49	1.99
Median:	36,246	3,685	58	1,218	-0.39	-0.08	-0.50

dZn	SR50		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.26)		update r2	0.26	0.26	r2:	0.037	0.00001
r2 Q,[COC]:	0.26	[dZn]	Q		m:	9.5677	-0.00003
slope, m:	0.0016	50	458.0		b:	-340709	9.28
intercept, b:	49.1	59	6010.8				
N: 9		83	20900				
LnConc. = mLn(Q)+b (r2=0.528)		update r2	0.53	0.528			
r2 lnQ,ln[COC]:	0.53	ln[dZn]	ln Q	[dZn]	Q		
slope, m:	0.22	3.57	6.13	36	458		
intercept, b:	2.24	4.13	8.70	62	6,011		
N: 9		4.40	9.95	81	20,900		

N= 10

	Sampling Date	Q Discharge	dZn Concentration	dZn Load	Ln Q	Ln dZn Conc.	Ln dZn Load	dZn SR50 Standardized Values = (x - Avg)/SD Q	Conc	Load	for graph dZn 0
update for new data		cfs	ug/L	lbs/day							
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis				
USGS	*19-Oct-98*	*2340*			7.76			-0.62			
USGS	19-Oct-98	2340	51	642.0	7.76	3.93	6.46	-0.62	-0.44	-0.75	
USGS	13-Nov-98	1110	58	346.4	7.01	4.06	5.85	-0.83	-0.08	-0.88	
USGS	16-Dec-98	6330	77	2622.3	8.75	4.34	7.87	0.05	0.91	0.11	
USGS	11-Mar-99	9320	85	4262.0	9.14	4.44	8.36	0.56	1.33	0.82	
USGS	12-Apr-99	10100	88	4781.7	9.22	4.48	8.47	0.69	1.49	1.04	
USGS	7-Jun-99	20900	62	6971.4	9.95	4.13	8.85	2.53	0.13	1.99	
USGS	12-Jul-99	5030	45	1217.8	8.52	3.81	7.10	-0.17	-0.75	-0.50	
USGS	9-Aug-99	2180	37	434.0	7.69	3.61	6.07	-0.65	-1.17	-0.84	
USGS	7-Sep-99	458	32	78.8	6.13	3.47	4.37	-0.94	-1.43	-0.99	

dZn

Concentration over time analysis

	dZn	SR50		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.290	-0.00161
	Time	Ln[COC]	[COC]		
first:	19-Oct-98	4.30	74		
mid:	27-Mar-99	4.04	57		
last:	7-Sep-99	3.78	44		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	7-Sep-99	0.00	1		

Load over time analysis

	dZn	SR50			
				Load over time	
	LnLoad=mTime+b All data r2, m:			0.034	-0.00229
	Time	LnLoad	Load		
first:	19-Oct-98	7.43	1,687		
mid:	27-Mar-99	7.07	1,172		
last:	7-Sep-99	6.69	806		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	7-Sep-99	0.00	1		

	max r2:	0.993		max r2:	0.799	
	Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.290	-0.00161	62.58	0.034	-0.00229	90.01
	0.290	-0.00161	62.58	0.034	-0.00229	90.01
	0.491	-0.00246	93.21	0.097	-0.00449	170.04
	0.755	-0.00385	143.65	0.467	-0.01173	432.93
	0.959	-0.00602	222.65	0.713	-0.02101	770.56
	0.993	-0.00708	261.11	0.799	-0.02847	1041.57

update for EV, CV:

dZn		***SR50***		
LN Analysis		**dZn**		
Load		**Load Data, EV=2370 lbs/day CV=0.974**		
Avg:	**2,373**	**Load Data-based LN**		
SD:	**2,310**	u	ln dZn Load	dZn Load
CV:	**0.97**	3	9.9	19696
Min:	**78.8**	0	7.44	1700
Max:	**6,971**	-3	4.99	146.8
Median:	**1,218**			
		2,373	2370	
		0.97	0.974	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.961, EV=3640lbs/day CV=3.67; max r2=0.96**

r2 u,lnLoad:	0.961	u	lnLoad	Load	
slope, m:	0.612	3	11.77	129072	
intercept, b:	-4.198	0	6.86	957	
N: 9		-3	1.96	7.1	
E[Load]:	3640.9	Parameter Estimates			0.961
SD[Load]:	13367	from LN regression			3640.9
CV[Load]:	3.67	update graph label			3.7
					max r2
	N: 10				0.961

Date	dZn Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
7-Sep-99	78.8	1	0.0610	-1.547	4.368	0.961
19-Oct-98		2	0.1585	-1.000		
13-Nov-98	346.4	3	0.2561	-0.655	5.847	0.930
9-Aug-99	434.0	4	0.3537	-0.375	6.073	0.903
19-Oct-98	642.0	5	0.4512	-0.123	6.465	0.866
12-Jul-99	1217.8	6	0.5488	0.123	7.105	0.848
16-Dec-98	2622.3	7	0.6463	0.375	7.872	
11-Mar-99	4262.0	8	0.7439	0.655	8.358	
12-Apr-99	4781.7	9	0.8415	1.000	8.473	
7-Jun-99	6971.4	10	0.9390	1.547	8.850	

		update for EV, CV:			
dZn		**SR50**		59	59.4
LN Analysis		**dZn**		0.32	0.323
Concentration		**Conc. Data, EV=59.4 ug/L CV=0.323**			
Avg:	59	**Data-based LN**			
SD:	19	u	ln[dZn]	[dZn]	
CV:	0.32	3	5.0	146	
Min:	32	0	4.04	57	
Max:	88	-3	3.09	22	
Median:	58				

					0.955	0.955
	u=mLn(Conc.)+b:				57.6	57.6
update for r2, EV, CV:	**r2=0.955, EV=57.6 ug/L CV=0.476; max r2=0.96**				0.476	0.476
	r2 u,lnConc:	0.955	u	lnConc.	Conc.	
	slope, m:	2.214	3	5.31	202	
	intercept, b:	-8.749	0	3.95	52	
	N: 9		-3	2.60	13	
0.961	E[Conc]:	57.6	Parameter Estimates			
3640	SD[Conc]:	27	from LN regression			
3.67	CV[Conc]:	0.48	update graph label			

	dZn	N: 10				max r2 0.955
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
		1	0.0610	-1.547		
7-Sep-99	32	2	0.1585	-1.000	3.466	0.955
9-Aug-99	37	3	0.2561	-0.655	3.611	0.939
12-Jul-99	45	4	0.3537	-0.375	3.807	0.929
19-Oct-98	51	5	0.4512	-0.123	3.932	0.904
13-Nov-98	58	6	0.5488	0.123	4.060	0.862
7-Jun-99	62	7	0.6463	0.375	4.127	
16-Dec-98	77	8	0.7439	0.655	4.344	
11-Mar-99	85	9	0.8415	1.000	4.443	
12-Apr-99	88	10	0.9390	1.547	4.477	

update for EV, CV:

dZn		**SR50**			6,011	6010
LN Analysis		**dZn**			0.98	0.98
Discharge, Q		**Q Data, EV=6010 cfs CV=0.98**				
Avg:	**6,011**	**Q Data-based LN**				
SD:	**5,890**	**u**	**lnQ**	**Q**		
CV:	**0.98**	3	10.8	50309		
Min:	**458**	0	8.36	4293		
Max:	**20,900**	-3	5.90	366		
Median:	**3,685**					
					0.973	0.973
					7719.4	7720
		u=mLn(Q)+b:			1.89	1.89

update for r2, EV, CV: **r2=0.973, EV=7720 cfs CV=1.89; max r2=0.97**

r2 u,lnQ:	0.973	u	lnQ	Q
slope, m:	0.812	3	11.89	145595
intercept, b:	-6.650	0	8.19	3614
N:	10	-3	4.50	90
E[Q]:	7719.4	Parameter Estimates		
SD[Q]:	14570	from LN regression		
CV[Q]:	1.89	update graph label		

Date	Q Discharge cfs Ranked	i rank (N: 10)	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.973 r2 forward
update and rank for new data						
7-Sep-99	458	1	0.0610	-1.547	6.127	0.973
13-Nov-98	1110	2	0.1585	-1.000	7.012	0.965
9-Aug-99	2180	3	0.2561	-0.655	7.687	0.951
19-Oct-98	*2340*	4	0.3537	-0.375	7.758	0.950
19-Oct-98	2340	5	0.4512	-0.123	7.758	0.930
12-Jul-99	5030	6	0.5488	0.123	8.523	0.970
16-Dec-98	6330	7	0.6463	0.375	8.753	
11-Mar-99	9320	8	0.7439	0.655	9.140	
12-Apr-99	10100	9	0.8415	1.000	9.220	
7-Jun-99	20900	10	0.9390	1.547	9.948	

Secondary Scale For LN graphs

z	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR50	**Date:**	14-Jul-00
Chemical:	tCd	**Analyst:**	J.Johnston
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,248	4,609	1	21	0.00	0.00	0.00
SD:	118	3,464	0	21	1.00	1.00	1.00
CV:	0.00	0.75	0.56	1.00			
Min:	36,087	458	0	0.4	-1.20	-1.37	-0.98
Max:	36,410	10,100	1	54	1.59	0.77	1.62
Median:	36,246	3,685	1	9	-0.27	0.77	-0.55

tCd SR50			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.224)		update r2	0.22	0.224	r2:	0.008	0.043
r2 Q,[COC]:	0.22	[tCd]	Q		m:	-2.6726	-0.00179
slope, m:	0.0	0	458.0		b:	101484	72.88
intercept, b:	0.5	1	4608.5				
N: 8		1	10100				
LnConc. = mLn(Q)+b (r2=0.257)		update r2		0.26	0.257		
r2 lnQ,ln[COC]:	0.26	ln[tCd]	ln Q	[tCd]	Q		
slope, m:	0.40	-1.38	6.13	0	458		
intercept, b:	-3.85	-0.46	8.44	1	4,609		
N: 8		-0.14	9.22	1	10,100		

N= 8

	Sampling Date	Q Discharge	tCd Concentration	tCd Load	Ln Q	Ln tCd Conc.	Ln tCd Load	tCd SR50 Standardized Values = (x - Avg)/SD		
update for new data		cfs	ug/L	lbs/day						for graph 0
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis	Q	Conc	Load
USGS	19-Oct-98	2340	1	12.6	7.76	0.00	2.53	-0.65	0.77	-0.39
USGS	13-Nov-98	1110	1	6.0	7.01	0.00	1.79	-1.01	0.77	-0.71
USGS	16-Dec-98	6330	1	34.1	8.75	0.00	3.53	0.50	0.77	0.64
USGS	11-Mar-99	9320	1	50.1	9.14	0.00	3.91	1.36	0.77	1.42
USGS	12-Apr-99	10100	1	54.3	9.22	0.00	4.00	1.59	0.77	1.62
USGS	12-Jul-99	5030	0.23	6.2	8.52	-1.47	1.83	0.12	-1.20	-0.70
USGS	9-Aug-99	2180	0.19	2.2	7.69	-1.66	0.80	-0.70	-1.30	-0.90
USGS	7-Sep-99	458	0.16	0.4	6.13	-1.83	-0.93	-1.20	-1.37	-0.98

tCd

Concentration over time analysis

	tCd	SR50		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.792**	**-0.00610**
	Time	**Ln[COC]**	**[COC]**		
first:	19-Oct-98	0.36	1		
mid:	27-Mar-99	-0.61	1		
last:	7-Sep-99	-1.61	0		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	7-Sep-99	0.00	1		

Load over time analysis

	tCd	SR50		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.343**	**-0.00789**
	Time	**LnLoad**	**Load**		
first:	19-Oct-98	3.45	31		
mid:	27-Mar-99	2.19	9		
last:	7-Sep-99	0.90	2		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	7-Sep-99	0.00	1		

max r2: 0.964

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.792	-0.00610	220.65
0.815	-0.00692	250.20
0.855	-0.00830	300.40
0.964	-0.01157	419.30
0.963	-0.01287	466.71

max r2: 0.951

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.343	-0.00789	288.30
0.403	-0.00997	363.63
0.740	-0.01683	613.23
0.925	-0.02603	947.65
0.951	-0.03134	1140.69

update for EV, CV:

tCd		SR50		
LN Analysis		tCd		
Load		Load Data, EV=20.7 lbs/day CV=0.997		
Avg:	21	Load Data-based LN		
SD:	21	u	ln tCd Load	tCd Load
CV:	1.00	3	5.2	178
Min:	0.4	0	2.69	15
Max:	54	-3	0.19	1.2
Median:	9			
		21	20.7	
		1.00	0.997	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.357, EV=918lbs/day CV=103; max r2=0.99**

r2 u,lnLoad:	0.357	u	lnLoad	Load		
slope, m:	-0.328	3	-6.96	0		
intercept, b:	0.716	0	2.18	9		
N:	8	-3	11.32	82503.4		
E[Load]:	917.5	Parameter Estimates			0.357	0.357
SD[Load]:	94955	from LN regression			917.5	918
CV[Load]:	103.49	update graph label			103.5	103
					max r2	
	tCd	N: 8			0.955	
	Load	i	i-3/8 / N+1/4	u	Ln	r2
Date	lbs/day Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
19-Oct-98	12.6	1	0.0758	-1.434	2.533	0.357
13-Nov-98	6.0	2	0.1970	-0.852	1.787	0.490
16-Dec-98	34.1	3	0.3182	-0.473	3.528	0.872
11-Mar-99	50.1	4	0.4394	-0.153	3.915	0.953
12-Apr-99	54.3	5	0.5606	0.153	3.995	0.955
12-Jul-99	6.2	6	0.6818	0.473	1.828	
9-Aug-99	2.2	7	0.8030	0.852	0.801	
7-Sep-99	0.4	8	0.9242	1.434	-0.931	

update for EV, CV:

tCd		SR50		1	0.698
LN Analysis		tCd		0.56	0.56

Concentration

Conc. Data, EV=0.698 ug/L CV=0.56

		Data-based LN		
Avg:	1	u	ln[tCd]	[tCd]
SD:	0	3	1.1	3
CV:	0.56	0	-0.50	1
Min:	0	-3	-2.06	0
Max:	1			
Median:	1			

				0.713	0.713
u=mLn{Conc.}+b:				1.0	0.981
update for r2, EV, CV:	r2=0.713, EV=0.981 ug/L CV=1.53; max r2=0.99			1.526	1.53
r2 u,lnConc:	0.713	u	lnConc.	Conc.	
slope, m:	-0.912	3	-3.91	0	
intercept, b:	-0.566	0	-0.62	1	
N:	8	-3	2.67	14	
E[Conc]:	1.0	Parameter Estimates			
SD[Conc]:	1	from LN regression			
CV[Conc]:	1.53	update graph label			

	tCd	N: 8				max r2 0.808
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
19-Oct-98	1	1	0.0758	-1.434	0.000	0.713
13-Nov-98	1	2	0.1970	-0.852	0.000	0.785
16-Dec-98	1	3	0.3182	-0.473	0.000	0.808
11-Mar-99	1	4	0.4394	-0.153	0.000	0.780
12-Apr-99	1	5	0.5606	0.153	0.000	0.657
12-Jul-99	0.23	6	0.6818	0.473	-1.470	
9-Aug-99	0.19	7	0.8030	0.852	-1.661	
7-Sep-99	0.16	8	0.9242	1.434	-1.833	

update for EV, CV:

tCd		SR50			4,609	4610
LN Analysis		tCd			0.75	0.752
Discharge, Q		Q Data, EV=4610 cfs CV=0.752				
Avg:	4,609	Q Data-based LN				
SD:	3,464	u	lnQ	Q		
CV:	0.75	3	10.2	27433		
Min:	458	0	8.21	3684		
Max:	10,100	-3	6.20	495		
Median:	3,685					

					0.069	0.0691
					#########	59200000
u=mLn(Q)+b:					19306.49	19300

update for r2, EV, CV: r2=0.0691, EV=59200000 cfs CV=19300; max r2=0.98

r2 u,lnQ:	0.069	u	lnQ	Q	
slope, m:	-0.225	3	-5.30	0	
intercept, b:	1.807	0	8.03	3064	
N: 8		-3	21.36	#########	
E[Q]:	59159520.4	Parameter Estimates			
SD[Q]:	1142162942902	from LN regression			
CV[Q]:	19306.49	update graph label			

N: 8

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.997 r2 forward
update and rank for new data						
19-Oct-98	2340	1	0.0758	-1.434	7.758	0.069
13-Nov-98	1110	2	0.1970	-0.852	7.012	0.175
16-Dec-98	6330	3	0.3182	-0.473	8.753	0.783
11-Mar-99	9320	4	0.4394	-0.153	9.140	0.942
12-Apr-99	10100	5	0.5606	0.153	9.220	0.997
12-Jul-99	5030	6	0.6818	0.473	8.523	
9-Aug-99	2180	7	0.8030	0.852	7.687	
7-Sep-99	458	8	0.9242	1.434	6.127	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

Several values were reported at a concentration of 1 µg/L by the laboratory. Because the log of 1 is zero, use of 1 causes division by zero in the lognormal probabilistic analysis. Therefore, to perform the analyses, these values were changed to 1.01, 1.02, 1.03, etc. These changes are within the data uncertainty and have a minimal impact on estimations of concentrations and no impact on loading calculations.

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR50	Date:	14-Jul-00
Chemical:	tPb	Analyst:	J.Johnston
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	36,219	6,628	2	118		0.00	0.00	0.00
SD:	109	5,894	2	203		1.00	1.00	1.00
CV:	0.00	0.89	0.79	1.72				
Min:	36,087	1,110	1	6.0		-0.94	-0.63	-0.55
Max:	36,381	20,900	6	675		2.42	2.58	2.74
Median:	36,230	5,030	1	34		-0.27	-0.50	-0.41

tPb	SR50		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.919)		update r2	0.92	0.919		r2:	0.171	0.201
r2 Q,[COC]:	0.92	[tPb]	Q			m:	22.2906	0.00361
slope, m:	0.0	1	1110.0			b:	-800725	-122.49
intercept, b:	0.3	2	6627.8					
N: 9		6	20900					
LnConc. = mLn(Q)+b (r2=0.73)		update r2		0.73	0.73			
r2 lnQ,ln[COC]:	0.73	ln[tPb]	ln Q	[tPb]	Q			
slope, m:	0.57	-0.34	7.01	1	1,110			
intercept, b:	-4.36	0.69	8.80	2	6,628			
N: 9		1.35	9.95	4	20,900			

N= 9

	Sampling Date	Q Discharge	tPb Concentration	tPb Load	Ln Q	Ln tPb Conc.	Ln Load	tPb SR50 Standardized Values = (x - Avg)/SD Q	Conc	Load	tPb for graph 0
update for new data		cfs	ug/L	lbs/day							
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis				
USGS	19-Oct-98	2340	1	12.6	7.76	0.00	2.53	-0.73	-0.63	-0.52	
USGS	19-Oct-98	2340	1	12.6	7.76	0.00	2.53	-0.73	-0.63	-0.52	
USGS	13-Nov-98	1110	1	6.0	7.01	0.00	1.79	-0.94	-0.63	-0.55	
USGS	16-Dec-98	6330	1	34.1	8.75	0.00	3.53	-0.05	-0.63	-0.41	
USGS	11-Mar-99	9320	2	100.3	9.14	0.69	4.61	0.46	0.01	-0.09	
USGS	12-Apr-99	10100	3	163.0	9.22	1.10	5.09	0.59	0.66	0.22	
USGS	7-Jun-99	20900	6	674.7	9.95	1.79	6.51	2.42	2.58	2.74	
USGS	12-Jul-99	5030	1.6	43.3	8.52	0.47	3.77	-0.27	-0.24	-0.37	
USGS	9-Aug-99	2180	1.2	14.1	7.69	0.18	2.64	-0.75	-0.50	-0.51	

tPb

Concentration over time analysis

	tPb	SR50		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.306	0.00300
	Time	Ln[COC]	[COC]		
first:	19-Oct-98	0.07	1		
mid:	11-Mar-99	0.50	2		
last:	9-Aug-99	0.95	3		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Aug-99	0.00	1		

Load over time analysis

	tPb	SR50		Load over time	
	LnLoad=mTime+b All data r2, m:			0.259	0.00661
	Time	LnLoad	Load		
first:	19-Oct-98	2.79	16		
mid:	11-Mar-99	3.74	42		
last:	9-Aug-99	4.74	114		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Aug-99	0.00	1		

max r2: 0.306

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.306	0.00300	-108.07
0.250	0.00287	-103.54
0.163	0.00260	-93.51
0.044	0.00158	-56.59
0.126	-0.00355	129.87

max r2: 0.259

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.259	0.00661	-235.79
0.200	0.00617	-219.85
0.114	0.00520	-184.61
0.007	-0.00126	50.09
0.258	-0.01176	431.62

update for EV, CV:

tPb		SR50			
LN Analysis		tPb			
Load		Load Data, EV=118 lbs/day CV=1.72			
Avg:	118	Load Data-based LN			
SD:	203	u	ln tPb Load	tPb Load	
CV:	1.72	3	7.6	2001	
Min:	6.0	0	4.08	59	
Max:	675	-3	0.56	1.8	
Median:	34				
		118	118		
		1.72	1.72		

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.939, EV=156lbs/day CV=3.86; max r2=0.99**

r2 u,lnLoad:	0.939	u	lnLoad	Load			
slope, m:	0.601	3	8.66	5763			
intercept, b:	-2.204	0	3.67	39			
N: 9		-3	-1.32	0.3			
E[Load]:	156.3	Parameter Estimates				0.939	0.939
SD[Load]:	604	from LN regression				156.3	156
CV[Load]:	3.86	update graph label				3.9	3.86
						max r2	
	tPb	N: 9				0.988	
	Load	i	i-3/8 / N+1/4	u	Ln	r2	
Date	lbs/day Ranked	rank	plotting points	y-axis	x-axis	forward	
update and rank for new data.							
13-Nov-98	6.0	1	0.0676	-1.494	1.787	0.939	
19-Oct-98	12.6	2	0.1757	-0.932	2.533	0.947	
19-Oct-98	12.6	3	0.2838	-0.572	2.533	0.982	
9-Aug-99	14.1	4	0.3919	-0.274	2.644	0.988	
16-Dec-98	34.1	5	0.5000	0.000	3.528	0.983	
12-Jul-99	43.3	6	0.6081	0.274	3.768		
11-Mar-99	100.3	7	0.7162	0.572	4.608		
12-Apr-99	163.0	8	0.8243	0.932	5.094		
7-Jun-99	674.7	9	0.9324	1.494	6.514		

update for EV, CV:

tPb		SR50		2	1.98
LN Analysis		tPb		0.79	0.787

Concentration

Conc. Data, EV=1.98 ug/L CV=0.787

		Data-based LN		
Avg:	2	u	ln[tPb]	[tPb]
SD:	2	3	2.5	12
CV:	0.79	0	0.44	2
Min:	1	-3	-1.64	0
Max:	6			
Median:	1			

u=mLn{Conc.}+b:

update for r2, EV, CV: r2=0.807, EV=2.12 ug/L CV=0.865; max r2=0.99

r2 u,lnConc:	0.807	u	lnConc.	Conc.
slope, m:	1.338	3	2.71	15
intercept, b:	-0.630	0	0.47	2
N:	9	-3	-1.77	0
E[Conc]:	2.1	Parameter Estimates		
SD[Conc]:	2	from LN regression		
CV[Conc]:	0.86	update graph label		

						0.807	0.807
						2.1	2.12
						0.865	0.865
	tPb	N: 9					max r2
	Concentration	i	i-3/8 / N+1/4	u	Ln		0.993 r2
Date	ug/L	rank	plotting points	y-axis	x-axis		forward
	Ranked						
re-date and rank for new data							
19-Oct-98	1	1	0.0676	-1.494	0.000		0.807
19-Oct-98	1	2	0.1757	-0.932	0.000		0.902
13-Nov-98	1	3	0.2838	-0.572	0.000		0.959
16-Dec-98	1	4	0.3919	-0.274	0.000		0.990
9-Aug-99	1.2	5	0.5000	0.000	0.182		0.993
12-Jul-99	1.6	6	0.6081	0.274	0.470		
11-Mar-99	2	7	0.7162	0.572	0.693		
12-Apr-99	3	8	0.8243	0.932	1.099		
7-Jun-99	6	9	0.9324	1.494	1.792		

update for EV, CV:

tPb		**SR50**			6,628	6630
LN Analysis		**tPb**			0.89	0.889
Discharge, Q		**Q Data, EV=6630 cfs CV=0.889**				
Avg:	**6,628**	**Q Data-based LN**				
SD:	**5,894**	**u**	**lnQ**	**Q**		
CV:	**0.89**	3	10.8	48906		
Min:	**1,110**	0	8.51	4953		
Max:	**20,900**	-3	6.22	502		
Median:	**5,030**					
					0.963	0.963
					7642.2	7640
u=mLn{Q}+b:					1.35	1.35

update for r2, EV, CV: **r2=0.963, EV=7640 cfs CV=1.35; max r2=0.97**

r2 u,lnQ:	0.963	u	lnQ	Q
slope, m:	0.981	3	11.48	96717
intercept, b:	-8.264	0	8.42	4546
N: 9		-3	5.36	214
E[Q]:	7642.2	Parameter Estimates		
SD[Q]:	10325	from LN regression		
CV[Q]:	1.35	update graph label		

N: 9

max r2 0.969

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
13-Nov-98	1110	1	0.0676	-1.494	7.012	0.963
9-Aug-99	2180	2	0.1757	-0.932	7.687	0.947
19-Oct-98	2340	3	0.2838	-0.572	7.758	0.954
19-Oct-98	2340	4	0.3919	-0.274	7.758	0.935
12-Jul-99	5030	5	0.5000	0.000	8.523	0.969
16-Dec-98	6330	6	0.6081	0.274	8.753	
11-Mar-99	9320	7	0.7162	0.572	9.140	
12-Apr-99	10100	8	0.8243	0.932	9.220	
7-Jun-99	20900	9	0.9324	1.494	9.948	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SR55 **Date:** 21-Jul-00
Chemical: dCd **Analyst:** L.Raschke
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,342	6,896	1	79	0.00	#DIV/0!	0.00
SD:	47	5,515	0	1	1.00	#DIV/0!	1.00
CV:	0.00	0.80	0.00	0.01			
Min:	36,265	633	1	78.5	-1.14	#DIV/0!	-1.00
Max:	36,412	14,800	1	80	1.43	#DIV/0!	1.00
Median:	36,356	3,700	1	79	-0.58	#DIV/0!	0.00

dCd SR55 : Concentration v. Discharge, Q

					Q = mTime +b		LnQ = mTime +b
#DIV/0!		update r2	#DIV/0!	#DIV/0!	r2:	0.592	0.765
r2 Q,[COC]:	#DIV/0!	[dCd]	Q		m:	-90.1456	-0.02002
slope, m:	0.0	1	633.0		b:	3282955	736.04
intercept, b:	1.0	1	6896.1				
N: 2		1	14800				
#DIV/0!		update r2		#DIV/0!	#DIV/0!		
r2 lnQ,ln[COC]:	#DIV/0!	ln[dCd]	ln Q	[dCd]	Q		
slope, m:	0.00	0.00	6.45	1	633		
intercept, b:	0.00	0.00	8.84	1	6,896		
N: 2		0.00	9.60	1	14,800		

N= 7

	Sampling Date	Q Discharge	dCd Concentration	dCd Load	Ln Q	Ln dCd Conc.	Ln dCd Load	dCd SR55 Standardized Values = (x - Avg)/SD Q	Conc	Load	for graph 0
update for new data		cfs	ug/L	lbs/day							
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis				
USGS	*15-Apr-99*	*9100*			9.12			0.40			
USGS	13-May-99	14600	1	78.5	9.59	0.00	4.36	1.40	#DIV/0!	-1.00	
USGS	17-Jun-99	14800	1	79.6	9.60	0.00	4.38	1.43	#DIV/0!	1.00	
USGS	*15-Jul-99*	*3700*			8.22			-0.58			
USGS	*15-Jul-99*	*3700*			8.22			-0.58			
USGS	*11-Aug-99*	*1740*			7.46			-0.93			
USGS	9-Sep-99	633			6.45			-1.14			

dCd

Concentration over time analysis

				r2	Slope, m
	dCd	SR55		Concentration over time	
	LnConc.=mTime+b All data r2, m:			#DIV/0!	0.00000
	Time	Ln[COC]	[COC]		
first:	15-Apr-99	0.00	1		
mid:	15-Jul-99	0.00	1		
last:	9-Sep-99	0.00	1		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

Load over time analysis

	dCd	SR55		Load over time	
	LnLoad=mTime+b All data r2, m:			1.000	0.00039
	Time	LnLoad	Load		
first:	15-Apr-99	4.35	78		
mid:	15-Jul-99	4.39	80		
last:	9-Sep-99	4.41	82		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

	max r2:	#DIV/0!		max r2:	#DIV/0!
	Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)	
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows	
	#DIV/0!	0.00000	0.00	1.000	0.00039	-9.74
	#DIV/0!	0.00000	0.00	1.000	0.00039	-9.74
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

dCd		**SR55**		
LN Analysis		**dCd**		
Load		**Load Data, EV=79.1 lbs/day CV=0.0068**		
Avg:	**79**	**Load Data-based LN**		
SD:	**1**	**u**	**ln dCd Load**	**dCd Load**
CV:	**0.01**	3	4.4	81
Min:	**78.5**	0	4.37	79
Max:	**80**	-3	4.35	77.5
Median:	**79**			
		79	79.1	
		0.01	0.0068	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=1, EV=77.2lbs/day CV=0.0224; max r2=0.99**

r2 u,lnLoad:	1.000	u	lnLoad	Load		
slope, m:	44.555	3	4.41	83		
intercept, b:	-193.665	0	4.35	77		
N: 2		-3	4.28	72.2		
E[Load]:	77.2	Parameter Estimates			1.000	1
SD[Load]:	2	from LN regression			77.2	77.2
CV[Load]:	0.02	update graph label			0.0	0.0224
					max r2	
		N: 7			0.000	

Date	dCd Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
9-Sep-99		1	0.0862	-1.364		
11-Aug-99		2	0.2241	-0.758		
15-Jul-99		3	0.3621	-0.353		
15-Jul-99		4	0.5000	0.000		
15-Apr-99		5	0.6379	0.353		
13-May-99	78.5	6	0.7759	0.758	4.364	
17-Jun-99	79.6	7	0.9138	1.364	4.377	

update for EV, CV:

dCd		SR55		1	1
LN Analysis		dCd		0.00	0

Concentration

Conc. Data, EV=1 ug/L CV=0

		Data-based LN		
Avg:	1	u	ln[dCd]	[dCd]
SD:	0	3	0.0	1
CV:	0.00	0	0.00	1
Min:	1	-3	0.00	1
Max:	1			
Median:	1			

u=mLn(Conc.)+b:

update for r2, EV, CV: #DIV/0!

r2 u,lnConc:	#DIV/0!	u	lnConc.	Conc.	
slope, m:	#DIV/0!	3	#DIV/0!	#DIV/0!	
intercept, b:	#DIV/0!	0	#DIV/0!	#DIV/0!	
N: 2		-3	#DIV/0!	#DIV/0!	
E[Conc]:	#DIV/0!	Parameter Estimates			
SD[Conc]:	#DIV/0!	from LN regression			
CV[Conc]:	#DIV/0!	update graph label			

#DIV/0! #DIV/0!
#DIV/0! #DIV/0!
#DIV/0! #DIV/0!

N: 7

Date	dCd Concentration ug/L Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.000 r2 forward
update and rank for new data						
15-Apr-99		1	0.0862	-1.364		
15-Jul-99		2	0.2241	-0.758		
15-Jul-99		3	0.3621	-0.353		
11-Aug-99		4	0.5000	0.000		
9-Sep-99		5	0.6379	0.353		
13-May-99	1	6	0.7759	0.758	0.000	
17-Jun-99	1	7	0.9138	1.364	0.000	

update for EV, CV:

dCd		**SR55**			6,896	6900
LN Analysis		**dCd**			0.80	0.8
Discharge, Q		**Q Data, EV=6900 cfs CV=0.8**				
Avg:	**6,896**	**Q Data-based LN**				
SD:	**5,515**	u	lnQ	Q		
CV:	**0.80**	3	10.7	44401		
Min:	**633**	0	8.59	5386		
Max:	**14,800**	-3	6.48	653		
Median:	**3,700**					
					0.934	0.934
					10170.4	10200
	u=mLn(Q)+b:				2.11	2.11

update for r2, EV, CV: **r2=0.934, EV=10200 cfs CV=2.11; max r2=0.98**

r2 u,lnQ:	0.934	u	lnQ	Q
slope, m:	0.768	3	12.29	216802
intercept, b:	-6.432	0	8.38	4354
N: 7		-3	4.47	87
E[Q]:	10170.4	Parameter Estimates		
SD[Q]:	21471	from LN regression		
CV[Q]:	2.11	update graph label		

N: 7

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.934 r2 forward
update and rank for new data						
9-Sep-99	*633*	1	0.0862	-1.364	6.450	0.934
11-Aug-99	*1740*	2	0.2241	-0.758	7.462	0.896
15-Jul-99	*3700*	3	0.3621	-0.353	8.216	0.832
15-Jul-99	*3700*	4	0.5000	0.000	8.216	
15-Apr-99	*9100*	5	0.6379	0.353	9.116	
13-May-99	14600	6	0.7759	0.758	9.589	
17-Jun-99	14800	7	0.9138	1.364	9.602	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR55	Date:	21-Jul-00
Chemical:	dPb	Analyst:	L Raschke
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	36,342	6,896	1	70	0.00	0.00	0.00
SD:	47	5,515	0	14	1.00	1.00	1.00
CV:	0.00	0.80	0.00	0.20			
Min:	36,265	633	1	49.9	-1.14	-0.71	-1.41
Max:	36,412	14,800	1	80	1.43	1.41	0.75
Median:	36,356	3,700	1	79	-0.58	-0.71	0.67

dPb	SR55		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.999)		update r2	1.00	0.999		r2:	0.592	0.765
r2 Q,[COC]:	1.00	[dPb]	Q			m:	-90.1456	-0.02002
slope, m:	0.0	1	633.0			b:	3282955	736.04
intercept, b:	1.0	1	6896.1					
N: 3		1	14800					
LnConc. = mLn{Q}+b (r2=0.999)		update r2		1.00	0.999			
r2 lnQ,ln[COC]:	1.00	ln[dPb]	ln Q	[dPb]	Q			
slope, m:	-0.02	0.07	6.45	1	633			
intercept, b:	0.21	0.03	8.84	1	6,896			
N: 3		0.01	9.60	1	14,800			

N= 7

	Sampling Date	Q Discharge	dPb Concentration	dPb Load	Ln Q	Ln dPb Conc.	Ln dPb Load	dPb SR55 Standardized Values = (x - Avg)/SD		for graph 0
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	15-Apr-99	9100	1.02	49.9	9.12	0.02	3.91	0.40	1.41	-1.41
USGS	13-May-99	14600	1.01	79.3	9.59	0.01	4.37	1.40	-0.71	0.67
USGS	17-Jun-99	14800	1.01	80.4	9.60	0.01	4.39	1.43	-0.71	0.75
USGS	*15-Jul-99*	*3700*			8.22			-0.58		
USGS	*15-Jul-99*	*3700*			8.22			-0.58		
USGS	*11-Aug-99*	*1740*			7.46			-0.93		
USGS	*9-Sep-99*	*633*			6.45			-1.14		

dPb

Concentration over time analysis

				r2	Slope, m
	dPb	**SR55**		**Concentration over time**	
	LnConc.=mTime+b All data r2, m:			**0.693**	**-0.00015**
	Time	**Ln[COC]**	**[COC]**		
first:	15-Apr-99	0.02	1		
mid:	15-Jul-99	0.00	1		
last:	9-Sep-99	0.00	1		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

Load over time analysis

	dPb	**SR55**		**Load over time**	
	LnLoad=mTime+b All data r2, m:			**0.716**	**0.00727**
	Time	**LnLoad**	**Load**		
first:	15-Apr-99	4.00	55		
mid:	15-Jul-99	4.66	106		
last:	9-Sep-99	5.07	159		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

	max r2:	#DIV/0!		max r2:	#DIV/0!	
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.693	-0.00015	5.46	0.716	0.00727	-259.62
	#DIV/0!	0.00000	0.01	1.000	0.00039	-9.73
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

dPb		**SR55**		
LN Analysis		**dPb**		
Load		**Load Data, EV=69 lbs/day CV=0.206**		
Avg:	**69**	**Load Data-based LN**		
SD:	**14**	u	ln dPb Load	dPb Load
CV:	**0.21**	3	4.8	125
Min:	**49.0**	0	4.21	68
Max:	**80**	-3	3.60	36.7
Median:	**79**			
		69	69	
		0.21	0.206	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.669, EV=48.6lbs/day CV=0.746; max r2=0**

r2 u,lnLoad:	0.669	u	lnLoad	Load			
slope, m:	1.503	3	5.66	286			
intercept, b:	-5.505	0	3.66	39			
N:	3	-3	1.67	5.3			
E[Load]:	48.6	Parameter Estimates			0.669	0.669	
SD[Load]:	36	from LN regression			48.6	48.6	
CV[Load]:	0.75	update graph label			0.7	0.746	
					max r2		
	dPb	N: 7			0.000		
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**	
Date	**lbs/day Ranked**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**	
update and rank for new data							
9-Sep-99		1	0.0862	-1.364			
11-Aug-99		2	0.2241	-0.758			
15-Jul-99		3	0.3621	-0.353			
15-Jul-99		4	0.5000	0.000			
15-Apr-99	49.0	5	0.6379	0.353	3.891		
13-May-99	78.5	6	0.7759	0.758	4.364		
17-Jun-99	79.6	7	0.9138	1.364	4.377		

		update for EV, CV:			
dPb		SR55		1	1.01
LN Analysis		dPb		0.00	0.00465
Concentration		Conc. Data, EV=1.01 ug/L CV=0.00465			
Avg:	1	Data-based LN			
SD:	0	u	ln[dPb]	[dPb]	
CV:	0.00	3	0.0	1	
Min:	1	0	0.01	1	
Max:	1	-3	0.00	1	
Median:	1				

					0.646	0.646
u=mLn(Conc.)+b:					1.0	1.03
update for r2, EV, CV:	r2=0.646, EV=1.03 ug/L CV=0.0139; max r2=0				0.014	0.0139
	r2 u,lnConc:	0.646	u	lnConc.	Conc.	
	slope, m:	-71.908	3	-0.02	1	
	intercept, b:	1.777	0	0.02	1	
	N: 3		-3	0.07	1	
	E[Conc]:	1.0	Parameter Estimates			
	SD[Conc]:	0	from LN regression			
	CV[Conc]:	0.01	update graph label			

	dPb	N: 7				max r2 0.000
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
15-Jul-99		1	0.0862	-1.364		
15-Jul-99		2	0.2241	-0.758		
11-Aug-99		3	0.3621	-0.353		
9-Sep-99		4	0.5000	0.000		
15-Apr-99	1.02	5	0.6379	0.353	0.020	
13-May-99	1.01	6	0.7759	0.758	0.010	
17-Jun-99	1.01	7	0.9138	1.364	0.010	

		update for EV, CV:				
dPb		**SR55**			6,896	6900
LN Analysis		**dPb**			0.80	0.8
Discharge, Q		**Q Data, EV=6900 cfs CV=0.8**				
Avg:	6,896	**Q Data-based LN**				
SD:	5,515	u	lnQ	Q		
CV:	0.80	3	10.7	44401		
Min:	633	0	8.59	5386		
Max:	14,800	-3	6.48	653		
Median:	3,700					
					0.934	0.934
					10170.4	10200
	u=mLn(Q)+b:				2.11	2.11

update for r2, EV, CV: **r2=0.934, EV=10200 cfs CV=2.11; max r2=0.93**

r2 u,lnQ:	0.934	u	lnQ	Q	
slope, m:	0.768	3	12.29	216802	
intercept, b:	-6.432	0	8.38	4354	
N: 7		-3	4.47	87	
E[Q]:	10170.4	Parameter Estimates			
SD[Q]:	21471	from LN regression			
CV[Q]:	2.11	update graph label			

	Q	N: 7				max r2 0.934
	Discharge	i	i-3/8 / N+1/4	u	Ln	r2
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
9-Sep-99	*633*	1	0.0862	-1.364	6.450	0.934
11-Aug-99	*1740*	2	0.2241	-0.758	7.462	0.896
15-Jul-99	*3700*	3	0.3621	-0.353	8.216	0.832
15-Jul-99	*3700*	4	0.5000	0.000	8.216	
15-Apr-99	9100	5	0.6379	0.353	9.116	
13-May-99	14600	6	0.7759	0.758	9.589	
17-Jun-99	14800	7	0.9138	1.364	9.602	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SR55 **Date:** 14-Jul-00
Chemical: dZn **Analyst:** T.Johnston
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,342	6,896	49	2,239	0.00	0.00	0.00
SD:	47	5,515	21	2,078	1.00	1.00	1.00
CV:	0.00	0.80	0.43	0.93			
Min:	36,265	633	24	81.7	-1.14	-1.18	-1.04
Max:	36,412	14,800	90	5,420	1.43	1.93	1.53
Median:	36,356	3,700	39	776	-0.58	-0.47	-0.70

dZn	**SR55**		**: Concentration v. Discharge, Q**			**Q = mTime +b**		**LnQ = mTime +b**
Conc. = mQ+b (r2=0.445)		update r2	0.45	0.445		r2:	0.592	0.765
r2 Q,[COC]:	0.45		[dZn]	Q		m:	-90.1456	-0.02002
slope, m:	0.0		33	633.0		b:	3282955	736.04
intercept, b:	31.3		49	6896.1				
N: 7			69	14800				
LnConc. = mLn(Q)+b (r2=0.733)			update r2	0.73	0.733			
r2 lnQ,ln[COC]:	0.73		ln[dZn]	ln Q	[dZn]	Q		
slope, m:	0.33		3.17	6.45	24	633		
intercept, b:	1.04		3.96	8.84	52	6,896		
N: 7			4.21	9.60	67	14,800		

N= 7

	Sampling Date	Q Discharge	dZn Concentration	dZn Load	Ln Q	Ln dZn Conc.	Ln dZn Load	dZn SR55 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	15-Apr-99	9100	90	4406.2	9.12	4.50	8.39	0.40	1.93	1.04
USGS	13-May-99	14600	69	5419.8	9.59	4.23	8.60	1.40	0.94	1.53
USGS	17-Jun-99	14800	49	3901.6	9.60	3.89	8.27	1.43	0.00	0.80
USGS	15-Jul-99	3700	39	776.3	8.22	3.66	6.65	-0.58	-0.47	-0.70
USGS	15-Jul-99	3700	39	776.3	8.22	3.66	6.65	-0.58	-0.47	-0.70
USGS	11-Aug-99	1740	33	308.9	7.46	3.50	5.73	-0.93	-0.75	-0.93
USGS	9-Sep-99	633	24	81.7	6.45	3.18	4.40	-1.14	-1.18	-1.04

dZn

Concentration over time analysis

				r2	Slope, m
	dZn	*SR55*		**Concentration over time**	
	LnConc.=mTime+b All data r2, m:			**0.996**	**-0.00879**
	Time	**Ln[COC]**	**[COC]**		
first:	15-Apr-99	4.48	88		
mid:	15-Jul-99	3.68	40		
last:	9-Sep-99	3.19	24		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

Load over time analysis

	dZn	**SR55**		**Load over time**	
	LnLoad=mTime+b All data r2, m:			**0.877**	**-0.02881**
	Time	**LnLoad**	**Load**		
first:	15-Apr-99	9.17	9,625		
mid:	15-Jul-99	6.55	699		
last:	9-Sep-99	4.94	139		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

	max r2:	0.996		max r2:	0.994
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**	
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.996	-0.00879	323.26	0.877	-0.02881	1054.07
	0.993	-0.00858	315.56	0.957	-0.03695	1350.11
	0.988	-0.00826	304.14	0.986	-0.04427	1616.17
	0.979	-0.00847	311.77	0.994	-0.03972	1450.77
	0.975	-0.00870	319.92	0.993	-0.04027	1470.71

update for EV, CV:

dZn		**SR55**		
LN Analysis		**dZn**		
Load		**Load Data, EV=2240 lbs/day CV=0.928**		
Avg:	**2,239**	**Load Data-based LN**		
SD:	**2,078**	**u**	**ln dZn Load**	**dZn Load**
CV:	**0.93**	3	9.8	17467
Min:	**81.7**	0	7.40	1641
Max:	**5,420**	-3	5.04	154.1
Median:	**776**			
		2,239	2240	
		0.93	0.928	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.918, EV=5000lbs/day CV=4.65; max r2=0.99**

	r2 u,lnLoad:	0.918	**u**	**lnLoad**	**Load**		
	slope, m:	0.566	3	12.26	210064		
	intercept, b:	-3.940	0	6.96	1051		
	N: 7		-3	1.66	5.3		
	E[Load]:	4997.7	Parameter Estimates			0.918	0.918
	SD[Load]:	23230	from LN regression			4997.7	5000
	CV[Load]:	4.65	update graph label			4.6	4.65
						max r2	
	dZn		**N: 7**			0.999	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**	
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**	
	Ranked						
update and rank for new data							
9-Sep-99	**81.7**	1	0.0862	-1.364	4.403	0.918	
11-Aug-99	**308.9**	2	0.2241	-0.758	5.733	0.864	
15-Jul-99	**776.3**	3	0.3621	-0.353	6.655	0.775	
15-Jul-99	**776.3**	4	0.5000	0.000	6.655	0.647	
17-Jun-99	**3901.6**	5	0.6379	0.353	8.269	0.999	
15-Apr-99	**4406.2**	6	0.7759	0.758	8.391		
13-May-99	**5419.8**	7	0.9138	1.364	8.598		

		update for EV, CV:			
dZn		SR55		49	49
LN Analysis		dZn		0.43	0.434
Concentration		Conc. Data, EV=49 ug/L CV=0.434			
Avg:	49	Data-based LN			
SD:	21	u	ln[dZn]	[dZn]	
CV:	0.43	3	5.1	156	
Min:	24	0	3.81	45	
Max:	90	-3	2.56	13	
Median:	39				

					0.969	0.969
u=mLn[Conc.]+b:					50.7	50.7
update for r2, EV, CV:	r2=0.969, EV=50.7 ug/L CV=0.524; max r2=0.98				0.524	0.524
	r2 u,lnConc:	0.969	u	lnConc.	Conc.	
	slope, m:	2.032	3	5.28	196	
	intercept, b:	-7.728	0	3.80	45	
	N: 7		-3	2.33	10	
	E[Conc]:	50.7	Parameter Estimates			
	SD[Conc]:	27	from LN regression			
	CV[Conc]:	0.52	update graph label			

	dZn	N: 7				max r2 0.981
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
9-Sep-99	24	1	0.0862	-1.364	3.178	0.969
11-Aug-99	33	2	0.2241	-0.758	3.497	0.952
15-Jul-99	39	3	0.3621	-0.353	3.664	0.952
15-Jul-99	39	4	0.5000	0.000	3.664	0.981
17-Jun-99	49	5	0.6379	0.353	3.892	0.966
13-May-99	69	6	0.7759	0.758	4.234	
15-Apr-99	90	7	0.9138	1.364	4.500	

update for EV, CV:

dZn		SR55			6,896	6900
LN Analysis		dZn			0.80	0.8
Discharge, Q		Q Data, EV=6900 cfs CV=0.8				
Avg:	6,896	Q Data-based LN				
SD:	5,515	u	lnQ	Q		
CV:	0.80	3	10.7	44401		
Min:	633	0	8.59	5386		
Max:	14,800	-3	6.48	653		
Median:	3,700					
					0.934	0.934
					10170.4	10200
	u=mLn(Q)+b:				2.11	2.11

update for r2, EV, CV: **r2=0.934, EV=10200 cfs CV=2.11; max r2=0.93**

r2 u,lnQ:	0.934	u	lnQ	Q
slope, m:	0.768	3	12.29	216802
intercept, b:	-6.432	0	8.38	4354
N: 7		-3	4.47	87
E[Q]:	10170.4	Parameter Estimates		
SD[Q]:	21471	from LN regression		
CV[Q]:	2.11	update graph label		

N: 7

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.934 r2 forward
update and rank for new data						
9-Sep-99	633	1	0.0862	-1.364	6.450	0.934
11-Aug-99	1740	2	0.2241	-0.758	7.462	0.896
15-Jul-99	3700	3	0.3621	-0.353	8.216	0.832
15-Jul-99	3700	4	0.5000	0.000	8.216	0.744
15-Apr-99	9100	5	0.6379	0.353	9.116	0.669
13-May-99	14600	6	0.7759	0.758	9.589	
17-Jun-99	14800	7	0.9138	1.364	9.602	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SR55 **Date:** 21-7-00
Chemical: tCd **Analyst:** L.Raschke
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load					
Avg:	36,265	9,100	#DIV/0!	#DIV/0!			#DIV/0!	#DIV/0!	#DIV/0!
SD:	0	0	#DIV/0!	#DIV/0!			#DIV/0!	#DIV/0!	#DIV/0!
CV:	0.00	0.00	#DIV/0!	#DIV/0!					
Min:	36,265	9,100	0	0.0			#DIV/0!	0.00	0.00
Max:	36,265	9,100	0	0			#DIV/0!	0.00	0.00
Median:	36,265	9,100	#NUM!	#NUM!			#DIV/0!	#NUM!	#NUM!

tCd	SR55		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b	
#DIV/0!		update r2	#DIV/0!	#DIV/0!		r2:	#DIV/0!	#DIV/0!	
r2 Q,[COC]:	#DIV/0!	[tCd]	Q			m:	#DIV/0!	#DIV/0!	
slope, m:	#DIV/0!	#DIV/0!	9100.0			b:	#DIV/0!	#DIV/0!	
intercept, b:	#DIV/0!	#DIV/0!	9100.0						
N: 0		#DIV/0!	9100						
#DIV/0!			update r2	#DIV/0!	#DIV/0!				
r2 lnQ,ln[COC]:	#DIV/0!	ln[tCd]	ln Q	[tCd]	Q				
slope, m:	#DIV/0!	#DIV/0!	9.12	#DIV/0!	9,100				
intercept, b:	#DIV/0!	#DIV/0!	9.12	#DIV/0!	9,100				
N: 0		#DIV/0!	9.12	#DIV/0!	9,100				for graph
								tCd	0
N= 1								SR55	

	Sampling Date	Q Discharge	tCd Concentration	tCd Load	Ln Q	Ln tCd Conc.	Ln tCd Load	Standardized Values = (x - Avg)/SD		
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	*15-Apr-99*	*9100*			9.12			#DIV/0!		

tCd

Concentration over time analysis

	tCd	SR55	
	LnConc.=mTime+b All data r2, m:		
	Time	**Ln[COC]**	**[COC]**
first:	15-Apr-99	#DIV/0!	#DIV/0!
mid:	15-Apr-99	#DIV/0!	#DIV/0!
last:	15-Apr-99	#DIV/0!	#DIV/0!
	LnConc.=mTime+b >'96 r2, m:		
	0-Jan-00	0.00	1
	15-Apr-99	0.00	1

Load over time analysis

	tCd	SR55	
	LnLoad=mTime+b All data r2, m:		
	Time	**LnLoad**	**Load**
first:	15-Apr-99	#DIV/0!	#DIV/0!
mid:	15-Apr-99	#DIV/0!	#DIV/0!
last:	15-Apr-99	#DIV/0!	#DIV/0!
	LnLoad=mTime+b >'96 r2, m:		
	0-Jan-00	0.00	1
	15-Apr-99	0.00	1

	r2	Slope, m
Concentration over time		
	#DIV/0!	#DIV/0!
	0.000	**0.00000**
Load over time		
	#DIV/0!	#DIV/0!
	0.000	**0.00000**

max r2: #DIV/0!

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
#DIV/0!	#DIV/0!	#DIV/0!

max r2: #DIV/0!

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
#DIV/0!	#DIV/0!	#DIV/0!

		update for EV, CV:					
tCd		SR55					
LN Analysis		tCd					
Load		######					
Avg:	#DIV/0!	Load Data-based LN					
SD:	#DIV/0!	u	ln tCd Load	tCd Load			
CV:	#DIV/0!	3	#DIV/0!	#DIV/0!			
Min:	0.0	0	#DIV/0!	#DIV/0!			
Max:	0	-3	#DIV/0!	#DIV/0!			
Median:	#NUM!						
		######	#DIV/0!				
		######	#DIV/0!				

u=mLn{Load}+ b:

update for r2, EV, CV:	#DIV/0!						
r2 u,lnLoad:	######	u	lnLoad	Load			
slope, m:	######	3	#DIV/0!	#DIV/0!			
intercept, b:	######	0	#DIV/0!	#DIV/0!			
N:	0	-3	#DIV/0!	#DIV/0!			
E[Load]:	###### Parameter Estimates					#DIV/0!	#DIV/0!
SD[Load]:	###### from LN regression					#DIV/0!	#DIV/0!
CV[Load]:	###### update graph label					#DIV/0!	#DIV/0!
						max r2	
	tCd	N: 1				0.000	
	Load	i	i-3/8 / N+1/4	u	Ln	r2	
Date	lbs/day	rank	plotting points	y-axis	x-axis	forward	
	Ranked						
update and rank for new data							
15-Apr-99		1	0.5000	0.000			

update for EV, CV:

tCd		SR55		#DIV/0!	#DIV/0!
LN Analysis		tCd		#DIV/0!	#DIV/0!
Concentration		#DIV/0!			
Avg:	#DIV/0!	Data-based LN			
SD:	#DIV/0!	u	ln[tCd]	[tCd]	
CV:	#DIV/0!	3	#DIV/0!	#DIV/0!	
Min:	0	0	#DIV/0!	#DIV/0!	
Max:	0	-3	#DIV/0!	#DIV/0!	
Median:	#NUM!				

	u=mLn(Conc.)+b:				#DIV/0!	#DIV/0!
					#DIV/0!	#DIV/0!
update for r2, EV, CV:	#DIV/0!				#DIV/0!	#DIV/0!
	r2 u,lnConc:	#DIV/0!	u	lnConc.	Conc.	
	slope, m:	#DIV/0!	3	#DIV/0!	#DIV/0!	
	intercept, b:	#DIV/0!	0	#DIV/0!	#DIV/0!	
	N:	0	-3	#DIV/0!	#DIV/0!	
	E[Conc]:	#DIV/0!	Parameter Estimates			
	SD[Conc]:	#DIV/0!	from LN regression			
	CV[Conc]:	#DIV/0!	update graph label			

						max r2
	tCd	N: 1				0.000
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
15-Apr-99		1	0.5000	0.000		

update for EV, CV:

tCd		SR55			9,100	9100
LN Analysis		tCd			0.00	0
Discharge, Q		Q Data, EV=9100 cfs CV=0				
Avg:	9,100	Q Data-based LN				
SD:	0	u	lnQ	Q		
CV:	0.00	3	9.1	9100		
Min:	9,100	0	9.12	9100		
Max:	9,100	-3	9.12	9100		
Median:	9,100					
					#DIV/0!	#DIV/0!
					#DIV/0!	#DIV/0!
	u=mLn(Q)+b:				#DIV/0!	#DIV/0!

update for r2, EV, CV: #DIV/0!

r2 u,lnQ:	######	u	lnQ	Q
slope, m:	######	3	#DIV/0!	#DIV/0!
intercept, b:	######	0	#DIV/0!	#DIV/0!
N:	1	-3	#DIV/0!	#DIV/0!
B[Q]:	######	Parameter Estimates		
SD[Q]:	######	from LN regression		
CV[Q]:	######	update graph label		

N: 1

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 #DIV/0! r2 forward
update and rank for new data						
15-Apr-99	*9100*	1	0.5000	0.000	9.116	#DIV/0!

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SR55 **Date:** 14-Jul-00
Chemical: tPb **Analyst:** J.Johnston
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,342	6,896	2	109	0.00	0.00	0.00
SD:	47	5,515	1	117	1.00	1.00	1.00
CV:	0.00	0.80	0.53	1.07			
Min:	36,265	633	1	3.7	-1.14	-0.90	-0.90
Max:	36,412	14,800	4	314	1.43	1.71	1.76
Median:	36,356	3,700	1	24	-0.58	-0.81	-0.73

tPb SR55 : Concentration v. Discharge, Q Q = mTime +b LnQ = mTime +b

Conc. = mQ+b (r2=0.885)		update r2	0.88	0.885	r2:	0.592	0.765
r2 Q,[COC]:	0.88	[tPb]	Q		m:	-90.1456	-0.02002
slope, m:	0.0	1	633.0		b:	3282955	736.04
intercept, b:	0.8	2	6896.1				
N: 7		4	14800				
LnConc. = mLn(Q)+b (r2=0.762)		update r2	0.76	0.762			
r2 lnQ,ln[COC]:	0.76	ln[tPb]	ln Q	[tPb]	Q		
slope, m:	0.42	-0.21	6.45	1	633		
intercept, b:	-2.93	0.80	8.84	2	6,896		
N: 7		1.12	9.60	3	14,800		

N= 7

	Sampling Date	Q Discharge	tPb Concentration	tPb Load	Ln Q	Ln tPb Conc.	Ln tPb Load	tPb SR55 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	15-Apr-99	9100	3	146.9	9.12	1.10	4.99	0.40	0.81	0.32
USGS	13-May-99	14600	4	314.2	9.59	1.39	5.75	1.40	1.71	1.76
USGS	17-Jun-99	14800	3	238.9	9.60	1.10	5.48	1.43	0.81	1.11
USGS	15-Jul-99	3700	1.2	23.9	8.22	0.18	3.17	-0.58	-0.81	-0.73
USGS	15-Jul-99	3700	1.2	23.9	8.22	0.18	3.17	-0.58	-0.81	-0.73
USGS	11-Aug-99	1740	1.2	11.2	7.46	0.18	2.42	-0.93	-0.81	-0.84
USGS	9-Sep-99	633	1.1	3.7	6.45	0.10	1.32	-1.14	-0.90	-0.90

for graph 0

tPb

Concentration over time analysis

				r2	Slope, m
	tPb	**SR55**		**Concentration over time**	
	LnConc.=mTime+b All data r2, m:			**0.747**	**-0.00955**
	Time	**Ln[COC]**	**[COC]**		
first:	15-Apr-99	1.34	4		
mid:	15-Jul-99	0.47	2		
last:	9-Sep-99	-0.07	1		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

Load over time analysis

	tPb	**SR55**		**Load over time**	
	LnLoad=mTime+b All data r2, m:			**0.804**	**-0.02957**
	Time	**LnLoad**	**Load**		
first:	15-Apr-99	6.03	416		
mid:	15-Jul-99	3.34	28		
last:	9-Sep-99	1.68	5		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

max r2: 0.777

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.747	-0.00955	347.74
0.777	-0.01204	438.38
0.548	-0.00980	356.92
0.773	-0.00143	52.23
0.768	-0.00157	57.33

max r2: 0.994

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.804	-0.02957	1078.56
0.932	-0.04042	1472.93
0.914	-0.04581	1668.95
0.994	-0.03268	1191.24
0.993	-0.03314	1208.12

update for EV, CV:

tPb		**SR55**		
LN Analysis		**tPb**		
Load		**Load Data, EV=109 lbs/day CV=1.07**		
Avg:	**109**	**Load Data-based LN**		
SD:	**117**	**u**	**ln tPb Load**	**tPb Load**
CV:	**1.07**	3	6.9	1025
Min:	**3.7**	0	4.31	74
Max:	**314**	-3	1.68	5.4
Median:	**24**			
		109	109	
		1.07	1.07	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.939, EV=247lbs/day CV=5.68; max r2=0.94**

r2 u,lnLoad:	0.939	**u**	**lnLoad**	**Load**	
slope, m:	0.534	3	9.37	11771	
intercept, b:	-2.007	0	3.76	43	
N:	7	-3	-1.86	0.2	
E[Load]:	247.1	Parameter Estimates			0.939 0.939
SD[Load]:	1403	from LN regression			247.1 247
CV[Load]:	5.68	update graph label			5.7 5.68
					max r2
	tPb	N: 7			0.939
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
9-Sep-99	**3.7**	1	0.0862	-1.364	1.321	0.939
11-Aug-99	**11.2**	2	0.2241	-0.758	2.419	0.896
15-Jul-99	**23.9**	3	0.3621	-0.353	3.173	0.836
15-Jul-99	**23.9**	4	0.5000	0.000	3.173	0.745
15-Apr-99	**146.9**	5	0.6379	0.353	4.990	0.927
17-Jun-99	**238.9**	6	0.7759	0.758	5.476	
13-May-99	**314.2**	7	0.9138	1.364	5.750	

		update for EV, CV:			
tPb		SR55		2	2.1
LN Analysis		tPb		0.53	0.53
Concentration		Conc. Data, EV=2.1 ug/L CV=0.53			
Avg:	2	Data-based LN			
SD:	1	u	ln[tPb]	[tPb]	
CV:	0.53	3	2.1	8	
Min:	1	0	0.62	2	
Max:	4	-3	-0.87	0	
Median:	1				

					0.700	0.7
u=mLn(Conc.)+b:					2.4	2.38
update for r2, EV, CV:	r2=0.7, EV=2.38 ug/L CV=0.834; max r2=0.84				0.834	0.834
	r2 u,lnConc:	0.700	u	lnConc.	Conc.	
	slope, m:	-1.376	3	-1.58	0	
	intercept, b:	0.831	0	0.60	2	
	N: 7		-3	2.78	16	
	E[Conc]:	2.4	Parameter Estimates			
	SD[Conc]:	2	from LN regression			
	CV[Conc]:	0.83	update graph label			

	tPb	N: 7				max r2 0.841
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
15-Apr-99	3	1	0.0862	-1.364	1.099	0.700
13-May-99	4	2	0.2241	-0.758	1.386	0.696
17-Jun-99	3	3	0.3621	-0.353	1.099	0.498
15-Jul-99	1.2	4	0.5000	0.000	0.182	0.720
15-Jul-99	1.2	5	0.6379	0.353	0.182	0.841
11-Aug-99	1.2	6	0.7759	0.758	0.182	
9-Sep-99	1.1	7	0.9138	1.364	0.095	

update for EV, CV:

tPb		**SR55**			6,896	6900
LN Analysis		**tPb**			0.80	0.8
Discharge, Q		**Q Data, EV=6900 cfs CV=0.8**				
Avg:	**6,896**	**Q Data-based LN**				
SD:	**5,515**	**u**	**lnQ**	**Q**		
CV:	**0.80**	3	10.7	44401		
Min:	**633**	0	8.59	5386		
Max:	**14,800**	-3	6.48	653		
Median:	**3,700**					

	0.934	0.934
	10170.4	10200
u=mLn{Q}+b:	2.11	2.11

update for r2, EV, CV: **r2=0.934, EV=10200 cfs CV=2.11; max r2=0.93**

r2 u,lnQ:	0.934	**u**	**lnQ**	**Q**
slope, m:	0.768	3	12.29	216802
intercept, b:	-6.432	0	8.38	4354
N: 7		-3	4.47	87
E[Q]:	10170.4	Parameter Estimates		
SD[Q]:	21471	from LN regression		
CV[Q]:	2.11	update graph label		

N: 7

Date	**Q Discharge cfs Ranked**	**i rank**	**i-3/8 / N+1/4 plotting points**	**u y-axis**	**Ln x-axis**	max r2 0.934 **r2 forward**
update and rank for new data						
9-Sep-99	633	1	0.0862	-1.364	6.450	0.934
11-Aug-99	1740	2	0.2241	-0.758	7.462	0.896
15-Jul-99	3700	3	0.3621	-0.353	8.216	0.832
15-Jul-99	3700	4	0.5000	0.000	8.216	0.744
15-Apr-99	9100	5	0.6379	0.353	9.116	0.669
13-May-99	14600	6	0.7759	0.758	9.589	
17-Jun-99	14800	7	0.9138	1.364	9.602	

Secondary Scale For LN graphs

n	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SR55 **Date:** 14-Jul-00

Chemical: tZn **Analyst:** J. Johnston

Notes:

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,355	6,529	44	1,919		0.00	0.00	0.00
SD:	38	5,877	13	2,056		1.00	1.00	1.00
CV:	0.00	0.90	0.30	1.07				
Min:	36,293	633	28	96.7		-1.00	-1.22	-0.89
Max:	36,412	14,800	70	5,498		1.41	1.96	1.74
Median:	36,356	3,700	40	792		-0.48	-0.35	-0.55

tZn	SR55		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.768)		update r2	0.77	0.768	r2:	0.807	0.926
r2 Q,[COC]:	0.77	[tZn]	Q		m:	-139.3627	-0.02837
slope, m:	0.0	33	633.0		b:	5073014	1039.77
intercept, b:	31.6	44	6528.8				
N: 6		60	14800				
LnConc. = mLn{Q}+b (r2=0.848)			update r2	0.85	0.848		
r2 lnQ,ln[COC]:	0.85	ln[tZn]	ln Q	[tZn]	Q		
slope, m:	0.23	3.34	6.45	28	633		
intercept, b:	1.87	3.87	8.78	48	6,529		
N: 6		4.06	9.60	58	14,800		

N= 6

	Sampling Date	Q Discharge	tZn Concentration	tZn Load	Ln Q	Ln tZn Conc.	Ln tZn Load	tZn SR55 Standardized Values = (x - Avg)/SD		for graph 0
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	13-May-99	14600	70	5498.4	9.59	4.25	8.61	1.37	1.96	1.74
USGS	17-Jun-99	14800	50	3981.2	9.60	3.91	8.29	1.41	0.43	1.00
USGS	15-Jul-99	3700	39.8	792.3	8.22	3.68	6.67	-0.48	-0.35	-0.55
USGS	15-Jul-99	3700	39.8	792.3	8.22	3.68	6.67	-0.48	-0.35	-0.55
USGS	11-Aug-99	1740	37.9	354.8	7.46	3.63	5.87	-0.81	-0.49	-0.76
USGS	9-Sep-99	633	28.4	96.7	6.45	3.35	4.57	-1.00	-1.22	-0.89

tZn

Concentration over time analysis

	tZn	SR55		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.960**	**-0.00716**
	Time	**Ln[COC]**	**[COC]**		
first:	13-May-99	4.19	66		
mid:	15-Jul-99	3.74	42		
last:	9-Sep-99	3.34	28		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

Load over time analysis

	tZn	SR55		
				Load over time
	LnLoad=mTime+b All data r2, m:			**0.957** **-0.03553**
	Time	**LnLoad**	**Load**	
first:	13-May-99	8.97	7,893	
mid:	15-Jul-99	6.74	841	
last:	9-Sep-99	4.75	115	
	LnLoad=mTime+b >'96 r2, m:			**0.000** **0.00000**
	0-Jan-00	0.00	1	
	9-Sep-99	0.00	1	

	max r2: 1.000			max r2: 1.000		
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.960	-0.00716	264.09	0.957	-0.03553	1298.64
	0.936	-0.00615	227.28	0.979	-0.04215	1539.30
	0.880	-0.00569	210.73	0.989	-0.03694	1349.74
	0.870	-0.00607	224.58	0.987	-0.03764	1375.36
	1.000	-0.00995	365.66	1.000	-0.04482	1636.50

update for EV, CV:

tZn		**SR55**		
LN Analysis		**tZn**		
Load		**Load Data, EV=1920 lbs/day CV=1.07**		
Avg:	**1,919**	**Load Data-based LN**		
SD:	**2,056**	**u**	**ln tZn Load**	**tZn Load**
CV:	**1.07**	3	9.8	18043
Min:	**96.7**	0	7.18	1310
Max:	**5,498**	-3	4.55	95.0
Median:	**792**			
		1,919	1920	
		1.07	1.07	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.952, EV=3660lbs/day CV=4.03; max r2=1.0**

r2 u,lnLoad:	0.952	u	lnLoad	Load		
slope, m:	0.593	3	11.84	139123		
intercept, b:	-4.021	0	6.78	882		
N:	6	-3	1.72	5.6		
E[Load]:	3660.1	Parameter Estimates			0.952	0.952
SD[Load]:	14737	from LN regression			3660.1	3660
CV[Load]:	4.03	update graph label			4.0	4.03
					max r2	

	tZn	N: 6				1.000
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
9-Sep-99	**96.7**	1	0.1000	-1.282	4.572	0.952
11-Aug-99	**354.8**	2	0.2600	-0.643	5.872	0.910
15-Jul-99	**792.3**	3	0.4200	-0.202	6.675	0.846
15-Jul-99	**792.3**	4	0.5800	0.202	6.675	0.793
17-Jun-99	**3981.2**	5	0.7400	0.643	8.289	1.000
13-May-99	**5498.4**	6	0.9000	1.282	8.612	

update for EV, CV:

tZn		SR55		44	44.3
LN Analysis		tZn		0.30	0.295
Concentration		Conc. Data, EV=44.3 ug/L CV=0.295			
Avg:	44	Data-based LN			
SD:	13	u	ln[tZn]	[tZn]	
CV:	0.30	3	4.6	101	
Min:	28	0	3.75	43	
Max:	70	-3	2.88	18	
Median:	40				

					0.924	0.924
u=mLn{Conc.}+b:					45.2	45.2
update for r2, EV, CV:	r2=0.924, EV=45.2 ug/L CV=0.355; max r2=1.0				0.355	0.355
	r2 u,lnConc:	0.924	u	lnConc.	Conc.	
	slope, m:	2.903	3	4.78	120	
	intercept, b:	-10.891	0	3.75	43	
	N:	6	-3	2.72	15	
	E[Conc]:	45.2	Parameter Estimates			
	SD[Conc]:	16	from LN regression			
	CV[Conc]:	0.35	update graph label			

	tZn	N: 6				max r2 1.000
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
9-Sep-99	28.4	1	0.1000	-1.282	3.346	0.924
11-Aug-99	37.9	2	0.2600	-0.643	3.635	0.866
15-Jul-99	39.8	3	0.4200	-0.202	3.684	0.923
15-Jul-99	39.8	4	0.5800	0.202	3.684	1.000
17-Jun-99	50	5	0.7400	0.643	3.912	1.000
13-May-99	70	6	0.9000	1.282	4.248	

update for EV, CV:

tZn		**SR55**			6,529	6530
LN Analysis		**tZn**			0.90	0.9
Discharge, Q		**Q Data, EV=6530 cfs CV=0.9**				
Avg:	6,529	**Q Data-based LN**				
SD:	5,877	u	lnQ	Q		
CV:	0.90	3	10.8	48945		
Min:	633	0	8.49	4852		
Max:	14,800	-3	6.18	481		
Median:	3,700					
					0.932	0.932
					10029.8	10000
		u=mLn{Q}+b:			2.41	2.41

update for r2, EV, CV: **r2=0.932, EV=10000 cfs CV=2.41; max r2=1.0**

r2 u,lnQ:	0.932	u	lnQ	Q
slope, m:	0.723	3	12.41	244560
intercept, b:	-5.966	0	8.26	3850
N: 6		-3	4.10	61
E[Q]:	10029.8	Parameter Estimates		
SD[Q]:	24125	from LN regression		
CV[Q]:	2.41	update graph label		

N: 6 — max r2 = 1.000

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
9-Sep-99	633	1	0.1000	-1.282	6.450	0.932
11-Aug-99	1740	2	0.2600	-0.643	7.462	0.872
15-Jul-99	3700	3	0.4200	-0.202	8.216	0.770
15-Jul-99	3700	4	0.5800	0.202	8.216	0.663
13-May-99	14600	5	0.7400	0.643	9.589	1.000
17-Jun-99	14800	6	0.9000	1.282	9.602	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR60	Date:	21-Jul-00
Chemical:	dCd	Analyst:	L Raschke
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	36,342	7,081	1	79	0.00	#DIV/0!	0.00
SD:	47	5,527	0	1	1.00	#DIV/0!	1.00
CV:	0.00	0.78	0.00	0.01			
Min:	36,265	444	1	78.0	-1.20	#DIV/0!	-1.00
Max:	36,412	14,800	1	80	1.40	#DIV/0!	1.00
Median:	36,356	4,000	1	79	-0.56	#DIV/0!	0.00

dCd	SR60		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
#DIV/0!		update r2	#DIV/0!	#DIV/0!		r2:	0.646	0.766
r2 Q,[COC]:	#DIV/0!	[dCd]	Q			m:	-94.3889	-0.02181
slope, m:	0.0	1	444.0			b:	3437347	801.06
intercept, b:	1.0	1	7080.6					
N: 2		1	14800					
#DIV/0!			update r2	#DIV/0!	#DIV/0!			
r2 lnQ,ln[COC]:	#DIV/0!	ln[dCd]	ln Q	[dCd]	Q			
slope, m:	0.00	0.00	6.10	1	444			
intercept, b:	0.00	0.00	8.87	1	7,081			
N: 2		0.00	9.60	1	14,800			

N= 7

	Sampling Date	Q Discharge	dCd Concentration	dCd Load	Ln Q	Ln dCd Conc.	Ln dCd Load	for graph 0 dCd SR60 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	*15-Apr-99*	*10000*			9.21			0.53		
USGS	13-May-99	14500	1	78.0	9.58	0.00	4.36	1.34	#DIV/0!	-1.00
USGS	17-Jun-99	14800	1	79.6	9.60	0.00	4.38	1.40	#DIV/0!	1.00
USGS	*15-Jul-99*	*4000*			8.29			-0.56		
USGS	*15-Jul-99*	*4000*			8.29			-0.56		
USGS	*11-Aug-99*	*1820*			7.51			-0.95		
USGS	*9-Sep-99*	*444*			6.10			-1.20		

dCd

Concentration over time analysis

	dCd	SR60		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			#DIV/0!	0.00000
	Time	Ln[COC]	[COC]		
first:	15-Apr-99	0.00	1		
mid:	15-Jul-99	0.00	1		
last:	9-Sep-99	0.00	1		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

Load over time analysis

	dCd	SR60			
				Load over time	
	LnLoad=mTime+b All data r2, m:			1.000	0.00059
	Time	LnLoad	Load		
first:	15-Apr-99	4.34	77		
mid:	15-Jul-99	4.39	81		
last:	9-Sep-99	4.43	84		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

max r2: #DIV/0!

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00
#DIV/0!	#DIV/0!	#DIV/0!

max r2: #DIV/0!

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
1.000	0.00059	-16.88
1.000	0.00059	-16.88
#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

dCd		**SR60**		
LN Analysis		**dCd**		
Load		**Load Data, EV=78.8 lbs/day CV=0.0102**		
Avg:	**79**	**Load Data-based LN**		
SD:	**1**	u	ln dCd Load	dCd Load
CV:	**0.01**	3	4.4	81
Min:	**78.0**	0	4.37	79
Max:	**80**	-3	4.34	76.4
Median:	**79**			
		79	78.8	
		0.01	0.0102	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=1, EV=76.1lbs/day CV=0.0338; max r2=0.99**

r2 u,lnLoad:	1.000	u	lnLoad	Load		
slope, m:	29.602	3	4.43	84		
intercept, b:	-128.211	0	4.33	76		
N: 2		-3	4.23	68.7		
E[Load]:	76.1	Parameter Estimates			1.000	1
SD[Load]:	3	from LN regression			76.1	76.1
CV[Load]:	0.03	update graph label			0.0	0.0338
					max r2	
	dCd	N: 7			0.000	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
9-Sep-99		1	0.0862	-1.364		
11-Aug-99		2	0.2241	-0.758		
15-Jul-99		3	0.3621	-0.353		
15-Jul-99		4	0.5000	0.000		
15-Apr-99		5	0.6379	0.353		
13-May-99	78.0	6	0.7759	0.758	4.357	
17-Jun-99	79.6	7	0.9138	1.364	4.377	

update for EV, CV:

dCd		**SR60**		1	1.02
LN Analysis		**dCd**		0.00	0.00493

Concentration — **Conc. Data, EV=1.02 ug/L CV=0.00493**

Avg:	1	**Data-based LN**		
SD:	0	u	ln[dCd]	[dCd]
CV:	0.00	3	0.0	1
Min:	1	0	0.01	1
Max:	1	-3	0.00	1
Median:	1			

				1.000	1
u=mLn(Conc.)+b:				1.0	0.998
update for r2, EV, CV:	**r2=1, EV=0.998 ug/L CV=0.0163; max r2=0.99**			0.016	0.0163
	r2 u,lnConc:	1.000	u	lnConc.	Conc.
	slope, m:	61.528	3	0.05	1
	intercept, b:	0.146	0	0.00	1
	N: 2		-3	-0.05	1
	E[Conc]:	1.0	Parameter Estimates		
	SD[Conc]:	0	from LN regression		
	CV[Conc]:	0.02	update graph label		

	dCd	N: 7				max r2 0.000
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
15-Apr-99		1	0.0862	-1.364		
15-Jul-99		2	0.2241	-0.758		
15-Jul-99		3	0.3621	-0.353		
11-Aug-99		4	0.5000	0.000		
9-Sep-99		5	0.6379	0.353		
13-May-99	1.01	6	0.7759	0.758	0.010	
17-Jun-99	1.02	7	0.9138	1.364	0.020	

update for EV, CV:

dCd		**SR60**			7,081	7080
LN Analysis		**dCd**			0.78	0.781
Discharge, Q		**Q Data, EV=7080 cfs CV=0.781**				
Avg:	**7,081**	**Q Data-based LN**				
SD:	**5,527**	**u**	**lnQ**	**Q**		
CV:	**0.78**	3	10.7	44207		
Min:	**444**	0	8.63	5581		
Max:	**14,800**	-3	6.56	705		
Median:	**4,000**					

	0.906	0.906
	12164.6	12200
u=mLn(Q)+b:	2.64	2.64

update for r2, EV, CV: **r2=0.906, EV=12200 cfs CV=2.64; max r2=0.98**

r2 u,lnQ:	0.906	u	lnQ	Q
slope, m:	0.694	3	12.69	324382
intercept, b:	-5.812	0	8.37	4313
N: 7		-3	4.05	57
E[Q]:	12164.6	Parameter Estimates		
SD[Q]:	32084	from LN regression		
CV[Q]:	2.64	update graph label		

N: 7

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.906 r2 forward
update and rank for new data						
9-Sep-99	*444*	1	0.0862	-1.364	6.096	0.906
11-Aug-99	*1820*	2	0.2241	-0.758	7.507	0.885
15-Jul-99	*4000*	3	0.3621	-0.353	8.294	0.817
15-Jul-99	*4000*	4	0.5000	0.000	8.294	
15-Apr-99	*10000*	5	0.6379	0.353	9.210	
13-May-99	14500	6	0.7759	0.758	9.582	
17-Jun-99	14800	7	0.9138	1.364	9.602	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

Several values were reported at a concentration of 1 µg/L by the laboratory. Because the log of 1 is zero, use of 1 causes division by zero in the lognormal probabilistic analysis. Therefore, to perform the analyses, these values were changed to 1.01, 1.02, 1.03, etc. These changes are within the data uncertainty and have a minimal impact on estimations of concentrations and no impact on loading calculations.

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR60	Date:	21-7-00
Chemical:	dPb	Analyst:	L.Raschke
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	36,342	7,081	1	30	0.00	#DIV/0!	1.13
SD:	47	5,527	0	36	1.00	#DIV/0!	0.33
CV:	0.00	0.78	0.00	1.18			
Min:	36,265	444	1	0.0	-1.20	#DIV/0!	0.66
Max:	36,412	14,800	1	80	1.40	#DIV/0!	1.38
Median:	36,356	4,000	1	0	-0.56	#DIV/0!	1.34

dPb	SR60		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
#DIV/0!		update r2	#DIV/0!	#DIV/0!		r2:	0.646	0.766
r2 Q,[COC]:	#DIV/0!	[dPb]	Q			m:	-94.3889	-0.02181
slope, m:	0.0	1	444.0			b:	3437347	801.06
intercept, b:	1.0	1	7080.6					
N: 3		1	14800					
#DIV/0!			update r2	#DIV/0!	#DIV/0!			
r2 lnQ,ln[COC]:	#DIV/0!	ln[dPb]	ln Q	[dPb]	Q			
slope, m:	0.00	0.00	6.10	1	444			
intercept, b:	0.00	0.00	8.87	1	7,081			
N: 3		0.00	9.60	1	14,800			

									for graph
								dPb	0
N= 7								SR60	
	Sampling Date	Q Discharge	dPb Concentration	dPb Load	Ln Q	Ln dPb	Ln dPb	Standardized Values = (x - Avg)/SD		
update for new data		cfs	ug/L	lbs/day		Conc.	Load	Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	15-Apr-99	10000	1	53.8	9.21	0.00	3.99	0.53	#DIV/0!	0.66
USGS	13-May-99	14500	1	78.0	9.58	0.00	4.36	1.34	#DIV/0!	1.34
USGS	17-Jun-99	14800	1	79.6	9.60	0.00	4.38	1.40	#DIV/0!	1.38
USGS	*15-Jul-99*	*4000*		0.0	8.29			-0.56		
USGS	*15-Jul-99*	*4000*		0.0	8.29			-0.56		
USGS	*11-Aug-99*	*1820*		0.0	7.51			-0.95		
USGS	*9-Sep-99*	*444*		0.0	6.10			-1.20		

dPb

Concentration over time analysis

				r2	Slope, m
	dPb	**SR60**		**Concentration over time**	
	LnConc.=mTime+b All data r2, m:			#DIV/0!	0.00000
	Time	**Ln[COC]**	**[COC]**		
first:	15-Apr-99	0.00	1		
mid:	15-Jul-99	0.00	1		
last:	9-Sep-99	0.00	1		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

Load over time analysis

	dPb	**SR60**		**Load over time**	
	LnLoad=mTime+b All data r2, m:			0.735	0.00599
	Time	**LnLoad**	**Load**		
first:	15-Apr-99	4.06	58		
mid:	15-Jul-99	4.60	100		
last:	9-Sep-99	4.94	140		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

	max r2:	#DIV/0!		max r2:	#DIV/0!
	Forward time Regression on			**Forward time Regression on**	
	Ln Concentration(t)			**Ln Load(t)**	
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	#DIV/0!	0.00000	0.00	0.735	0.00599	-213.24
	#DIV/0!	0.00000	0.00	1.000	0.00059	-16.88
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

dPb		**SR60**		
LN Analysis		**dPb**		
Load		**Load Data, EV=70.5 lbs/day CV=0.168**		
Avg:	**70**	**Load Data-based LN**		
SD:	**12**	**u**	**ln dPb Load**	**dPb Load**
CV:	**0.17**	3	4.7	115
Min:	**53.8**	0	4.24	70
Max:	**80**	-3	3.74	42.2
Median:	**78**			
		70	70.5	
		0.17	0.168	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.689, EV=51.7lbs/day CV=0.56; max r2=0**

r2 u,lnLoad:	0.689	u	lnLoad	Load		
slope, m:	1.915	3	5.38	216		
intercept, b:	-7.295	0	3.81	45		
N: 3		-3	2.24	9.4		
E[Load]:	51.7	Parameter Estimates			0.689	0.689
SD[Load]:	29	from LN regression			51.7	51.7
CV[Load]:	0.56	update graph label			0.6	0.56
					max r2	
	dPb	**N: 7**			0.000	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
9-Sep-99		1	0.0862	-1.364		
11-Aug-99		2	0.2241	-0.758		
15-Jul-99		3	0.3621	-0.353		
15-Jul-99		4	0.5000	0.000		
15-Apr-99	53.8	5	0.6379	0.353	3.985	
13-May-99	78.0	6	0.7759	0.758	4.357	
17-Jun-99	79.6	7	0.9138	1.364	4.377	

update for EV, CV:

dPb		**SR60**		1	1.02
LN Analysis		**dPb**		0.01	0.008

Concentration — **Conc. Data, EV=1.02 ug/L CV=0.008**

		Data-based LN		
Avg:	**1**			
SD:	**0**	**u**	**ln[dPb]**	**[dPb]**
CV:	**0.01**	3	0.0	1
Min:	**1**	0	0.02	1
Max:	**1**	-3	0.00	1
Median:	**1**			

				0.986	0.986
u=mLn(Conc.)+b:				1.0	1
update for r2, EV, CV:	**r2=0.986, EV=1 ug/L CV=0.0194; max r2=0**			0.019	0.0194
	r2 u,lnConc:	0.986	u	lnConc.	Conc.
	slope, m:	51.570	3	0.06	1
	intercept, b:	-0.194	0	0.00	1
	N: 3		-3	-0.05	1
	E[Conc]:	1.0	Parameter Estimates		
	SD[Conc]:	0	from LN regression		
	CV[Conc]:	0.02	update graph label		

	dPb	N: 7				max r2 0.000
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
15-Jul-99		1	0.0862	-1.364		
15-Jul-99		2	0.2241	-0.758		
11-Aug-99		3	0.3621	-0.353		
9-Sep-99		4	0.5000	0.000		
15-Apr-99	1.01	5	0.6379	0.353	0.010	
13-May-99	1.02	6	0.7759	0.758	0.020	
17-Jun-99	1.03	7	0.9138	1.364	0.030	

update for EV, CV:

dPb		**SR60**			7,081	7080
LN Analysis		**dPb**			0.78	0.781
Discharge, Q		**Q Data, EV=7080 cfs CV=0.781**				
Avg:	**7,081**	**Q Data-based LN**				
SD:	**5,527**	**u**	**lnQ**	**Q**		
CV:	**0.78**	3	10.7	44207		
Min:	**444**	0	8.63	5581		
Max:	**14,800**	-3	6.56	705		
Median:	**4,000**					
					0.906	0.906
					12164.6	12200
	u=mLn{Q}+b:				2.64	2.64

update for r2, EV, CV: **r2=0.906, EV=12200 cfs CV=2.64; max r2=0.91**

r2 u,lnQ:	0.906	u	lnQ	Q
slope, m:	0.694	3	12.69	324382
intercept, b:	-5.812	0	8.37	4313
N: 7		-3	4.05	57
E[Q]:	12164.6	Parameter Estimates		
SD[Q]:	32084	from LN regression		
CV[Q]:	2.64	update graph label		

N: 7

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.906 r2 forward
update and rank for new data						
9-Sep-99	*444*	1	0.0862	-1.364	6.096	0.906
11-Aug-99	*1820*	2	0.2241	-0.758	7.507	0.885
15-Jul-99	*4000*	3	0.3621	-0.353	8.294	0.817
15-Jul-99	*4000*	4	0.5000	0.000	8.294	
15-Apr-99	10000	5	0.6379	0.353	9.210	
13-May-99	14500	6	0.7759	0.758	9.582	
17-Jun-99	14800	7	0.9138	1.364	9.602	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

Several values were reported at a concentration of 1 µg/L by the laboratory. Because the log of 1 is zero, use of 1 causes division by zero in the lognormal probabilistic analysis. Therefore, to perform the analyses, these values were changed to 1.01, 1.02, 1.03, etc. These changes are within the data uncertainty and have a minimal impact on estimations of concentrations and no impact on loading calculations.

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SR60 **Date:** 14-Jul-00
Chemical: dZn **Analyst:** J.Johnston
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,342	7,081	50	2,305	0.00	0.00	0.00
SD:	47	5,527	19	2,124	1.00	1.00	1.00
CV:	0.00	0.78	0.39	0.92			
Min:	36,265	444	29	69.3	-1.20	-1.07	-1.05
Max:	36,412	14,800	86	5,539	1.40	1.87	1.52
Median:	36,356	4,000	38	818	-0.56	-0.60	-0.70

dZn SR60 : Concentration v. Discharge, Q — Q = mTime +b — LnQ = mTime +b

Conc. = mQ+b (r2=0.508)	update r2	0.51	0.508		r2:	0.646	0.766
r2 Q,[COC]:	0.51	[dZn]	Q		m:	-94.3889	-0.02181
slope, m:	0.0	33	444.0		b:	3437347	801.06
intercept, b:	32.0	50	7080.6				
N: 7		69	14800				
LnConc. = mLn(Q)+b (r2=0.651)		update r2	0.65	0.651			
r2 lnQ,ln[COC]:	0.65	ln[dZn]	ln Q	[dZn]	Q		
slope, m:	0.25	3.27	6.10	26	444		
intercept, b:	1.75	3.96	8.87	53	7,081		
N: 7		4.14	9.60	63	14,800		

N= 7

	Sampling Date	Q Discharge	dZn Concentration	dZn Load	Ln Q	Ln dZn Conc.	Ln dZn Load	dZn SR60 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		y-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	15-Apr-99	10000	86	4626.8	9.21	4.45	8.44	0.53	1.87	1.09
USGS	13-May-99	14500	71	5538.7	9.58	4.26	8.62	1.34	1.10	1.52
USGS	17-Jun-99	14800	49	3901.6	9.60	3.89	8.27	1.40	-0.04	0.75
USGS	15-Jul-99	4000	38	817.8	8.29	3.64	6.71	-0.56	-0.60	-0.70
USGS	15-Jul-99	4000	38	817.8	8.29	3.64	6.71	-0.56	-0.60	-0.70
USGS	11-Aug-99	1820	37	362.3	7.51	3.61	5.89	-0.95	-0.66	-0.91
USGS	9-Sep-99	444	29	69.3	6.10	3.37	4.24	-1.20	-1.07	-1.05

for graph 0

dZn

Concentration over time analysis

	dZn	SR60		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.962**	**-0.00754**
	Time	**Ln[COC]**	**[COC]**		
first:	15-Apr-99	4.42	83		
mid:	15-Jul-99	3.73	42		
last:	9-Sep-99	3.31	27		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

Load over time analysis

	dZn	SR60			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.871**	**-0.02935**
	Time	**LnLoad**	**Load**		
first:	15-Apr-99	9.24	10,278		
mid:	15-Jul-99	6.57	711		
last:	9-Sep-99	4.92	137		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

	max r2: 0.962			max r2: 0.984		
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.962	-0.00754	277.93	0.871	-0.02935	1073.77
	0.932	-0.00715	263.83	0.950	-0.03767	1376.18
	0.907	-0.00557	206.01	0.984	-0.04576	1670.48
	0.848	-0.00452	168.14	0.975	-0.04298	1569.50
	0.839	-0.00487	180.75	0.970	-0.04424	1615.24

update for EV, CV:

dZn		**SR60**		
LN Analysis		**dZn**		
Load		**Load Data, EV=2300 lbs/day CV=0.922**		
Avg:	**2,305**	**Load Data-based LN**		
SD:	**2,124**	**u**	**ln dZn Load**	**dZn Load**
CV:	**0.92**	3	9.8	17816
Min:	**69.3**	0	7.44	1695
Max:	**5,539**	-3	5.08	161.2
Median:	**818**			
		2,305	2300	
		0.92	0.922	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.912, EV=5560lbs/day CV=5.06; max r2=0.99**

r2 u,lnLoad:	0.912	**u**	**lnLoad**	**Load**		
slope, m:	0.552	3	12.42	247033		
intercept, b:	-3.853	0	6.98	1077		
N: 7		-3	1.55	4.7		
E[Load]:	5558.7	Parameter Estimates			0.912	0.912
SD[Load]:	28153	from LN regression			5558.7	5560
CV[Load]:	5.06	update graph label			5.1	5.06
					max r2	
	dZn	N: 7			0.990	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
9-Sep-99	**69.3**	1	0.0862	-1.364	4.238	0.912
11-Aug-99	**362.3**	2	0.2241	-0.758	5.892	0.867
15-Jul-99	**817.8**	3	0.3621	-0.353	6.707	0.781
15-Jul-99	**817.8**	4	0.5000	0.000	6.707	0.656
17-Jun-99	**3901.6**	5	0.6379	0.353	8.269	0.990
15-Apr-99	**4626.8**	6	0.7759	0.758	8.440	
13-May-99	**5538.7**	7	0.9138	1.364	8.620	

update for EV, CV:

dZn	SR60		50	49.7
LN Analysis	dZn		0.39	0.39

Concentration — Conc. Data, EV=49.7 ug/L CV=0.39

		Data-based LN		
Avg:	50	u	ln[dZn]	[dZn]
SD:	19	3	5.0	143
CV:	0.39	0	3.84	46
Min:	29	-3	2.71	15
Max:	86			
Median:	38			

				0.910	0.91
u=mLn[Conc.]+b:				51.2	51.2
update for r2, EV, CV:	r2=0.91, EV=51.2 ug/L CV=0.466; max r2=0.95			0.466	0.466
r2 u,lnConc:	0.910	u	lnConc.	Conc.	
slope, m:	2.255	3	5.17	176	
intercept, b:	-8.655	0	3.84	46	
N: 7		-3	2.51	12	
E[Conc]:	51.2	Parameter Estimates			
SD[Conc]:	24	from LN regression			
CV[Conc]:	0.47	update graph label			

	dZn	N: 7				max r2 0.952
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
9-Sep-99	29	1	0.0862	-1.364	3.367	0.910
11-Aug-99	37	2	0.2241	-0.758	3.611	0.895
15-Jul-99	38	3	0.3621	-0.353	3.638	0.940
15-Jul-99	38	4	0.5000	0.000	3.638	0.952
17-Jun-99	49	5	0.6379	0.353	3.892	0.915
13-May-99	71	6	0.7759	0.758	4.263	
15-Apr-99	86	7	0.9138	1.364	4.454	

update for EV, CV:

dZn		**SR60**			7,081	7080
LN Analysis		**dZn**			0.78	0.781
Discharge, Q		**Q Data, EV=7080 cfs CV=0.781**				
Avg:	**7,081**	**Q Data-based LN**				
SD:	**5,527**	u	lnQ	Q		
CV:	**0.78**	3	10.7	44207		
Min:	**444**	0	8.63	5581		
Max:	**14,800**	-3	6.56	705		
Median:	**4,000**					

					0.906	0.906
					12164.6	12200
u=mLn(Q)+b:					2.64	2.64

update for r2, EV, CV: **r2=0.906, EV=12200 cfs CV=2.64; max r2=0.91**

r2 u,lnQ:	0.906	u	lnQ	Q
slope, m:	0.694	3	12.69	324382
intercept, b:	-5.812	0	8.37	4313
N: 7		-3	4.05	57
E[Q]:	12164.6	Parameter Estimates		
SD[Q]:	32084	from LN regression		
CV[Q]:	2.64	update graph label		

						max r2 0.906
	Q	N: 7				
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
9-Sep-99	444	1	0.0862	-1.364	6.096	0.906
11-Aug-99	1820	2	0.2241	-0.758	7.507	0.885
15-Jul-99	4000	3	0.3621	-0.353	8.294	0.817
15-Jul-99	4000	4	0.5000	0.000	8.294	0.717
15-Apr-99	10000	5	0.6379	0.353	9.210	0.689
13-May-99	14500	6	0.7759	0.758	9.582	
17-Jun-99	14800	7	0.9138	1.364	9.602	

Secondary Scale For LN graphs

u	Cumulative Frequecay secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR60	Date:	11-7-00
Chemical:	tCd	Analyst:	L.Raechke
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load						
Avg:	36,265	10,000	#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!	#DIV/0!
SD:	0	0	#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!	#DIV/0!
CV:	0.00	0.00	#DIV/0!	#DIV/0!						
Min:	36,265	10,000	0	0.0				#DIV/0!	0.00	0.00
Max:	36,265	10,000	0	0				#DIV/0!	0.00	0.00
Median:	36,265	10,000	#NUM!	#NUM!				#DIV/0!	#NUM!	#NUM!

tCd	SR60		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b	
#DIV/0!		update r2	#DIV/0!	#DIV/0!		r2:	#DIV/0!	#DIV/0!	
r2 Q,[COC]:	#DIV/0!	[tCd]	Q			m:	#DIV/0!	#DIV/0!	
slope, m:	#DIV/0!	#DIV/0!	10000.0			b:	#DIV/0!	#DIV/0!	
intercept, b:	#DIV/0!	#DIV/0!	10000.0						
N: 0		#DIV/0!	10000						
#DIV/0!			update r2	#DIV/0!	#DIV/0!				
r2 lnQ,ln[COC]:	#DIV/0!	ln[tCd]	ln Q	[tCd]	Q				
slope, m:	#DIV/0!	#DIV/0!	9.21	#DIV/0!	10,000				
intercept, b:	#DIV/0!	#DIV/0!	9.21	#DIV/0!	10,000				
N: 0		#DIV/0!	9.21	#DIV/0!	10,000				for graph
								tCd	0
N= 1								SR60	

update for new data	Sampling Date	Q Discharge cfs	tCd Concentration ug/L	tCd Load lbs/day	Ln Q	Ln tCd Conc.	Ln tCd Load	Standardized Values = (x - Avg)/SD Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	*15-Apr-99*	*10000*			9.21			#DIV/0!		

tCd

Concentration over time analysis

	tCd	SR60	
	LnConc.=mTime+b All data r2, m:		
	Time	**Ln[COC]**	**[COC]**
first:	15-Apr-99	#DIV/0!	#DIV/0!
mid:	15-Apr-99	#DIV/0!	#DIV/0!
last:	15-Apr-99	#DIV/0!	#DIV/0!
	LnConc.=mTime+b >'96 r2, m:		
	0-Jan-00	0.00	1
	15-Apr-99	0.00	1

Load over time analysis

	tCd	SR60	
	LnLoad=mTime+b All data r2, m:		
	Time	**LnLoad**	**Load**
first:	15-Apr-99	#DIV/0!	#DIV/0!
mid:	15-Apr-99	#DIV/0!	#DIV/0!
last:	15-Apr-99	#DIV/0!	#DIV/0!
	LnLoad=mTime+b >'96 r2, m:		
	0-Jan-00	0.00	1
	15-Apr-99	0.00	1

max r2: #DIV/0!

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
#DIV/0!	#DIV/0!	#DIV/0!

r2	Slope, m
Concentration over time	
#DIV/0!	#DIV/0!
0.000	**0.00000**
Load over time	
#DIV/0!	#DIV/0!
0.000	**0.00000**

max r2: #DIV/0!

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

tCd		**SR60**		
LN Analysis		**tCd**		
Load		######		
Avg:	#DIV/0!	**Load Data-based LN**		
SD:	#DIV/0!	**u**	**ln tCd Load**	**tCd Load**
CV:	#DIV/0!	3	#DIV/0!	#DIV/0!
Min:	**0.0**	0	#DIV/0!	#DIV/0!
Max:	**0**	-3	#DIV/0!	#DIV/0!
Median:	#NUM!			
		######	#DIV/0!	
		######	#DIV/0!	

u=mLn(Load)+ b:

update for r2, EV, CV: #DIV/0!

r2 u,lnLoad:	######	**u**	**lnLoad**	**Load**		
slope, m:	######	3	#DIV/0!	#DIV/0!		
intercept, b:	######	0	#DIV/0!	#DIV/0!		
N:	0	-3	#DIV/0!	#DIV/0!		
E[Load]:	###### Parameter Estimates				#DIV/0!	#DIV/0!
SD[Load]:	###### from LN regression				#DIV/0!	#DIV/0!
CV[Load]:	###### update graph label				#DIV/0!	#DIV/0!
					max r2	
	N: 1				0.000	

Date	**tCd Load lbs/day Ranked**	**i rank**	**i-3/8 / N+1/4 plotting points**	**u y-axis**	**Ln x-axis**	**r2 forward**
update and rank for new data						
15-Apr-99		1	0.5000	0.000		

		update for EV, CV:			
tCd		SR60		#DIV/0!	#DIV/0!
LN Analysis		tCd		#DIV/0!	#DIV/0!
Concentration		#DIV/0!			
Avg:	#DIV/0!	Data-based LN			
SD:	#DIV/0!	u	ln[tCd]	[tCd]	
CV:	#DIV/0!	3	#DIV/0!	#DIV/0!	
Min:	0	0	#DIV/0!	#DIV/0!	
Max:	0	-3	#DIV/0!	#DIV/0!	
Median:	#NUM!				

					#DIV/0!	#DIV/0!
	u=mLn(Conc.)+b:				#DIV/0!	#DIV/0!
update for r2, EV, CV:	#DIV/0!				#DIV/0!	#DIV/0!
	r2 u,lnConc:	#DIV/0!	u	lnConc.	Conc.	
	slope, m:	#DIV/0!	3	#DIV/0!	#DIV/0!	
	intercept, b:	#DIV/0!	0	#DIV/0!	#DIV/0!	
	N:	0	-3	#DIV/0!	#DIV/0!	
	E[Conc]:	#DIV/0!	Parameter Estimates			
	SD[Conc]:	#DIV/0!	from LN regression			
	CV[Conc]:	#DIV/0!	update graph label			

						max r2
	tCd	N: 1				0.000
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
15-Apr-99		1	0.5000	0.000		

update for EV, CV:

tCd		**SR60**			10,000	10000
LN Analysis		**tCd**			0.00	0
Discharge, Q		**Q Data, EV=10000 cfs CV=0**				
Avg:	**10,000**	**Q Data-based LN**				
SD:	**0**	u	lnQ	Q		
CV:	**0.00**	3	9.2	10000		
Min:	**10,000**	0	9.21	10000		
Max:	**10,000**	-3	9.21	10000		
Median:	**10,000**					
					#DIV/0!	#DIV/0!
					#DIV/0!	#DIV/0!
	u=mLn(Q)+b:				#DIV/0!	#DIV/0!

update for r2, EV, CV: #DIV/0!

r2 u,lnQ:	######	u	lnQ	Q
slope, m:	######	3	#DIV/0!	#DIV/0!
intercept, b:	######	0	#DIV/0!	#DIV/0!
N:	1	-3	#DIV/0!	#DIV/0!

E[Q]: ###### Parameter Estimates
SD[Q]: ###### from LN regression
CV[Q]: ###### update graph label

	Q	N: 1				max r2 #DIV/0!
	Discharge	i	i-3/8 / N+1/4	u	Ln	r2
Date	cfs	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
15-Apr-99	*10000*	1	0.5000	0.000	9.210	#DIV/0!

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR60	Date:	14-Jul-00
Chemical:	tPb	Analyst:	J.Johnston
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,342	7,081	2	122		0.00	0.00	0.00
SD:	47	5,527	1	138		1.00	1.00	1.00
CV:	0.00	0.78	0.66	1.13				
Min:	36,265	444	1	2.0		-1.20	-0.93	-0.87
Max:	36,412	14,800	5	390		1.40	1.97	1.95
Median:	36,356	4,000	1	26		-0.56	-0.68	-0.70

tPb	SR60		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.837)		update r2	0.84	0.837		r2:	0.646	0.766
r2 Q,[COC]:	0.84	[tPb]	Q			m:	-94.3889	-0.02181
slope, m:	0.0	1	444.0			b:	3437347	801.06
intercept, b:	0.5	2	7080.6					
N: 7		4	14800					
LnConc. = mLn(Q)+b (r2=0.78)			update r2	0.78	0.78			
r2 lnQ,ln[COC]:	0.78	ln[tPb]	ln Q	[tPb]	Q			
slope, m:	0.48	-0.52	6.10	1	444			
intercept, b:	-3.43	0.81	8.87	2	7,081			
N: 7		1.16	9.60	3	14,800			

N= 7

	Sampling Date	Q Discharge	tPb Concentration	tPb Load	Ln Q	Ln tPb Conc.	Ln tPb Load	tPb SR60 Standardized Values = (x - Avg)/SD Q	Conc	for graph 0 Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	15-Apr-99	10000	3	161.4	9.21	1.10	5.08	0.53	0.57	0.29
USGS	13-May-99	14500	5	390.1	9.58	1.61	5.97	1.34	1.97	1.95
USGS	17-Jun-99	14800	3	238.9	9.60	1.10	5.48	1.40	0.57	0.85
USGS	15-Jul-99	4000	1.2	25.8	8.29	0.18	3.25	-0.56	-0.68	-0.70
USGS	15-Jul-99	4000	1.2	25.8	8.29	0.18	3.25	-0.56	-0.68	-0.70
USGS	11-Aug-99	1820	1	9.8	7.51	0.00	2.28	-0.95	-0.82	-0.82
USGS	9-Sep-99	444	0.84	2.0	6.10	-0.17	0.70	-1.20	-0.93	-0.87

tPb

Concentration over time analysis r2 Slope, m

tPb SR60 **Concentration over time**

LnConc.=mTime+b All data r2, m: **0.786** **-0.01196**

	Time	Ln[COC]	[COC]
first:	15-Apr-99	1.49	4
mid:	15-Jul-99	0.40	1
last:	9-Sep-99	-0.27	1

LnConc.=mTime+b >'96 r2, m: **0.000** **0.00000**

0-Jan-00	0.00	1
9-Sep-99	0.00	1

Load over time analysis

tPb SR60 **Load over time**

LnLoad=mTime+b All data r2, m: **0.817** **-0.03377**

	Time	LnLoad	Load
first:	15-Apr-99	6.31	551
mid:	15-Jul-99	3.24	25
last:	9-Sep-99	1.35	4

LnLoad=mTime+b >'96 r2, m: **0.000** **0.00000**

0-Jan-00	0.00	1
9-Sep-99	0.00	1

max r2: 0.999 max r2: 0.988

Forward time Regression on Ln Concentration(t) **Forward time Regression on Ln Load(t)**

r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.786	-0.01196	435.22	0.817	-0.03377	1231.05
0.888	-0.01604	583.58	0.959	-0.04655	1695.94
0.762	-0.01353	492.19	0.966	-0.05372	1956.66
0.999	-0.00640	232.84	0.988	-0.04486	1634.19
0.999	-0.00636	231.58	0.986	-0.04573	1666.07

update for EV, CV:

tPb
LN Analysis
SR60
tPb

Load

Load Data, EV=122 lbs/day CV=1.13

Avg:	**122**	**Load Data-based LN**		
SD:	**138**	**u**	**ln tPb Load**	**tPb Load**
CV:	**1.13**	3	7.1	1226
Min:	**2.0**	0	4.39	81
Max:	**390**	-3	1.67	5.3
Median:	**26**			
		122	122	
		1.13	1.13	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.95, EV=380lbs/day CV=9.19; max r2=0.998**

r2 u,lnLoad:	0.950	u	lnLoad	Load		
slope, m:	0.474	3	10.04	22990		
intercept, b:	-1.761	0	3.72	41		
N: 7		-3	-2.61	0.1		
E[Load]:	379.8	Parameter Estimates			0.950	0.95
SD[Load]:	3491	from LN regression			379.8	380
CV[Load]:	9.19	update graph label			9.2	9.19
					max r2	
	tPb	N: 7			0.998	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
9-Sep-99	**2.0**	1	0.0862	-1.364	0.696	0.950
11-Aug-99	**9.8**	2	0.2241	-0.758	2.282	0.916
15-Jul-99	**25.8**	3	0.3621	-0.353	3.251	0.862
15-Jul-99	**25.8**	4	0.5000	0.000	3.251	0.787
15-Apr-99	**161.4**	5	0.6379	0.353	5.084	0.998
17-Jun-99	**238.9**	6	0.7759	0.758	5.476	
13-May-99	**390.1**	7	0.9138	1.364	5.966	

update for EV, CV:

tPb		SR60		2	2.18
LN Analysis		tPb		0.66	0.659
Concentration		Conc. Data, EV=2.18 ug/L CV=0.659			
Avg:	2	Data-based LN			
SD:	1	u	ln[tPb]	[tPb]	
CV:	0.66	3	2.4	11	
Min:	1	0	0.60	2	
Max:	5	-3	-1.20	0	
Median:	1				

					0.893	0.893
u=mLn{Conc.}+b:					2.4	2.41
update for r2, EV, CV:	r2=0.893, EV=2.41 ug/L CV=0.923; max r2=0.90				0.923	0.923
	r2 u,lnConc:	0.893	u	lnConc.	Conc.	
	slope, m:	1.274	3	2.93	19	
	intercept, b:	-0.727	0	0.57	2	
	N: 7		-3	-1.78	0	
	E[Conc]:	2.4	Parameter Estimates			
	SD[Conc]:	2	from LN regression			
	CV[Conc]:	0.92	update graph label			

	tPb	N: 7				max r2 0.902
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
9-Sep-99	0.84	1	0.0862	-1.364	-0.174	0.893
11-Aug-99	1	2	0.2241	-0.758	0.000	0.902
15-Jul-99	1.2	3	0.3621	-0.353	0.182	0.881
15-Jul-99	1.2	4	0.5000	0.000	0.182	0.824
15-Apr-99	3	5	0.6379	0.353	1.099	0.841
17-Jun-99	3	6	0.7759	0.758	1.099	
13-May-99	5	7	0.9138	1.364	1.609	

update for EV, CV:

tPb		**SR60**			7,081	7080
LN Analysis		**tPb**			0.78	0.781
Discharge, Q		**Q Data, EV=7080 cfs CV=0.781**				
Avg:	**7,081**	**Q Data-based LN**				
SD:	**5,527**	u	lnQ	Q		
CV:	**0.78**	3	10.7	44207		
Min:	**444**	0	8.63	5581		
Max:	**14,800**	-3	6.56	705		
Median:	**4,000**					
					0.906	0.906
					12164.6	12200
	u=mLn{Q}+b:				2.64	2.64

update for r2, EV, CV: **r2=0.906, EV=12200 cfs CV=2.64; max r2=0.91**

r2 u,lnQ:	0.906	u	lnQ	Q
slope, m:	0.694	3	12.69	324382
intercept, b:	-5.812	0	8.37	4313
N: 7		-3	4.05	57
E[Q]:	12164.6	Parameter Estimates		
SD[Q]:	32084	from LN regression		
CV[Q]:	2.64	update graph label		

N: 7

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Lu x-axis	max r2 0.906 r2 forward
update and rank for new data						
9-Sep-99	444	1	0.0862	-1.364	6.096	0.906
11-Aug-99	1820	2	0.2241	-0.758	7.507	0.885
15-Jul-99	4000	3	0.3621	-0.353	8.294	0.817
15-Jul-99	4000	4	0.5000	0.000	8.294	0.717
15-Apr-99	10000	5	0.6379	0.353	9.210	0.689
13-May-99	14500	6	0.7759	0.758	9.582	
17-Jun-99	14800	7	0.9138	1.364	9.602	

Secondary Scale For LN graphs

z	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR60	Date:	14-Jul-00
Chemical:	tZn	Analyst:	J.Johnston
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	36,355	6,594	47	2,067	0.00	0.00	0.00
SD:	38	5,830	16	2,265	1.00	1.00	1.00
CV:	0.00	0.88	0.34	1.10			
Min:	36,293	444	31	73.3	-1.05	-1.01	-0.88
Max:	36,412	14,800	80	6,241	1.41	2.09	1.84
Median:	36,356	4,000	40	859	-0.44	-0.43	-0.53

tZn	SR60		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b	
Conc. = mQ+b (r2=0.674)		update r2	0.67	0.674	r2:	0.822	0.911	
r2 Q,[COC]:	0.67	[tZn]	Q		m:	-139.5489	-0.03051	
slope, m:	0.0	33	444.0		b:	5079848	1117.58	
intercept, b:	32.0	47	6594.0					
N: 6		65	14800					
LnConc. = mLn{Q}+b (r2=0.701)		update r2	0.70	0.701				
r2 lnQ,ln[COC]:	0.70	ln[tZn]	ln Q	[tZn]	Q			
slope, m:	0.21	3.36	6.10	29	444			
intercept, b:	2.11	3.91	8.79	50	6,594			
N: 6		4.08	9.60	59	14,800			

								tZn	for graph 0	
N= 6								SR60		
	Sampling Date	Q Discharge	tZn Concentration	tZn Load	Ln Q	Ln tZn Conc.	Ln tZn Load	Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		y-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	13-May-99	14500	80	6240.8	9.58	4.38	8.74	1.36	2.09	1.84
USGS	17-Jun-99	14800	50	3981.2	9.60	3.91	8.29	1.41	0.20	0.84
USGS	15-Jul-99	4000	39.9	858.6	8.29	3.69	6.76	-0.44	-0.43	-0.53
USGS	15-Jul-99	4000	39.9	858.6	8.29	3.69	6.76	-0.44	-0.43	-0.53
USGS	11-Aug-99	1820	40	391.7	7.51	3.69	5.97	-0.82	-0.43	-0.74
USGS	9-Sep-99	444	30.7	73.3	6.10	3.42	4.30	-1.05	-1.01	-0.88

tZn

Concentration over time analysis r2 Slope, m

tZn SR60 **Concentration over time**

LnConc.=mTime+b All data r2, m: **0.893** **-0.00742**

	Time	Ln[COC]	[COC]
first:	13-May-99	4.25	70
mid:	15-Jul-99	3.79	44
last:	9-Sep-99	3.37	29

LnConc.=mTime+b >'96 r2, m: **0.000** **0.00000**

0-Jan-00	0.00	1
9-Sep-99	0.00	1

Load over time analysis

tZn SR60 **Load over time**

LnLoad=mTime+b All data r2, m: **0.957** **-0.03794**

	Time	LnLoad	Load
first:	13-May-99	9.14	9,321
mid:	15-Jul-99	6.75	854
last:	9-Sep-99	4.63	102

LnLoad=mTime+b >'96 r2, m: **0.000** **0.00000**

0-Jan-00	0.00	1
9-Sep-99	0.00	1

max r2: 1.000 max r2: 1.000

Forward time Regression on Ln Concentration(t) **Forward time Regression on Ln Load(t)**

r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.893	-0.00742	273.57	0.957	-0.03794	1385.93
0.875	-0.00508	188.53	0.983	-0.04528	1653.00
0.766	-0.00430	160.21	0.971	-0.04276	1561.57
0.761	-0.00474	175.89	0.966	-0.04411	1610.38
1.000	-0.00912	335.67	1.000	-0.05777	2107.88

update for EV, CV:

tZn		**SR60**		
LN Analysis		**tZn**		
Load		**Load Data, EV=2070 lbs/day CV=1.1**		
Avg:	**2,067**	**Load Data-based LN**		
SD:	**2,265**	**u**	**ln tZn Load**	**tZn Load**
CV:	**1.10**	3	9.9	20009
Min:	**73.3**	0	7.24	1394
Max:	**6,241**	-3	4.58	97.1
Median:	**859**			
		2,067		2070
		1.10		1.1

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.951, EV=4550lbs/day CV=4.96; max r2=1.0**

r2 u,lnLoad:	0.951	u	lnLoad	Load		
slope, m:	0.555	3	12.20	199604		
intercept, b:	-3.776	0	6.80	898		
N: 6		-3	1.40	4.0		
E[Load]:	4549.4	Parameter Estimates			0.951	0.951
SD[Load]:	22581	from LN regression			4549.4	4550
CV[Load]:	4.96	update graph label			5.0	4.96
					max r2	
tZn		N: 6			1.000	

Date	**Load lbs/day Ranked**	**i rank**	**i-3/8 / N+1/4 plotting points**	**u y-axis**	**Ln x-axis**	**r2 forward**
update and rank for new data						
9-Sep-99	**73.3**	1	0.1000	-1.282	4.295	0.951
11-Aug-99	**391.7**	2	0.2600	-0.643	5.970	0.924
15-Jul-99	**858.6**	3	0.4200	-0.202	6.755	0.871
15-Jul-99	**858.6**	4	0.5800	0.202	6.755	0.841
17-Jun-99	**3981.2**	5	0.7400	0.643	8.289	1.000
13-May-99	**6240.8**	6	0.9000	1.282	8.739	

		update for EV, CV:				
tZn		**SR60**		47	46.8	
LN Analysis		**tZn**		0.34	0.34	
Concentration		**Conc. Data, EV=46.8 ug/L CV=0.34**				
Avg:	47	**Data-based LN**				
SD:	16	u	ln[tZn]	[tZn]		
CV:	0.34	3	4.8	119		
Min:	31	0	3.79	44		
Max:	80	-3	2.80	16		
Median:	40					

					0.847	0.847
	u=mLn(Conc.)+b:				48.0	48
update for r2, EV, CV:	**r2=0.847, EV=48 ug/L CV=0.401; max r2=1.0**				0.401	0.401
	r2 u,lnConc:	0.847	u	lnConc.	Conc.	
	slope, m:	2.588	3	4.96	142	
	intercept, b:	-9.825	0	3.80	45	
	N: 6		-3	2.64	14	
	E[Conc]:	48.0	Parameter Estimates			
	SD[Conc]:	19	from LN regression			
	CV[Conc]:	0.40	update graph label			

	tZn	N: 6				max r2 1.000
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
9-Sep-99	30.7	1	0.1000	-1.282	3.424	0.847
15-Jul-99	39.9	2	0.2600	-0.643	3.686	0.791
15-Jul-99	39.9	3	0.4200	-0.202	3.686	0.902
11-Aug-99	40	4	0.5800	0.202	3.689	0.990
17-Jun-99	50	5	0.7400	0.643	3.912	1.000
13-May-99	80	6	0.9000	1.282	4.382	

		update for EV, CV:				
tZn		**SR60**			6,594	6590
LN Analysis		**tZn**			0.88	0.884
Discharge, Q		**Q Data, EV=6590 cfs CV=0.884**				
Avg:	**6,594**	**Q Data-based LN**				
SD:	**5,830**	**u**	**lnQ**	**Q**		
CV:	**0.88**	3	10.8	48291		
Min:	**444**	0	8.51	4940		
Max:	**14,800**	-3	6.23	505		
Median:	**4,000**					
					0.921	0.921
					11708.0	11700
	u=mLn(Q)+b:				2.96	2.96

update for r2, EV, CV: **r2=0.921, EV=11700 cfs CV=2.96; max r2=1.0**

r2 u,lnQ:	0.921	**u**	**lnQ**	**Q**
slope, m:	0.663	3	12.76	346918
intercept, b:	-5.453	0	8.23	3749
N: 6		-3	3.70	41
E[Q]:	11708.0	Parameter Estimates		
SD[Q]:	34643	from LN regression		
CV[Q]:	2.96	update graph label		

	Q	N: 6				max r2 1.000
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
9-Sep-99	444	1	0.1000	-1.282	6.096	0.921
11-Aug-99	1820	2	0.2600	-0.643	7.507	0.876
15-Jul-99	4000	3	0.4200	-0.202	8.294	0.773
15-Jul-99	4000	4	0.5800	0.202	8.294	0.667
13-May-99	14500	5	0.7400	0.643	9.582	1.000
17-Jun-99	14800	6	0.9000	1.282	9.602	

Secondary Scale For LN graphs

z	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR65	Date:	21-Jul-00
Chemical:	dCd	Analyst:	L.Ratchke
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,342	7,249	1	80	0.00	#DIV/0!	0.00
SD:	47	5,567	0	1	1.00	#DIV/0!	1.00
CV:	0.00	0.77	0.00	0.01			
Min:	36,265	444	1	79.6	-1.22	#DIV/0!	-1.00
Max:	36,412	15,000	1	81	1.39	#DIV/0!	1.00
Median:	36,356	4,300	1	80	-0.53	#DIV/0!	0.00

dCd	SR65		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
#DIV/0!		update r2	#DIV/0!	#DIV/0!	r2:	0.645	0.757
r2 Q,[COC]:	#DIV/0!	[dCd]	Q		m:	-95.5079	-0.02179
slope, m:	0.0	1	444.0		b:	3478156	800.26
intercept, b:	1.0	1	7249.1				
N: 2		1	15000				
#DIV/0!		update r2		#DIV/0!	#DIV/0!		
r2 lnQ,ln[COC]:	#DIV/0!	ln[dCd]	ln Q	[dCd]	Q		
slope, m:	0.00	0.00	6.10	1	444		
intercept, b:	0.00	0.00	8.89	1	7,249		
N: 2		0.00	9.62	1	15,000		

N= 7

	Sampling Date	Q Discharge	dCd Concentration	dCd Load	Ln Q	Ln dCd Conc.	Ln dCd Load	dCd SR65 Standardized Values = (x - Avg)/SD Q	Conc	Load	for graph 0
update for new data		cfs	ug/L	lbs/day							
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis				
USGS	*15-Apr-99*	*10000*			9.21			0.49			
USGS	13-May-99	15000	1	80.7	9.62	0.00	4.39	1.39	#DIV/0!	1.00	
USGS	17-Jun-99	14800	1	79.6	9.60	0.00	4.38	1.36	#DIV/0!	-1.00	
USGS	*15-Jul-99*	*4300*			8.37			-0.53			
USGS	*15-Jul-99*	*4300*			8.37			-0.53			
USGS	9-Aug-99	1900			7.55			-0.96			
USGS	9-Sep-99	444			6.10			-1.22			

dCd

Concentration over time analysis

dCd SR65

LnConc.=mTime+b All data r2, m:

	Time	Ln[COC]	[COC]
first:	15-Apr-99	0.00	1
mid:	15-Jul-99	0.00	1
last:	9-Sep-99	0.00	1

LnConc.=mTime+b >'96 r2, m:

0-Jan-00	0.00	1
9-Sep-99	0.00	1

Load over time analysis

dCd SR65

LnLoad=mTime+b All data r2, m:

	Time	LnLoad	Load
first:	15-Apr-99	4.40	82
mid:	15-Jul-99	4.37	79
last:	9-Sep-99	4.35	77

LnLoad=mTime+b >'96 r2, m:

0-Jan-00	0.00	1
9-Sep-99	0.00	1

max r2: #DIV/0!

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00
#DIV/0!	#DIV/0!	#DIV/0!

r2 Slope, m

Concentration over time

#DIV/0!	0.00000
0.000	0.00000

Load over time

1.000	-0.00038
0.000	0.00000

max r2: #DIV/0!

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
1.000	-0.00038	18.31
1.000	-0.00038	18.31
#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

dCd		**SR65**		
LN Analysis		**dCd**		
Load		**Load Data, EV=80.2 lbs/day CV=0.00671**		
Avg:	**80**	**Load Data-based LN**		
SD:	**1**	**u**	**ln dCd Load**	**dCd Load**
CV:	**0.01**	3	4.4	82
Min:	**79.6**	0	4.38	80
Max:	**81**	-3	4.36	78.6
Median:	**80**			

80	80.2
0.01	0.00671

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=1, EV=78.3lbs/day CV=0.0221; max r2=0.99**

r2 u,lnLoad:	1.000	u	lnLoad	Load		
slope, m:	45.161	3	4.43	84		
intercept, b:	-196.925	0	4.36	78		
N: 2		-3	4.29	73.3		
E[Load]:	78.3	Parameter Estimates			1.000	1
SD[Load]:	2	from LN regression			78.3	78.3
CV[Load]:	0.02	update graph label			0.0	0.0221
					max r2	
dCd		N: 7			0.000	
Load		**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
9-Sep-99		1	0.0862	-1.364		
9-Aug-99		2	0.2241	-0.758		
15-Jul-99		3	0.3621	-0.353		
15-Jul-99		4	0.5000	0.000		
15-Apr-99		5	0.6379	0.353		
17-Jun-99	79.6	6	0.7759	0.758	4.377	
13-May-99	80.7	7	0.9138	1.364	4.391	

		update for EV, CV:			
dCd		**SR65**		1	1.02
LN Analysis		**dCd**		0.00	0.00493
Concentration		**Conc. Data, EV=1.02 ug/L CV=0.00493**			
Avg:	1	**Data-based LN**			
SD:	0	u	ln[dCd]	[dCd]	
CV:	0.00	3	0.0	1	
Min:	1	0	0.01	1	
Max:	1	-3	0.00	1	
Median:	1				

					1.000	1
	u=mLn[Conc.]+b:				1.0	0.998
update for r2, EV, CV:	**r2=1, EV=0.998 ug/L CV=0.0163; max r2=0.99**				0.016	0.0163
	r2 u,lnConc:	1.000	u	lnConc.	Conc.	
	slope, m:	61.528	3	0.05	1	
	intercept, b:	0.146	0	0.00	1	
	N:	2	-3	-0.05	1	
	E[Conc]:	1.0	Parameter Estimates			
	SD[Conc]:	0	from LN regression			
	CV[Conc]:	0.02	update graph label			

	dCd	N: 7				max r2 0.000
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
	update and rank for new data					
15-Apr-99		1	0.0862	-1.364		
15-Jul-99		2	0.2241	-0.758		
15-Jul-99		3	0.3621	-0.353		
9-Aug-99		4	0.5000	0.000		
9-Sep-99		5	0.6379	0.353		
13-May-99	1.01	6	0.7759	0.758	0.010	
17-Jun-99	1.02	7	0.9138	1.364	0.020	

update for EV, CV:

dCd		**SR65**			7,249	7250
LN Analysis		**dCd**			0.77	0.768
Discharge, Q		**Q Data, EV=7250 cfs CV=0.768**				
Avg:	**7,249**	**Q Data-based LN**				
SD:	**5,567**	u	lnQ	Q		
CV:	**0.77**	3	10.7	44336		
Min:	**444**	0	8.66	5749		
Max:	**15,000**	-3	6.61	746		
Median:	**4,300**					

					0.900	0.9
					12631.3	12600
u=mLn{Q}+b:					2.66	2.66
update for r2, EV, CV:	**r2=0.9, EV=12600 cfs CV=2.66; max r2=0.98**					
	r2 u,lnQ:	0.900	u	lnQ	Q	
	slope, m:	0.692	3	12.73	339014	
	intercept, b:	-5.817	0	8.40	4451	
	N: 7		-3	4.07	58	
	E[Q]:	12631.3	Parameter Estimates			
	SD[Q]:	33543	from LN regression			
	CV[Q]:	2.66	update graph label			

						max r2
	Q	N: 7				0.900
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
9-Sep-99	444	1	0.0862	-1.364	6.096	0.900
9-Aug-99	1900	2	0.2241	-0.758	7.550	0.886
15-Jul-99	*4300*	3	0.3621	-0.353	8.366	0.824
15-Jul-99	*4300*	4	0.5000	0.000	8.366	
15-Apr-99	*10000*	5	0.6379	0.353	9.210	
17-Jun-99	14800	6	0.7759	0.758	9.602	
13-May-99	15000	7	0.9138	1.364	9.616	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

Several values were reported at a concentration of 1 µg/L by the laboratory. Because the log of 1 is zero, use of 1 causes division by zero in the lognormal probabilistic analysis. Therefore, to perform the analyses, these values were changed to 1.01, 1.02, 1.03, etc. These changes are within the data uncertainty and have a minimal impact on estimations of concentrations and no impact on loading calculations.

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SR65 **Date:** 21-Jul-00
Chemical: dPb **Analyst:** L.Raschke
Notes:

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,342	7,249	1	71	0.00	#DIV/0!	0.00
SD:	47	5,567	0	12	1.00	#DIV/0!	1.00
CV:	0.00	0.77	0.00	0.17			
Min:	36,265	444	1	53.8	-1.22	#DIV/0!	-1.41
Max:	36,412	15,000	1	81	1.39	#DIV/0!	0.75
Median:	36,356	4,300	1	80	-0.53	#DIV/0!	0.66

dPb SR65 : Concentration v. Discharge, Q — Q = mTime +b — LnQ = mTime +b

#DIV/0!		update r2	#DIV/0!	#DIV/0!	r2:	0.645	0.757
r2 Q,[COC]:	#DIV/0!	[dPb]	Q		m:	-95.5079	-0.02179
slope, m:	0.0	1	444.0		b:	3478156	800.26
intercept, b:	1.0	1	7249.1				
N: 3		1	15000				
#DIV/0!		update r2		#DIV/0!	#DIV/0!		
r2 lnQ,ln[COC]:	#DIV/0!	ln[dPb]	ln Q	[dPb]	Q		
slope, m:	0.00	0.00	6.10	1	444		
intercept, b:	0.00	0.00	8.89	1	7,249		
N: 3		0.00	9.62	1	15,000		

for graph: dPb 0

N= 7

	Sampling Date	Q Discharge	dPb Concentration	dPb Load	Ln Q	Ln dPb Conc.	Ln dPb Load	Standardized Values = (x - Avg)/SD		
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	15-Apr-99	10000	1	53.8	9.21	0.00	3.99	0.49	#DIV/0!	-1.41
USGS	13-May-99	15000	1	80.7	9.62	0.00	4.39	1.39	#DIV/0!	0.75
USGS	17-Jun-99	14800	1	79.6	9.60	0.00	4.38	1.36	#DIV/0!	0.66
USGS	*15-Jul-99*	*4300*			8.37			-0.53		
USGS	*15-Jul-99*	*4300*			8.37			-0.53		
USGS	*9-Aug-99*	*1900*			7.55			-0.96		
USGS	*9-Sep-99*	*444*			6.10			-1.22		

dPb

Concentration over time analysis

	dPb	SR65		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			#DIV/0!	**0.00000**
	Time	**Ln[COC]**	**[COC]**		
first:	15-Apr-99	0.00	1		
mid:	15-Jul-99	0.00	1		
last:	9-Sep-99	0.00	1		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

Load over time analysis

	dPb	SR65			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.665**	**0.00595**
	Time	**LnLoad**	**Load**		
first:	15-Apr-99	4.07	59		
mid:	15-Jul-99	4.61	101		
last:	9-Sep-99	4.95	141		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

	max r2:	#DIV/0!		max r2:	#DIV/0!	
	Forward time Regression on			**Forward time Regression on**		
	Ln Concentration(t)			**Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	#DIV/0!	0.00000	0.00	0.665	0.00595	-211.78
	#DIV/0!	0.00000	0.00	1.000	-0.00038	18.31
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

dPb		**SR65**		
LN Analysis		**dPb**		
Load		**Load Data, EV=71.4 lbs/day CV=0.174**		
Avg:	**71**	**Load Data-based LN**		
SD:	**12**	**u**	**ln dPb Load**	**dPb Load**
CV:	**0.17**	3	4.8	118
Min:	**53.8**	0	4.25	70
Max:	**81**	-3	3.73	41.9
Median:	**80**			
		71	71.4	
		0.17	0.174	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.673, EV=51.8lbs/day CV=0.596; max r2=0**

r2 u,lnLoad:	0.673	u	lnLoad	Load		
slope, m:	1.814	3	5.45	233		
intercept, b:	-6.884	0	3.80	45		
N:	3	-3	2.14	8.5		
E[Load]:	51.8	Parameter Estimates			0.673	0.673
SD[Load]:	31	from LN regression			51.8	51.8
CV[Load]:	0.60	update graph label			0.6	0.596
					max r2	
	dPb	**N: 7**			0.000	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
9-Sep-99		1	0.0862	-1.364		
9-Aug-99		2	0.2241	-0.758		
15-Jul-99		3	0.3621	-0.353		
15-Jul-99		4	0.5000	0.000		
15-Apr-99	53.8	5	0.6379	0.353	3.985	
17-Jun-99	79.6	6	0.7759	0.758	4.377	
13-May-99	80.7	7	0.9138	1.364	4.391	

		update for EV, CV:			
dPb		**SR65**		1	1.02
LN Analysis		**dPb**		0.01	0.008
Concentration		**Conc. Data, EV=1.02 ug/L CV=0.008**			
Avg:	1	**Data-based LN**			
SD:	0	u	ln[dPb]	[dPb]	
CV:	0.01	3	0.0	1	
Min:	1	0	0.02	1	
Max:	1	-3	0.00	1	
Median:	1				

					0.986	0.986
	u=mLn(Conc.)+b:				1.0	1
update for r2, EV, CV:	**r2=0.986, EV=1 ug/L CV=0.0194; max r2=0**				0.019	0.0194
	r2 u,lnConc:	0.986	u	lnConc.	Conc.	
	slope, m:	51.570	3	0.06	1	
	intercept, b:	-0.194	0	0.00	1	
	N: 3		-3	-0.05	1	
	E[Conc]:	1.0	Parameter Estimates			
	SD[Conc]:	0	from LN regression			
	CV[Conc]:	0.02	update graph label			

	dPb	N: 7				max r2 0.000
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L Ranked**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
update and rank for new data						
15-Jul-99		1	0.0862	-1.364		
15-Jul-99		2	0.2241	-0.758		
9-Aug-99		3	0.3621	-0.353		
9-Sep-99		4	0.5000	0.000		
15-Apr-99	1.01	5	0.6379	0.353	0.010	
13-May-99	1.02	6	0.7759	0.758	0.020	
17-Jun-99	1.03	7	0.9138	1.364	0.030	

update for EV, CV:

dPb		**SR65**			7,249	7250
LN Analysis		**dPb**			0.77	0.768
Discharge, Q		**Q Data, EV=7250 cfs CV=0.768**				
Avg:	**7,249**	**Q Data-based LN**				
SD:	**5,567**	**u**	**lnQ**	**Q**		
CV:	**0.77**	3	10.7	44336		
Min:	**444**	0	8.66	5749		
Max:	**15,000**	-3	6.61	746		
Median:	**4,300**					

					0.900	0.9
					12631.3	12600
u=mLn{Q}+b:					2.66	2.66

update for r2, EV, CV: **r2=0.9, EV=12600 cfs CV=2.66; max r2=0.90**

r2 u,lnQ:	0.900	u	lnQ	Q
slope, m:	0.692	3	12.73	339014
intercept, b:	-5.817	0	8.40	4451
N: 7		-3	4.07	58
E[Q]:	12631.3	Parameter Estimates		
SD[Q]:	33543	from LN regression		
CV[Q]:	2.66	update graph label		

	Q	N: 7				max r2 0.900
	Discharge	i	i-3/8 / N+1/4	u	Ln	r2
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
9-Sep-99	*444*	1	0.0862	-1.364	6.096	0.900
9-Aug-99	*1900*	2	0.2241	-0.758	7.550	0.886
15-Jul-99	*4300*	3	0.3621	-0.353	8.366	0.824
15-Jul-99	*4300*	4	0.5000	0.000	8.366	
15-Apr-99	10000	5	0.6379	0.353	9.210	
17-Jun-99	14800	6	0.7759	0.758	9.602	
13-May-99	15000	7	0.9138	1.364	9.616	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

Several values were reported at a concentration of 1 µg/L by the laboratory. Because the log of 1 is zero, use of 1 causes division by zero in the lognormal probabilistic analysis. Therefore, to perform the analyses, these values were changed to 1.01, 1.02, 1.03, etc. These changes are within the data uncertainty and have a minimal impact on estimations of concentrations and no impact on loading calculations.

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SR65 **Date:** 14-Jul-00
Chemical: dZn **Analyst:** J. Johnston
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load
Avg:	36,342	7,249	48	2,381
SD:	47	5,567	23	2,205
CV:	0.00	0.77	0.48	0.93
Min:	36,265	444	22	52.6
Max:	36,412	15,000	92	5,730
Median:	36,356	4,300	40	925

0.00	0.00	0.00
1.00	1.00	1.00
-1.22	-1.14	-1.06
1.39	1.88	1.52
-0.53	-0.36	-0.66

dZn SR65 : Concentration v. Discharge, Q

Conc. = mQ+b (r2=0.505) update r2 **0.50** 0.505

r2 Q,[COC]:	0.50	[dZn]	Q	
slope, m:	0.0	28	444.0	
intercept, b:	27.0	48	7249.1	
N: 7		71	15000	

LnConc. = mLn(Q)+b (r2=0.744) update r2 0.74 0.744

r2 lnQ,ln[COC]:	0.74	ln[dZn]	ln Q	[dZn]	Q
slope, m:	0.35	2.97	6.10	19	444
intercept, b:	0.86	3.94	8.89	51	7,249
N: 7		4.19	9.62	66	15,000

Q = mTime +b

r2:	0.645	0.757
m:	-95.5079	-0.02179
b:	3478156	800.26

LnQ = mTime +b

N= 7

	Sampling Date	Q Discharge cfs	dZn Concentration ug/L	dZn Load lbs/day	Ln Q	Ln dZn Conc.	Ln dZn Load
update for new data							
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis
USGS	15-Apr-99	10000	92	4949.6	9.21	4.52	8.51
USGS	13-May-99	15000	71	5729.7	9.62	4.26	8.65
USGS	17-Jun-99	14800	48	3822.0	9.60	3.87	8.25
USGS	15-Jul-99	4300	40	925.4	8.37	3.69	6.83
USGS	15-Jul-99	4300	40	925.4	8.37	3.69	6.83
USGS	9-Aug-99	1900	26	265.8	7.55	3.26	5.58
USGS	9-Sep-99	444	22	52.6	6.10	3.09	3.96

	for graph 0	
dZn		
SR65		
Standardized Values = (x - Avg)/SD		
Q	Conc	Load
0.49	1.88	1.16
1.39	0.97	1.52
1.36	-0.02	0.65
-0.53	-0.36	-0.66
-0.53	-0.36	-0.66
-0.96	-0.97	-0.96
-1.22	-1.14	-1.06

dZn

Concentration over time analysis

	dZn	SR65		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.985	-0.00999
	Time	Ln[COC]	[COC]		
first:	15-Apr-99	4.53	93		
mid:	15-Jul-99	3.62	38		
last:	9-Sep-99	3.07	21		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

Load over time analysis

	dZn	SR65			
				Load over time	
	LnLoad=mTime+b All data r2, m:			0.868	-0.03178
	Time	LnLoad	Load		
first:	15-Apr-99	9.38	11,827		
mid:	15-Jul-99	6.49	656		
last:	9-Sep-99	4.71	111		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

	max r2:	0.985		max r2:	1.000	
	Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.985	-0.00999	366.79	0.868	-0.03178	1161.83
	0.974	-0.01012	371.40	0.950	-0.04094	1494.91
	0.946	-0.01014	372.21	1.000	-0.05095	1859.10
	0.929	-0.01104	405.13	1.000	-0.05115	1866.35
	0.906	-0.01047	384.18	1.000	-0.05126	1870.56

update for EV, CV:

dZn		**SR65**		
LN Analysis		**dZn**		
Load		**Load Data, EV=2380 lbs/day CV=0.926**		
Avg:	**2,381**	**Load Data-based LN**		
SD:	**2,205**	u	ln dZn Load	dZn Load
CV:	**0.93**	3	9.8	18512
Min:	**52.6**	0	7.47	1748
Max:	**5,730**	-3	5.11	165.0
Median:	**925**			
		2,381	2380	
		0.93	0.926	

u=mLn(Load)+ b:

update for r2, EV, CV: **r2=0.91, EV=7030lbs/day CV=6.7; max r2=0.93**

r2 u,lnLoad:	0.910	u	lnLoad	Load		
slope, m:	0.511	3	12.81	367067		
intercept, b:	-3.550	0	6.94	1038		
N:	7	-3	1.08	2.9		
E[Load]:	7031.1	Parameter Estimates			0.910	0.91
SD[Load]:	47116	from LN regression			7031.1	7030
CV[Load]:	6.70	update graph label			6.7	6.7
					max r2	
	N: 7				0.927	

Date	dZn Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
9-Sep-99	52.6	1	0.0862	-1.364	3.962	0.910
9-Aug-99	265.8	2	0.2241	-0.758	5.583	0.868
15-Jul-99	925.4	3	0.3621	-0.353	6.830	0.799
15-Jul-99	925.4	4	0.5000	0.000	6.830	0.684
17-Jun-99	3822.0	5	0.6379	0.353	8.249	0.927
15-Apr-99	4949.6	6	0.7759	0.758	8.507	
13-May-99	5729.7	7	0.9138	1.364	8.653	

		update for EV, CV:			
dZn		**SR65**		48	48.4
LN Analysis		**dZn**		0.48	0.478
Concentration		**Conc. Data, EV=48.4 ug/L CV=0.478**			
Avg:	**48**	**Data-based LN**			
SD:	**23**	u	ln[dZn]	[dZn]	
CV:	**0.48**	3	5.1	170	
Min:	**22**	0	3.78	44	
Max:	**92**	-3	2.42	11	
Median:	**40**				

					0.969	0.969
	u=ml.n(Conc.)+b:				50.7	50.7
update for r2, EV, CV:	**r2=0.969, EV=50.7 ug/L CV=0.606; max r2=0.97**				0.606	0.606
	r2 u,lnConc:	0.969	u	lnConc.	Conc.	
	slope, m:	1.787	3	5.45	232	
	intercept, b:	-6.737	0	3.77	43	
	N: 7		-3	2.09	8	
	E[Conc]:	50.7	Parameter Estimates			
	SD[Conc]:	31	from LN regression			
	CV[Conc]:	0.61	update graph label			

	dZn	N: 7				max r2 0.973
	Concentration	**i**	**1-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
9-Sep-99	22	1	0.0862	-1.364	3.091	0.969
9-Aug-99	26	2	0.2241	-0.758	3.258	0.961
15-Jul-99	40	3	0.3621	-0.353	3.689	0.939
15-Jul-99	40	4	0.5000	0.000	3.689	0.973
17-Jun-99	48	5	0.6379	0.353	3.871	0.948
13-May-99	71	6	0.7759	0.758	4.263	
15-Apr-99	92	7	0.9138	1.364	4.522	

update for EV, CV:

dZn		**SR65**			7,249	7250
LN Analysis		**dZn**			0.77	0.768
Discharge, Q		**Q Data, EV=7250 cfs CV=0.768**				
Avg:	**7,249**	**Q Data-based LN**				
SD:	**5,567**	**u**	**lnQ**	**Q**		
CV:	**0.77**	3	10.7	44336		
Min:	**444**	0	8.66	5749		
Max:	**15,000**	-3	6.61	746		
Median:	**4,300**					

	0.900	0.9
	12631.3	12600
u=mLn(Q)+b:	2.66	2.66

update for r2, EV, CV: **r2=0.9, EV=12600 cfs CV=2.66; max r2=0.90**

r2 u,lnQ:	0.900	u	lnQ	Q
slope, m:	0.692	3	12.73	339014
intercept, b:	-5.817	0	8.40	4451
N: 7		-3	4.07	58
E[Q]:	12631.3	Parameter Estimates		
SD[Q]:	33543	from LN regression		
CV[Q]:	2.66	update graph label		

N: 7

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.900 r2 forward
update and rank for new data						
9-Sep-99	444	1	0.0862	-1.364	6.096	0.900
9-Aug-99	1900	2	0.2241	-0.758	7.550	0.886
15-Jul-99	4300	3	0.3621	-0.353	8.366	0.824
15-Jul-99	4300	4	0.5000	0.000	8.366	0.730
15-Apr-99	10000	5	0.6379	0.353	9.210	0.673
17-Jun-99	14800	6	0.7759	0.758	9.602	
13-May-99	15000	7	0.9138	1.364	9.616	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR65	**Date:**	21-Jul-00
Chemical:	tCd	**Analyst:**	J.Johnston
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load					
Avg:	36,265	10,000	#DIV/0!	#DIV/0!			#DIV/0!	#DIV/0!	#DIV/0!
SD:	0	0	#DIV/0!	#DIV/0!			#DIV/0!	#DIV/0!	#DIV/0!
CV:	0.00	0.00	#DIV/0!	#DIV/0!					
Min:	36,265	10,000	0	0.0			#DIV/0!	0.00	0.00
Max:	36,265	10,000	0	0			#DIV/0!	0.00	0.00
Median:	36,265	10,000	#NUM!	#NUM!			#DIV/0!	#NUM!	#NUM!

tCd	SR65		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b		
#DIV/0!		update r2	#DIV/0!	#DIV/0!		r2:	#DIV/0!	#DIV/0!		
r2 Q,[COC]:	#DIV/0!	[tCd]	Q			m:	#DIV/0!	#DIV/0!		
slope, m:	#DIV/0!	#DIV/0!	10000.0			b:	#DIV/0!	#DIV/0!		
intercept, b:	#DIV/0!	#DIV/0!	10000.0							
N: 0		#DIV/0!	10000							
#DIV/0!			update r2	#DIV/0!	#DIV/0!					
r2 lnQ,ln[COC]:	#DIV/0!	ln[tCd]	ln Q	[tCd]	Q					
slope, m:	#DIV/0!	#DIV/0!	9.21	#DIV/0!	10,000					
intercept, b:	#DIV/0!	#DIV/0!	9.21	#DIV/0!	10,000					
N: 0		#DIV/0!	9.21	#DIV/0!	10,000					

									for graph	
								tCd	0	
N= 1								SR65		
	Sampling	Q	tCd	tCd	Ln	Ln	Ln	Standardized Values		
	Date	Discharge	Concentration	Load	Q	tCd	tCd	= (x - Avg)/SD		
update for new data		cfs	ug/L	lbs/day		Conc.	Load	Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	*15-Apr-99*	*10000*			9.21			#DIV/0!		

tCd

Concentration over time analysis

	tCd	SR65	
LnConc.=mTime+b All data r2, m:			
	Time	**Ln[COC]**	**[COC]**
first:	15-Apr-99	#DIV/0!	#DIV/0!
mid:	15-Apr-99	#DIV/0!	#DIV/0!
last:	15-Apr-99	#DIV/0!	#DIV/0!
LnConc.=mTime+b >'96 r2, m:			
	0-Jan-00	0.00	1
	15-Apr-99	0.00	1

Load over time analysis

	tCd	SR65	
LnLoad=mTime+b All data r2, m:			
	Time	**LnLoad**	**Load**
first:	15-Apr-99	#DIV/0!	#DIV/0!
mid:	15-Apr-99	#DIV/0!	#DIV/0!
last:	15-Apr-99	#DIV/0!	#DIV/0!
LnLoad=mTime+b >'96 r2, m:			
	0-Jan-00	0.00	1
	15-Apr-99	0.00	1

max r2: #DIV/0!

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
#DIV/0!	#DIV/0!	#DIV/0!

r2 Slope, m

Concentration over time

#DIV/0!	#DIV/0!
0.000	**0.00000**

Load over time

#DIV/0!	#DIV/0!
0.000	**0.00000**

max r2: #DIV/0!

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

tCd		**SR65**		
LN Analysis		**tCd**		
Load		######		
Avg:	#DIV/0!	**Load Data-based LN**		
SD:	#DIV/0!	**u**	**ln tCd Load**	**tCd Load**
CV:	#DIV/0!	3	#DIV/0!	#DIV/0!
Min:	**0.0**	0	#DIV/0!	#DIV/0!
Max:	**0**	-3	#DIV/0!	#DIV/0!
Median:	#NUM!			
		######	#DIV/0!	
		######	#DIV/0!	

u=mLn{Load}+ b:

update for r2, EV, CV:	#DIV/0!						
	r2 u,lnLoad:	######	**u**	**lnLoad**	**Load**		
	slope, m:	######	3	#DIV/0!	#DIV/0!		
	intercept, b:	######	0	#DIV/0!	#DIV/0!		
	N:	0	-3	#DIV/0!	#DIV/0!		
	E[Load]:	###### Parameter Estimates				#DIV/0!	#DIV/0!
	SD[Load]:	###### from LN regression				#DIV/0!	#DIV/0!
	CV[Load]:	###### update graph label				#DIV/0!	#DIV/0!
						max r2	
	tCd	N: 1				0.000	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**	
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**	
	Ranked						
update and rank for new data							
15-Apr-99		1	0.5000	0.000			

update for EV, CV:

tCd		**SR65**		#DIV/0!	#DIV/0!
LN Analysis		**tCd**		#DIV/0!	#DIV/0!
Concentration		#DIV/0!			
Avg:	#DIV/0!	**Data-based LN**			
SD:	#DIV/0!	u	ln[tCd]	[tCd]	
CV:	#DIV/0!	3	#DIV/0!	#DIV/0!	
Min:	0	0	#DIV/0!	#DIV/0!	
Max:	0	-3	#DIV/0!	#DIV/0!	
Median:	#NUM!				

					#DIV/0!	#DIV/0!
	u=mLn{Conc.}+b:				#DIV/0!	#DIV/0!
update for r2, EV, CV.	#DIV/0!				#DIV/0!	#DIV/0!
	r2 u,lnConc:	#DIV/0!	u	lnConc.	Conc.	
	slope, m:	#DIV/0!	3	#DIV/0!	#DIV/0!	
	intercept, b:	#DIV/0!	0	#DIV/0!	#DIV/0!	
	N:	0	-3	#DIV/0!	#DIV/0!	
	E[Conc]:	#DIV/0!	Parameter Estimates			
	SD[Conc]:	#DIV/0!	from LN regression			
	CV[Conc]:	#DIV/0!	update graph label			

						max r2
	tCd	N: 1				0.000
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
15-Apr-99		1	0.5000	0.000		

		update for EV, CV:				
tCd		SR65			10,000	10000
LN Analysis		tCd			0.00	0
Discharge, Q		Q Data, EV=10000 cfs CV=0				
Avg:	10,000	Q Data-based LN				
SD:	0	u	lnQ	Q		
CV:	0.00	3	9.2	10000		
Min:	10,000	0	9.21	10000		
Max:	10,000	-3	9.21	10000		
Median:	10,000					
					#DIV/0!	#DIV/0!
					#DIV/0!	#DIV/0!
	u=mLn(Q)+b:				#DIV/0!	#DIV/0!
update for r2, EV, CV:	#DIV/0!					
	r2 u,lnQ:	######	u	lnQ	Q	
	slope, m:	######	3	#DIV/0!	#DIV/0!	
	intercept, b:	######	0	#DIV/0!	#DIV/0!	
	N:	1	-3	#DIV/0!	#DIV/0!	
	E[Q]:	###### Parameter Estimates				
	SD[Q]:	###### from LN regression				
	CV[Q]:	###### update graph label				

Date	Q Discharge cfs Ranked	N: 1 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 #DIV/0! r2 forward
update and rank for new data						
15-Apr-99	*10000*	1	0.5000	0.000	9.210	#DIV/0!

Secondary Scale For LN graphs

n	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR65	**Date:**	14-Jul-00
Chemical:	tPb	**Analyst:**	J. Johnston
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	36,342	7,249	2	125	0.00	0.00	0.00
SD:	47	5,567	1	141	1.00	1.00	1.00
CV:	0.00	0.77	0.67	1.13			
Min:	36,265	444	1	1.6	-1.22	-1.03	-0.87
Max:	36,412	15,000	5	404	1.39	1.96	1.98
Median:	36,356	4,300	1	28	-0.53	-0.67	-0.69

tPb SR65			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.854)		update r2	0.85	0.854	r2:	0.645	0.757
r2 Q,[COC]:	0.85	[tPb]	Q		m:	-95.5079	-0.02179
slope, m:	0.0	1	444.0		b:	3478156	800.26
intercept, b:	0.4	2	7249.1				
N: 7		4	15000				
LnConc. = mLn(Q)+b (r2=0.835)		update r2		0.84	0.835		
r2 lnQ,ln[COC]:	0.84	ln[tPb]	ln Q	[tPb]	Q		
slope, m:	0.52	-0.64	6.10	1	444		
intercept, b:	-3.81	0.81	8.89	2	7,249		
N: 7		1.18	9.62	3	15,000		

N= 7								tPb SR65	for graph 0	
	Sampling Date	Q Discharge	tPb Concentration	tPb Load	Ln Q	Ln tPb Conc.	Ln tPb Load	Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	15-Apr-99	10000	3	161.4	9.21	1.10	5.08	0.49	0.58	0.26
USGS	13-May-99	15000	5	403.5	9.62	1.61	6.00	1.39	1.96	1.98
USGS	17-Jun-99	14800	3	238.9	9.60	1.10	5.48	1.36	0.58	0.81
USGS	15-Jul-99	4300	1.2	27.8	8.37	0.18	3.32	-0.53	-0.67	-0.69
USGS	15-Jul-99	4300	1.2	27.8	8.37	0.18	3.32	-0.53	-0.67	-0.69
USGS	9-Aug-99	1900	1.1	11.2	7.55	0.10	2.42	-0.96	-0.74	-0.80
USGS	9-Sep-99	444	0.67	1.6	6.10	-0.40	0.47	-1.22	-1.03	-0.87

tPb

Concentration over time analysis r2 Slope, m

	tPb	SR65		Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.810	-0.01280
	Time	Ln[COC]	[COC]		
first:	15-Apr-99	1.53	5		
mid:	15-Jul-99	0.37	1		
last:	9-Sep-99	-0.35	1		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

Load over time analysis

	tPb	SR65		Load over time	
	LnLoad=mTime+b All data r2, m:			0.808	-0.03459
	Time	LnLoad	Load		
first:	15-Apr-99	6.38	588		
mid:	15-Jul-99	3.23	25		
last:	9-Sep-99	1.29	4		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

	max r2: 0.930			max r2: 0.981		
	Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.810	-0.01280	465.89	0.808	-0.03459	1260.92
	0.930	-0.01737	631.89	0.960	-0.04819	1755.40
	0.850	-0.01584	576.16	0.977	-0.05665	2063.05
	0.906	-0.01002	364.48	0.981	-0.05012	1825.70
	0.899	-0.01063	386.61	0.979	-0.05142	1872.99

update for EV, CV:

tPb		**SR65**		
LN Analysis		**tPb**		
Load		**Load Data, EV=125 lbs/day CV=1.13**		
Avg:	125	**Load Data-based LN**		
SD:	141	u	ln tPb Load	tPb Load
CV:	1.13	3	7.1	1256
Min:	1.6	0	4.41	83
Max:	404	-3	1.69	5.4
Median:	28			
		125	125	
		1.13	1.13	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.945, EV=434lbs/day CV=10.4; max r2=0.99**

r2 u,lnLoad:	0.945	u	lnLoad	Load		
slope, m:	0.462	3	10.23	27608		
intercept, b:	-1.721	0	3.73	42		
N:	7	-3	-2.77	0.1		
E[Load]:	434.3	Parameter Estimates			0.945	0.945
SD[Load]:	4513	from LN regression			434.3	434
CV[Load]:	10.39	update graph label			10.4	10.4
					max r2	
	tPb	N: 7			0.999	
	Load	i	i-3/8 / N+1/4	u	Ln	r2
Date	lbs/day	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
9-Sep-99	1.6	1	0.0862	-1.364	0.470	0.945
9-Aug-99	11.2	2	0.2241	-0.758	2.420	0.921
15-Jul-99	27.8	3	0.3621	-0.353	3.324	0.871
15-Jul-99	27.8	4	0.5000	0.000	3.324	0.803
15-Apr-99	161.4	5	0.6379	0.353	5.084	0.999
17-Jun-99	238.9	6	0.7759	0.758	5.476	
13-May-99	403.5	7	0.9138	1.364	6.000	

update for EV, CV:

tPb		**SR65**	2	2.17
LN Analysis		**tPb**	0.67	0.668

Concentration

Conc. Data, EV=2.17 ug/L CV=0.668

		Data-based LN		
Avg:	2	u	ln[tPb]	[tPb]
SD:	1	3	2.4	11
CV:	0.67	0	0.59	2
Min:	1	-3	-1.23	0
Max:	5			
Median:	1			

					0.921	0.921
	u=m.Ln{Conc.}+b:				2.4	2.41
update for r2, EV, CV:	**r2=0.921, EV=2.41 ug/L CV=0.965; max r2=0.92**				0.965	0.965
	r2 u,lnConc:	0.921	u	lnConc.	Conc.	
	slope, m:	1.232	3	2.99	20	
	intercept, b:	-0.681	0	0.55	2	
	N:	7	-3	-1.88	0	
	E[Conc]:	2.4	Parameter Estimates			
	SD[Conc]:	2	from LN regression			
	CV[Conc]:	0.97	update graph label			

	tPb	N: 7				max r2 0.921
	Concentration	**i**	**1-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
9-Sep-99	0.67	1	0.0862	-1.364	-0.400	0.921
9-Aug-99	1.1	2	0.2241	-0.758	0.095	0.884
15-Jul-99	1.2	3	0.3621	-0.353	0.182	0.881
15-Jul-99	1.2	4	0.5000	0.000	0.182	0.824
15-Apr-99	3	5	0.6379	0.353	1.099	0.841
17-Jun-99	3	6	0.7759	0.758	1.099	
13-May-99	5	7	0.9138	1.364	1.609	

update for EV, CV:

tPb		SR65			7,249	7250
LN Analysis		tPb			0.77	0.768
Discharge, Q		Q Data, EV=7250 cfs CV=0.768				
Avg:	7,249	Q Data-based LN				
SD:	5,567	u	lnQ	Q		
CV:	0.77	3	10.7	44336		
Min:	444	0	8.66	5749		
Max:	15,000	-3	6.61	746		
Median:	4,300					

					0.900	0.9
					12631.3	12600
u=mLn{Q}+b:					2.66	2.66

update for r2, EV, CV: **r2=0.9, EV=12600 cfs CV=2.66; max r2=0.90**

r2 u,lnQ:	0.900	u	lnQ	Q
slope, m:	0.692	3	12.73	339014
intercept, b:	-5.817	0	8.40	4451
N: 7		-3	4.07	58
E[Q]:	12631.3	Parameter Estimates		
SD[Q]:	33543	from LN regression		
CV[Q]:	2.66	update graph label		

	Q	N: 7				max r2 0.900
	Discharge	i	i-3/8 / N+1/4	u	Ln	r2
Date	cfs	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
9-Sep-99	444	1	0.0862	-1.364	6.096	0.900
9-Aug-99	1900	2	0.2241	-0.758	7.550	0.886
15-Jul-99	4300	3	0.3621	-0.353	8.366	0.824
15-Jul-99	4300	4	0.5000	0.000	8.366	0.730
15-Apr-99	10000	5	0.6379	0.353	9.210	0.673
17-Jun-99	14800	6	0.7759	0.758	9.602	
13-May-99	15000	7	0.9138	1.364	9.616	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. *see comment*

Station: SR65 **Date:** 14-Jul-00
Chemical: tZn **Analyst:** T Johnston
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,354	6,791	45	2,127		0.00	0.00	0.00
SD:	38	5,890	18	2,323		1.00	1.00	1.00
CV:	0.00	0.87	0.40	1.09				
Min:	36,293	444	24	56.4		-1.08	-1.20	-0.89
Max:	36,412	15,000	80	6,456		1.39	1.97	1.86
Median:	36,356	4,300	42	972		-0.42	-0.17	-0.50

tZn	SR65		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b	
Conc. = mQ+b (r2=0.744)		update r2	0.74	0.744		r2:	0.840	0.912	
r2 Q,[COC]:	0.74	[tZn]	Q			m:	-143.4720	-0.03082	
slope, m:	0.0	28	444.0			b:	5222619	1128.74	
intercept, b:	27.3	45	6790.7						
N: 6		66	15000						
LnConc. = mLn{Q}+b (r2=0.862)			update r2	0.86	0.862				
r2 lnQ,ln[COC]:	0.86	ln[tZn]	ln Q	[tZn]	Q				
slope, m:	0.29	3.11	6.10	22	444				
intercept, b:	1.36	3.89	8.82	49	6,791				
N: 6		4.12	9.62	62	15,000				

N= 6

update for new data	Sampling Date	Q Discharge cfs	tZn Concentration ug/L	tZn Load lbs/day	Ln Q	Ln tZn Conc.	Ln tZn Load	tZn SR65 Standardized Values = (x - Avg)/SD Q	Conc	Load	for graph tZn 0
DATA		x-axis		y-axis	x-axis	y-axis	y-axis				
USGS	13-May-99	15000	80	6456.0	9.62	4.38	8.77	1.39	1.97	1.86	
USGS	17-Jun-99	14800	50	3981.2	9.60	3.91	8.29	1.36	0.28	0.80	
USGS	15-Jul-99	4300	42	971.6	8.37	3.74	6.88	-0.42	-0.17	-0.50	
USGS	15-Jul-99	4300	42	971.6	8.37	3.74	6.88	-0.42	-0.17	-0.50	
USGS	9-Aug-99	1900	32.1	328.1	7.55	3.47	5.79	-0.83	-0.72	-0.77	
USGS	9-Sep-99	444	23.6	56.4	6.10	3.16	4.03	-1.08	-1.20	-0.89	

tZn

Concentration over time analysis

	tZn	SR65		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.989	-0.00995
	Time	Ln[COC]	[COC]		
first:	13-May-99	4.34	77		
mid:	15-Jul-99	3.72	41		
last:	9-Sep-99	3.16	24		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

Load over time analysis

	tZn	SR65		Load over time	
	LnLoad=mTime+b All data r2, m:			0.955	-0.04077
	Time	LnLoad	Load		
first:	13-May-99	9.27	10,664		
mid:	15-Jul-99	6.71	818		
last:	9-Sep-99	4.42	83		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

	max r2:	1.000		max r2:	1.000	
	Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.989	-0.00995	365.34	0.955	-0.04077	1488.85
	0.984	-0.00923	339.32	0.997	-0.05004	1826.21
	1.000	-0.01032	378.89	0.995	-0.05042	1840.11
	0.999	-0.01028	377.43	0.994	-0.05107	1863.80
	1.000	-0.00992	364.47	1.000	-0.05682	2072.93

update for EV, CV:

tZn — **SR65**

LN Analysis — **tZn**

Load — **Load Data, EV=2130 lbs/day CV=1.09**

Load Data-based LN

		u	ln tZn Load	tZn Load
Avg:	2,127	3	9.9	20496
SD:	2,323	0	7.27	1437
CV:	1.09	-3	4.61	100.7
Min:	56.4			
Max:	6,456			
Median:	972			

2,127	2130
1.09	1.09

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.951, EV=5590lbs/day CV=6.31; max r2=0.951**

r2 u,lnLoad:	0.951	u	lnLoad	Load	
slope, m:	0.519	3	12.55	282655	
intercept, b:	-3.517	0	6.77	875	
N: 6		-3	1.00	2.7	
E[Load]:	5590.4	Parameter Estimates			0.951 / 5590.4 / 6.3
SD[Load]:	35277	from LN regression			0.951 / 5590 / 6.31
CV[Load]:	6.31	update graph label			

N: 6

Date	tZn Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.951 r2 forward
update and rank for new data						
9-Sep-99	56.4	1	0.1000	-1.282	4.032	0.951
9-Aug-99	328.1	2	0.2600	-0.643	5.793	0.936
15-Jul-99	971.6	3	0.4200	-0.202	6.879	0.882
15-Jul-99	971.6	4	0.5800	0.202	6.879	
17-Jun-99	3981.2	5	0.7400	0.643	8.289	
13-May-99	6456.0	6	0.9000	1.282	8.773	

update for EV, CV:

tZn		SR65	45	45
LN Analysis		tZn	0.40	0.395

Concentration

Conc. Data, EV=45 ug/L CV=0.395

Avg:	45
SD:	18
CV:	0.40
Min:	24
Max:	80
Median:	42

Data-based LN

u	ln[tZn]	[tZn]
3	4.9	131
0	3.73	42
-3	2.59	13

				0.960	0.96
u=mLn{Conc.}+b:				46.5	46.5
update for r2, EV, CV: r2=0.96, EV=46.5 ug/L CV=0.485; max r2=0.960				0.485	0.485
r2 u,lnConc:	0.960	u	lnConc.	Conc.	
slope, m:	2.176	3	5.11	166	
intercept, b:	-8.124	0	3.73	42	
N: 6		-3	2.35	11	
E[Conc]:	46.5	Parameter Estimates			
SD[Conc]:	23	from LN regression			
CV[Conc]:	0.48	update graph label			

N: 6

Date	tZn Concentration ug/L Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.960 r2 forward
update and rank for new data						
9-Sep-99	23.6	1	0.1000	-1.282	3.161	0.960
9-Aug-99	32.1	2	0.2600	-0.643	3.469	0.925
15-Jul-99	42	3	0.4200	-0.202	3.738	0.878
15-Jul-99	42	4	0.5800	0.202	3.738	
17-Jun-99	50	5	0.7400	0.643	3.912	
13-May-99	80	6	0.9000	1.282	4.382	

update for EV, CV:

tZn		SR65			6,791	6790
LN Analysis		tZn			0.87	0.867
Discharge, Q		Q Data, EV=6790 cfs CV=0.867				
Avg:	6,791	Q Data-based LN				
SD:	5,890	u	lnQ	Q		
CV:	0.87	3	10.8	48519		
Min:	444	0	8.54	5130		
Max:	15,000	-3	6.30	542		
Median:	4,300					
					0.916	0.916
					12305.7	12300
	u=mLn{Q}+b:				3.00	3

update for r2, EV, CV: **r2=0.916, EV=12300 cfs CV=3; max r2=0.916**

r2 u,lnQ:	0.916	u	lnQ	Q
slope, m:	0.659	3	12.82	369260
intercept, b:	-5.446	0	8.27	3890
N: 6		-3	3.71	41
E[Q]:	12305.7	Parameter Estimates		
SD[Q]:	36936	from LN regression		
CV[Q]:	3.00	update graph label		

N: 6

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.916 r2 forward
update and rank for new data						
9-Sep-99	444	1	0.1000	-1.282	6.096	0.916
9-Aug-99	1900	2	0.2600	-0.643	7.550	0.875
15-Jul-99	4300	3	0.4200	-0.202	8.366	0.770
15-Jul-99	4300	4	0.5800	0.202	8.366	
17-Jun-99	14800	5	0.7400	0.643	9.602	
13-May-99	15000	6	0.9000	1.282	9.616	

Secondary Scale For LN graphs

n	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR70	Date:	23-Jul-00
Chemical:	dCd	Analyst:	L Raschke
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	36,342	7,426	1	78	0.00	#DIV/0!	0.00
SD:	46	5,178	0	2	1.00	#DIV/0!	1.00
CV:	0.00	0.70	0.00	0.03			
Min:	36,266	1,130	1	75.9	-1.22	#DIV/0!	-1.00
Max:	36,412	14,900	1	80	1.44	#DIV/0!	1.00
Median:	36,356	4,500	1	78	-0.57	#DIV/0!	0.00

dCd	SR70		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
#DIV/0!		update r2	#DIV/0!	#DIV/0!		r2:	0.633	0.772
r2 Q,[COC]:	#DIV/0!	[dCd]	Q			m:	-88.7830	-0.01660
slope, m:	0.0	1	1130.0			b:	3233979	611.70
intercept, b:	1.0	1	7425.7					
N: 2		1	14900					
#DIV/0!			update r2	#DIV/0!	#DIV/0!			
r2 lnQ,ln[COC]:	#DIV/0!	ln[dCd]	ln Q	[dCd]	Q			
slope, m:	0.00	0.00	7.03	1	1,130			
intercept, b:	0.00	0.00	8.91	1	7,426			
N: 2		0.00	9.61	1	14,900			

N= 7

	Sampling Date	Q Discharge	dCd Concentration	dCd Load	Ln Q	Ln dCd Conc.	Ln dCd Load	dCd SR70 Standardized Values = (x - Avg)/SD		
									for graph	0
								dCd Q	dCd Conc	dCd Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	*16-Apr-99*	*10200*			9.23			0.54		
USGS	14-May-99	14100	1	75.9	9.55	0.00	4.33	1.29	#DIV/0!	-1.00
USGS	18-Jun-99	14900	1	80.2	9.61	0.00	4.38	1.44	#DIV/0!	1.00
USGS	*15-Jul-99*	*4500*			8.41			-0.57		
USGS	*15-Jul-99*	*4500*			8.41			-0.57		
USGS	*9-Aug-99*	*2650*			7.88			-0.92		
USGS	*9-Sep-99*	*1130*			7.03			-1.22		

dCd

Concentration over time analysis r2 Slope, m

dCd SR70 **Concentration over time**

LnConc.=mTime+b All data r2, m: #DIV/0! 0.00000

	Time	Ln[COC]	[COC]
first:	16-Apr-99	0.00	1
mid:	15-Jul-99	0.00	1
last:	9-Sep-99	0.00	1

LnConc.=mTime+b >'96 r2, m: 0.000 0.00000

	0-Jan-00	0.00	1
	9-Sep-99	0.00	1

Load over time analysis

dCd SR70 **Load over time**

LnLoad=mTime+b All data r2, m: 1.000 0.00158

	Time	LnLoad	Load
first:	16-Apr-99	4.28	73
mid:	15-Jul-99	4.43	84
last:	9-Sep-99	4.51	91

LnLoad=mTime+b >'96 r2, m: 0.000 0.00000

	0-Jan-00	0.00	1
	9-Sep-99	0.00	1

max r2: #DIV/0! max r2: #DIV/0!

Forward time Regression on Ln Concentration(t) **Forward time Regression on Ln Load(t)**

r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
#DIV/0!	0.00000	0.00	1.000	0.00158	-52.90
#DIV/0!	0.00000	0.00	1.000	0.00158	-52.90
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

dCd		**SR70**		
LN Analysis		**dCd**		
Load		**Load Data, EV=78 lbs/day CV=0.0276**		
Avg:	**78**	**Load Data-based LN**		
SD:	**2**	u	ln dCd Load	dCd Load
CV:	**0.03**	3	4.4	85
Min:	**75.9**	0	4.36	78
Max:	**80**	-3	4.27	71.8
Median:	**78**			
		78	78	
		0.03	0.0276	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=1, EV=71.1lbs/day CV=0.0912; max r2=0.99**

r2 u,lnLoad:	1.000	u	lnLoad	Load		
slope, m:	10.985	3	4.53	93		
intercept, b:	-46.792	0	4.26	71		
N: 2		-3	3.99	53.9		
E[Load]:	71.1	Parameter Estimates			1.000	1
SD[Load]:	6	from LN regression			71.1	71.1
CV[Load]:	0.09	update graph label			0.1	0.0912
					max r2	
	dCd	N: 7			0.000	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
9-Sep-99		1	0.0862	-1.364		
9-Aug-99		2	0.2241	-0.758		
15-Jul-99		3	0.3621	-0.353		
15-Jul-99		4	0.5000	0.000		
16-Apr-99		5	0.6379	0.353		
14-May-99	75.9	6	0.7759	0.758	4.329	
18-Jun-99	80.2	7	0.9138	1.364	4.384	

		update for EV, CV:			
dCd		SR70		1	1
LN Analysis		dCd		0.00	0
Concentration		Conc. Data, EV=1 ug/L CV=0			
Avg:	1	Data-based LN			
SD:	0	u	ln[dCd]	[dCd]	
CV:	0.00	3	0.0	1	
Min:	1	0	0.00	1	
Max:	1	-3	0.00	1	
Median:	1				

					#DIV/0!	#DIV/0!
	u=mLn(Conc.)+b:				#DIV/0!	#DIV/0!
update for r2, EV, CV:	#DIV/0!				#DIV/0!	#DIV/0!
	r2 u,lnConc:	#DIV/0!	u	lnConc.	Conc.	
	slope, m:	#DIV/0!	3	#DIV/0!	#DIV/0!	
	intercept, b:	#DIV/0!	0	#DIV/0!	#DIV/0!	
	N: 2		-3	#DIV/0!	#DIV/0!	
	E[Conc]:	#DIV/0!	Parameter Estimates			
	SD[Conc]:	#DIV/0!	from LN regression			
	CV[Conc]:	#DIV/0!	update graph label			

	dCd	N: 7				max r2 0.000
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
16-Apr-99		1	0.0862	-1.364		
15-Jul-99		2	0.2241	-0.758		
15-Jul-99		3	0.3621	-0.353		
9-Aug-99		4	0.5000	0.000		
9-Sep-99		5	0.6379	0.353		
14-May-99	1	6	0.7759	0.758	0.000	
18-Jun-99	1	7	0.9138	1.364	0.000	

update for EV, CV:

dCd		**SR70**			7,426	7430
LN Analysis		**dCd**			0.70	0.697
Discharge, Q		**Q Data, EV=7430 cfs CV=0.697**				
Avg:	**7,426**	**Q Data-based LN**				
SD:	**5,178**	**u**	**lnQ**	**Q**		
CV:	**0.70**	3	10.6	40255		
Min:	**1,130**	0	8.71	6091		
Max:	**14,900**	-3	6.83	922		
Median:	**4,500**					

	0.936	0.936
	9421.2	9420
u=mLn{Q}+b:	1.44	1.44

update for r2, EV, CV: **r2=0.936, EV=9420 cfs CV=1.44; max r2=0.98**

r2 u,lnQ:	0.936	u	lnQ	Q
slope, m:	0.944	3	11.77	128948
intercept, b:	-8.111	0	8.59	5377
N: 7		-3	5.41	224
E[Q]:	9421.2	Parameter Estimates		
SD[Q]:	13555	from LN regression		
CV[Q]:	1.44	update graph label		

N: 7

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.936 r2 forward
update and rank for new data						
9-Sep-99	*1130*	1	0.0862	-1.364	7.030	0.936
9-Aug-99	*2650*	2	0.2241	-0.758	7.882	0.898
15-Jul-99	*4500*	3	0.3621	-0.353	8.412	0.831
15-Jul-99	*4500*	4	0.5000	0.000	8.412	
16-Apr-99	*10200*	5	0.6379	0.353	9.230	
14-May-99	14100	6	0.7759	0.758	9.554	
18-Jun-99	14900	7	0.9138	1.364	9.609	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

Several values were reported at a concentration of 1 µg/L by the laboratory. Because the log of 1 is zero, use of 1 causes division by zero in the lognormal probabilistic analysis. Therefore, to perform the analyses, these values were changed to 1.01, 1.02, 1.03, etc. These changes are within the data uncertainty and have a minimal impact on estimations of concentrations and no impact on loading calculations.

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR70	**Date:**	23-Jul-00
Chemical:	dPb	**Analyst:**	L.Raschke

Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,342	7,426	1	70	0.00	#DIV/0!	0.00
SD:	46	5,178	0	11	1.00	#DIV/0!	1.00
CV:	0.00	0.70	0.00	0.16			
Min:	36,266	1,130	1	54.9	-1.22	#DIV/0!	-1.40
Max:	36,412	14,900	1	80	1.44	#DIV/0!	0.89
Median:	36,356	4,500	1	76	-0.57	#DIV/0!	0.50

dPb **SR70** **: Concentration v. Discharge, Q**

		update r2	#DIV/0!	#DIV/0!
#DIV/0!				
r2 Q,[COC]:	#DIV/0!	[tCd]	Q	
slope, m:	0.0	1	1130.0	
intercept, b:	1.0	1	7425.7	
N: 3		1	14900	

Q = mTime +b

r2:	0.633	0.772
m:	-88.7830	-0.01660
b:	3233979	611.70

LnQ = mTime +b

		update r2	#DIV/0!	#DIV/0!
#DIV/0!				
r2 lnQ,ln[COC]:	#DIV/0!	ln[tCd]	ln Q	[tCd]
slope, m:	0.00	0.00	7.03	1
intercept, b:	0.00	0.00	8.91	1
N: 3		0.00	9.61	1

								dPb SR70	for graph 0	
N= 7								**Standardized Values**		
	Sampling Date	**Q Discharge**	**dPb Concentration**	**dPb Load**	**Ln Q**	**Ln dPb Conc.**	**Ln dPb Load**	**= (x - Avg)/SD**		
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	16-Apr-99	10200	1	54.9	9.23	0.00	4.01	0.54	#DIV/0!	-1.40
USGS	14-May-99	14100	1	75.9	9.55	0.00	4.33	1.29	#DIV/0!	0.50
USGS	18-Jun-99	14900	1	80.2	9.61	0.00	4.38	1.44	#DIV/0!	0.89
USGS	*15-Jul-99*	*4500*			8.41			-0.57		
USGS	*15-Jul-99*	*4500*			8.41			-0.57		
USGS	*9-Aug-99*	*2650*			7.88			-0.92		
USGS	*9-Sep-99*	*1130*			7.03			-1.22		

dPb

Concentration over time analysis r2 Slope, m

	dPb	SR70		Concentration over time	
LnConc.=mTime+b All data r2, m:				#DIV/0!	0.00000
	Time	Ln[COC]	[COC]		
first:	16-Apr-99	0.00	1		
mid:	15-Jul-99	0.00	1		
last:	9-Sep-99	0.00	1		
LnConc.=mTime+b >'96 r2, m:				0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

Load over time analysis

	dPb	SR70		Load over time	
LnLoad=mTime+b All data r2, m:				0.809	0.00583
	Time	LnLoad	Load		
first:	16-Apr-99	4.06	58		
mid:	15-Jul-99	4.59	98		
last:	9-Sep-99	4.91	136		
LnLoad=mTime+b >'96 r2, m:				0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

	max r2: #DIV/0!			max r2: #DIV/0!		
	Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
	r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows				only on >4 data points: delete last 4 rows		
	#DIV/0!	0.00000	0.00	0.809	0.00583	-207.50
	#DIV/0!	0.00000	0.00	1.000	0.00158	-52.90
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

dPb		**SR70**		
LN Analysis		**dPb**		
Load		**Load Data, EV=70.3 lbs/day CV=0.157**		
Avg:	**70**	**Load Data-based LN**		
SD:	**11**	**u**	**ln tCd Load**	**tCd Load**
CV:	**0.16**	3	4.7	111
Min:	**54.9**	0	4.24	69
Max:	**80**	-3	3.77	43.5
Median:	**76**			
		70	70.3	
		0.16	0.157	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.768, EV=52.8lbs/day CV=0.484; max r2=0**

r2 u,lnLoad:	0.768	u	lnLoad	Load		
slope, m:	2.179	3	5.24	188		
intercept, b:	-8.413	0	3.86	47		
N:	3	-3	2.48	12.0		
E[Load]:	52.8	Parameter Estimates			0.768	0.768
SD[Load]:	26	from LN regression			52.8	52.8
CV[Load]:	0.48	update graph label			0.5	0.484
					max r2	
	dPb	N: 7			0.000	

Date	**Load lbs/day Ranked**	**i rank**	**i-3/8 / N+1/4 plotting points**	**u y-axis**	**Ln x-axis**	**r2 forward**
update and rank for new data						
9-Sep-99		1	0.0862	-1.364		
9-Aug-99		2	0.2241	-0.758		
15-Jul-99		3	0.3621	-0.353		
15-Jul-99		4	0.5000	0.000		
16-Apr-99	54.9	5	0.6379	0.353	4.005	
14-May-99	75.9	6	0.7759	0.758	4.329	
18-Jun-99	80.2	7	0.9138	1.364	4.384	

update for EV, CV:

dPb		**SR70**		1	1.02
LN Analysis		**dPb**		0.01	0.008
Concentration		**Conc. Data, EV=1.02 ug/L CV=0.008**			
Avg:	1	**Data-based LN**			
SD:	0	u	ln[tCd]	[tCd]	
CV:	0.01	3	0.0	1	
Min:	1	0	0.02	1	
Max:	1	-3	0.00	1	
Median:	1				

					0.986	0.986
	u=mLn[Conc.]+b:				1.0	1
update for r2, EV, CV:	r2=0.986, EV=1 ug/L CV=0.0194; max r2=0				0.019	0.0194
	r2 u,lnConc:	0.986	u	lnConc.	Conc.	
	slope, m:	51.570	3	0.06	1	
	intercept, b:	-0.194	0	0.00	1	
	N: 3		-3	-0.05	1	
	E[Conc]:	1.0	Parameter Estimates			
	SD[Conc]:	0	from LN regression			
	CV[Conc]:	0.02	update graph label			

	dPb	N: 7				max r2 0.000
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
sub-date and rank for new data						
15-Jul-99		1	0.0862	-1.364		
15-Jul-99		2	0.2241	-0.758		
9-Aug-99		3	0.3621	-0.353		
9-Sep-99		4	0.5000	0.000		
16-Apr-99	1.01	5	0.6379	0.353	0.010	
14-May-99	1.02	6	0.7759	0.758	0.020	
18-Jun-99	1.03	7	0.9138	1.364	0.030	

update for EV, CV:

dPb		**SR70**			7,426	7430
LN Analysis		**dPb**			0.70	0.697
Discharge, Q		**Q Data, EV=7430 cfs CV=0.697**				
Avg:	**7,426**	**Q Data-based LN**				
SD:	**5,178**	**u**	**lnQ**	**Q**		
CV:	**0.70**	3	10.6	40255		
Min:	**1,130**	0	8.71	6091		
Max:	**14,900**	-3	6.83	922		
Median:	**4,500**					

					0.936	0.936
					9421.2	9420
u=mLn(Q)+b:					1.44	1.44
update for r2, EV, CV:	**r2=0.936, EV=9420 cfs CV=1.44; max r2=0.94**					
	r2 u,lnQ:	0.936	**u**	lnQ	Q	
	slope, m:	0.944	3	11.77	128948	
	intercept, b:	-8.111	0	8.59	5377	
	N:	7	-3	5.41	224	
	E[Q]:	9421.2	Parameter Estimates			
	SD[Q]:	13555	from LN regression			
	CV[Q]:	1.44	update graph label			

	Q	N: 7				max r2 0.936
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
9-Sep-99	*1130*	1	0.0862	-1.364	7.030	0.936
9-Aug-99	*2650*	2	0.2241	-0.758	7.882	0.898
15-Jul-99	*4500*	3	0.3621	-0.353	8.412	0.831
15-Jul-99	*4500*	4	0.5000	0.000	8.412	
16-Apr-99	10200	5	0.6379	0.353	9.230	
14-May-99	14100	6	0.7759	0.758	9.554	
18-Jun-99	14900	7	0.9138	1.364	9.609	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

Several values were reported at a concentration of 1 µg/L by the laboratory. Because the log of 1 is zero, use of 1 causes division by zero in the lognormal probabilistic analysis. Therefore, to perform the analyses, these values were changed to 1.01, 1.02, 1.03, etc. These changes are within the data uncertainty and have a minimal impact on estimations of concentrations and no impact on loading calculations.

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SR70 **Date:** 20-Jul-00
Chemical: dZn **Analyst:** J.Johnston
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,342	7,426	43	2,242	0.00	0.00	0.00
SD:	46	5,178	25	2,070	1.00	1.00	1.00
CV:	0.00	0.70	0.58	0.92			
Min:	36,266	1,130	7	42.6	-1.22	-1.43	-1.06
Max:	36,412	14,900	83	5,462	1.44	1.61	1.56
Median:	36,356	4,500	36	872	-0.57	-0.27	-0.66

dZn SR70 : Concentration v. Discharge, Q

Conc. = mQ+b (r2=0.593)		update r2	0.59	0.593	Q = mTime +b		LnQ = mTime +b
r2 Q,[COC]:	0.59	[dZn]	Q		r2:	0.633	0.772
slope, m:	0.0	19	1130.0		m:	-88.7830	-0.01660
intercept, b:	15.1	43	7425.7		b:	3233979	611.70
N: 7		70	14900				
LnConc. = mLn(Q)+b (r2=0.853)		update r2	0.85	0.853			
r2 lnQ,ln[COC]:	0.85	ln[dZn]	ln Q	[dZn]	Q		
slope, m:	0.82	2.24	7.03	9	1,130		
intercept, b:	-3.52	3.78	8.91	44	7,426		
N: 7		4.35	9.61	78	14,900		

N= 7

	Sampling Date	Q Discharge	dZn Concentration	dZn Load	Ln Q	Ln dZn Conc.	Ln dZn Load	dZn SR70 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	16-Apr-99	10200	83	4554.7	9.23	4.42	8.42	0.54	1.61	1.12
USGS	14-May-99	14100	72	5461.8	9.55	4.28	8.61	1.29	1.17	1.56
USGS	18-Jun-99	14900	45	3607.3	9.61	3.81	8.19	1.44	0.09	0.66
USGS	15-Jul-99	4500	36	871.6	8.41	3.58	6.77	-0.57	-0.27	-0.66
USGS	15-Jul-99	4500	36	871.6	8.41	3.58	6.77	-0.57	-0.27	-0.66
USGS	9-Aug-99	2650	20	285.1	7.88	3.00	5.65	-0.92	-0.91	-0.95
USGS	9-Sep-99	1130	7	42.6	7.03	1.95	3.75	-1.22	-1.43	-1.06

dZn

Concentration over time analysis

	dZn	SR70		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.885	-0.01575
	Time	Ln[COC]	[COC]		
first:	16-Apr-99	4.71	111		
mid:	15-Jul-99	3.30	27		
last:	9-Sep-99	2.41	11		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

Load over time analysis

	dZn	SR70		
				Load over time
	LnLoad=mTime+b All data r2, m:			0.856	-0.03234
	Time	LnLoad	Load	
first:	16-Apr-99	9.34	11,371	
mid:	15-Jul-99	6.43	619	
last:	9-Sep-99	4.62	101	
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1	
	9-Sep-99	0.00	1	

	max r2:	0.928		max r2:	0.996	
	Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.885	-0.01575	575.87	0.856	-0.03234	1182.34
	0.907	-0.01888	689.75	0.944	-0.04209	1536.81
	0.928	-0.02324	848.42	0.996	-0.05274	1924.15

update for EV, CV:

dZn		SR70		
LN Analysis		dZn		
Load		Load Data, EV=2240 lbs/day CV=0.923		
Avg:	2,242	Load Data-based LN		
SD:	2,070	u	ln dZn Load	dZn Load
CV:	0.92	3	9.8	17371
Min:	42.6	0	7.41	1647
Max:	5,462	-3	5.05	156.2
Median:	872			
		2,242	2240	
		0.92	0.923	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.903, EV=7110lbs/day CV=7.24; max r2=0.90**

r2 u,lnLoad:	0.903	u	lnLoad	Load		
slope, m:	0.501	3	12.86	385950		
intercept, b:	-3.450	0	6.88	973		
N:	7	-3	0.90	2.5		
E[Load]:	7109.6	Parameter Estimates			0.903	0.903
SD[Load]:	51447	from LN regression			7109.6	7110
CV[Load]:	7.24	update graph label			7.2	7.24
					max r2	
	dZn	N: 7			0.903	

Date	dZn Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
9-Sep-99	42.6	1	0.0862	-1.364	3.751	0.903
9-Aug-99	285.1	2	0.2241	-0.758	5.653	0.876
15-Jul-99	871.6	3	0.3621	-0.353	6.770	0.803
15-Jul-99	871.6	4	0.5000	0.000	6.770	
18-Jun-99	3607.3	5	0.6379	0.353	8.191	
16-Apr-99	4554.7	6	0.7759	0.758	8.424	
14-May-99	5461.8	7	0.9138	1.364	8.606	

		update for EV, CV:			
dZn		*SR70*		43	42.7
LN Analysis		**dZn**		0.58	0.585
Concentration		**Conc. Data, EV=42.7 ug/L CV=0.585**			
Avg:	**43**	**Data-based LN**			
SD:	**25**	u	ln[dZn]	[dZn]	
CV:	**0.58**	3	5.2	188	
Min:	**7**	0	3.61	37	
Max:	**83**	-3	1.98	7	
Median:	**36**				

					0.905	0.905
	u=mLn{Conc.}+b:				53.1	53.1
update for r2, EV, CV:	**r2=0.905, EV=53.1 ug/L CV=1.22; max r2=0.93**				1.219	1.22
	r2 u,lnConc:	0.905	u	lnConc.	Conc.	
	slope, m:	1.048	3	6.38	590	
	intercept, b:	-3.683	0	3.52	34	
	N: 7		-3	0.65	2	
	E[Conc]:	53.1	Parameter Estimates			
	SD[Conc]:	65	from LN regression			
	CV[Conc]:	1.22	update graph label			

	dZn	N: 7				max r2 0.932
	Concentration	**i**	**1-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L Ranked**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
update and rank for new data						
9-Sep-99	7	1	0.0862	-1.364	1.946	0.905
9-Aug-99	20	2	0.2241	-0.758	2.996	0.932
15-Jul-99	36	3	0.3621	-0.353	3.584	0.913
15-Jul-99	36	4	0.5000	0.000	3.584	
18-Jun-99	45	5	0.6379	0.353	3.807	
14-May-99	72	6	0.7759	0.758	4.277	
16-Apr-99	83	7	0.9138	1.364	4.419	

update for EV, CV:

dZn		**SR70**			7,426	7430
LN Analysis		**dZn**			0.70	0.697
Discharge, Q		**Q Data, EV=7430 cfs CV=0.697**				
Avg:	**7,426**	**Q Data-based LN**				
SD:	**5,178**	**u**	lnQ	Q		
CV:	**0.70**	3	10.6	40255		
Min:	**1,130**	0	8.71	6091		
Max:	**14,900**	-3	6.83	922		
Median:	**4,500**					

	0.936	0.936
	9421.2	9420
u=mLn{Q}+b:	1.44	1.44

update for r2, EV, CV: **r2=0.936, EV=9420 cfs CV=1.44; max r2=0.94**

r2 u,lnQ:	0.936	u	lnQ	Q
slope, m:	0.944	3	11.77	128948
intercept, b:	-8.111	0	8.59	5377
N: 7		-3	5.41	224
E[Q]:	9421.2	Parameter Estimates		
SD[Q]:	13555	from LN regression		
CV[Q]:	1.44	update graph label		

	Q	N: 7				max r2 0.936
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
9-Sep-99	1130	1	0.0862	-1.364	7.030	0.936
9-Aug-99	2650	2	0.2241	-0.758	7.882	0.898
15-Jul-99	4500	3	0.3621	-0.353	8.412	0.831
15-Jul-99	4500	4	0.5000	0.000	8.412	
16-Apr-99	10200	5	0.6379	0.353	9.230	
14-May-99	14100	6	0.7759	0.758	9.554	
18-Jun-99	14900	7	0.9138	1.364	9.609	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR70	**Date:**	23-Jul-00
Chemical:	tCd	**Analyst:**	L.Raschke
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load						
Avg:	36,266	10,200	#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!	#DIV/0!
SD:	0	0	#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!	#DIV/0!
CV:	0.00	0.00	#DIV/0!	#DIV/0!						
Min:	36,266	10,200	0	0.0				#DIV/0!	0.00	0.00
Max:	36,266	10,200	0	0				#DIV/0!	0.00	0.00
Median:	36,266	10,200	#NUM!	#NUM!				#DIV/0!	#NUM!	#NUM!

tCd	**SR70**		**: Concentration v. Discharge, Q**			**Q = mTime +b**		**LnQ = mTime +b**	
#DIV/0!		update r2	**#DIV/0!**	#DIV/0!		r2:	#DIV/0!	#DIV/0!	
r2 Q,[COC]:	#DIV/0!	[tCd]	Q			m:	#DIV/0!	#DIV/0!	
slope, m:	#DIV/0!	#DIV/0!	10200.0			b:	#DIV/0!	#DIV/0!	
intercept, b:	#DIV/0!	#DIV/0!	10200.0						
N: 0		#DIV/0!	10200						
#DIV/0!			update r2	#DIV/0!	#DIV/0!				
r2 lnQ,ln[COC]:	#DIV/0!	ln[tCd]	ln Q	[tCd]	Q				
slope, m:	#DIV/0!	#DIV/0!	9.23	#DIV/0!	10,200				
intercept, b:	#DIV/0!	#DIV/0!	9.23	#DIV/0!	10,200				
N: 0		#DIV/0!	9.23	#DIV/0!	10,200				for graph
								tCd	0
N= 1								SR70	

	Sampling Date	Q Discharge	tCd Concentration	tCd Load	Ln Q	Ln tCd Conc.	Ln tCd Load	Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	*16-Apr-99*	*10200*			9.23			#DIV/0!		

tCd

Concentration over time analysis

	tCd	SR70		r2	Slope, m
	LnConc.=mTime+b All data r2, m:			**Concentration over time**	
	Time	**Ln[COC]**	**[COC]**	#DIV/0!	#DIV/0!
first:	16-Apr-99	#DIV/0!	#DIV/0!		
mid:	16-Apr-99	#DIV/0!	#DIV/0!		
last:	16-Apr-99	#DIV/0!	#DIV/0!		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	16-Apr-99	0.00	1		

Load over time analysis

	tCd	SR70		Load over time	
	LnLoad=mTime+b All data r2, m:			#DIV/0!	#DIV/0!
	Time	**LnLoad**	**Load**		
first:	16-Apr-99	#DIV/0!	#DIV/0!		
mid:	16-Apr-99	#DIV/0!	#DIV/0!		
last:	16-Apr-99	#DIV/0!	#DIV/0!		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	16-Apr-99	0.00	1		

max r2:	#DIV/0!		max r2:	#DIV/0!	
Forward time Regression on			**Forward time Regression on**		
Ln Concentration(t)			**Ln Load(t)**		
r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

tCd		**SR70**		
LN Analysis		**tCd**		
Load		######		
Avg:	#DIV/0!	**Load Data-based LN**		
SD:	#DIV/0!	**u**	**ln tCd Load**	**tCd Load**
CV:	#DIV/0!	3	#DIV/0!	#DIV/0!
Min:	**0.0**	0	#DIV/0!	#DIV/0!
Max:	**0**	-3	#DIV/0!	#DIV/0!
Median:	#NUM!			
		######	#DIV/0!	
		######	#DIV/0!	

u=mLn{Load}+ b:

update for r2, EV, CV: #DIV/0!

r2 u,lnLoad:	######	**u**	**lnLoad**	**Load**		
slope, m:	######	3	#DIV/0!	#DIV/0!		
intercept, b:	######	0	#DIV/0!	#DIV/0!		
N:	0	-3	#DIV/0!	#DIV/0!		
E[Load]:	###### Parameter Estimates				#DIV/0!	#DIV/0!
SD[Load]:	###### from LN regression				#DIV/0!	#DIV/0!
CV[Load]:	###### update graph label				#DIV/0!	#DIV/0!
					max r2	
tCd	N: 1				0.000	

Date	**Load lbs/day Ranked**	**i rank**	**i-3/8 / N+1/4 plotting points**	**u y-axis**	**Ln x-axis**	**r2 forward**
update and rank for new data						
16-Apr-99		1	0.5000	0.000		

update for EV, CV:

tCd		SR70		#DIV/0!	#DIV/0!
LN Analysis		tCd		#DIV/0!	#DIV/0!
Concentration		#DIV/0!			
Avg:	#DIV/0!	Data-based LN			
SD:	#DIV/0!	u	ln[tCd]	[tCd]	
CV:	#DIV/0!	3	#DIV/0!	#DIV/0!	
Min:	0	0	#DIV/0!	#DIV/0!	
Max:	0	-3	#DIV/0!	#DIV/0!	
Median:	#NUM!				

u=mLn[Conc.]+b:

update for r2, EV, CV: #DIV/0!

r2 u,lnConc:	#DIV/0!	u	lnConc.	Conc.	
slope, m:	#DIV/0!	3	#DIV/0!	#DIV/0!	
intercept, b:	#DIV/0!	0	#DIV/0!	#DIV/0!	
N:	0	-3	#DIV/0!	#DIV/0!	
E[Conc]:	#DIV/0!	Parameter Estimates			
SD[Conc]:	#DIV/0!	from LN regression			
CV[Conc]:	#DIV/0!	update graph label			

#DIV/0! #DIV/0!
#DIV/0! #DIV/0!
#DIV/0! #DIV/0!

	tCd	N: 1				max r2 0.000
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
16-Apr-99		1	0.5000	0.000		

update for EV, CV:

tCd		*SR70*			10,200	10200
LN Analysis		**tCd**			0.00	0
Discharge, Q		**Q Data, EV=10200 cfs CV=0**				
Avg:	**10,200**	**Q Data-based LN**				
SD:	**0**	**u**	lnQ	Q		
CV:	**0.00**	3	9.2	10200		
Min:	**10,200**	0	9.23	10200		
Max:	**10,200**	-3	9.23	10200		
Median:	**10,200**					
					#DIV/0!	#DIV/0!
					#DIV/0!	#DIV/0!
	u=mLn{Q}+b:				#DIV/0!	#DIV/0!

update for r2, EV, CV: #DIV/0!

r2 u,lnQ:	######	**u**	lnQ	Q	
slope, m:	######	3	#DIV/0!	#DIV/0!	
intercept, b:	######	0	#DIV/0!	#DIV/0!	
N:	1	-3	#DIV/0!	#DIV/0!	
E[Q]:	###### Parameter Estimates				
SD[Q]:	###### from LN regression				
CV[Q]:	###### update graph label				

	Q	N: 1				max r2 #DIV/0!
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
16-Apr-99	*10200*	1	0.5000	0.000	9.230	#DIV/0!

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR70	Date:	23-Jul-00
Chemical:	tPb	Analyst:	L Raschke
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	36,342	7,426	2	110	0.00	0.00	0.00
SD:	46	5,178	1	115	1.00	1.00	1.00
CV:	0.00	0.70	0.68	1.05			
Min:	36,266	1,130	1	3.1	-1.22	-1.08	-0.93
Max:	36,412	14,900	4	303	1.44	1.63	1.67
Median:	36,356	4,500	1	24	-0.57	-0.70	-0.75

tPb	SR70		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.912)		update r2	0.91	0.912	r2:	0.633	0.772
r2 Q,[COC]:	0.91	[tPb]	Q		m:	-88.7830	-0.01660
slope, m:	0.0	0	1130.0		b:	3233979	611.70
intercept, b:	0.1	2	7425.7				
N: 7		4	14900				
LnConc. = mLn(Q)+b (r2=0.932)			update r2	0.93	0.932		
r2 lnQ,ln[COC]:	0.93	ln[tPb]	ln Q	[tPb]	Q		
slope, m:	0.81	-0.88	7.03	0	1,130		
intercept, b:	-6.58	0.65	8.91	2	7,426		
N: 7		1.21	9.61	3	14,900		

N= 7

	Sampling Date	Q Discharge	tPb Concentration	tPb Load	Ln Q	Ln tPb Conc.	Ln tPb Load	tPb SR70 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	9-Aug-99	2650	0.81	11.5	7.88	-0.21	2.45	-0.92	-0.85	-0.85
USGS	9-Sep-99	1130	0.51	3.1	7.03	-0.67	1.13	-1.22	-1.08	-0.93
USGS	14-May-99	14100	4	303.4	9.55	1.39	5.72	1.29	1.63	1.67
USGS	15-Jul-99	4500	1	24.2	8.41	0.00	3.19	-0.57	-0.70	-0.75
USGS	15-Jul-99	4500	1	24.2	8.41	0.00	3.19	-0.57	-0.70	-0.75
USGS	16-Apr-99	10200	3	164.6	9.23	1.10	5.10	0.54	0.85	0.47
USGS	18-Jun-99	14900	3	240.5	9.61	1.10	5.48	1.44	0.85	1.13

for graph 0

tPb

Concentration over time analysis r2 Slope, m

	tPb	SR70		Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.845	-0.01458
	Time	Ln[COC]	[COC]		
first:	16-Apr-99	1.49	4		
mid:	15-Jul-99	0.18	1		
last:	9-Sep-99	-0.64	1		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

Load over time analysis

	tPb	SR70		Load over time	
	LnLoad=mTime+b All data r2, m:			0.819	-0.03118
	Time	LnLoad	Load		
first:	16-Apr-99	6.12	455		
mid:	15-Jul-99	3.31	27		
last:	9-Sep-99	1.57	5		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

max r2: 0.845 max r2: 0.819

Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.845	-0.01458	530.41	0.819	-0.03118	1136.88
0.826	-0.01449	526.99	0.797	-0.03088	1125.96
0.671	-0.01376	500.45	0.574	-0.02393	873.80

update for EV, CV:

tPb		**SR70**		
LN Analysis		**tPb**		
Load		**Load Data, EV=110 lbs/day CV=1.05**		
Avg:	**110**	**Load Data-based LN**		
SD:	**115**	**u**	**ln tPb Load**	**tPb Load**
CV:	**1.05**	3	6.9	1006
Min:	**3.1**	0	4.33	76
Max:	**303**	-3	1.75	5.8
Median:	**24**			
		110	110	
		1.05	1.05	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.93, EV=278lbs/day CV=6.45; max r2=0.93**

r2 u,lnLoad:	0.930	u	lnLoad	Load		
slope, m:	0.516	3	9.56	14214		
intercept, b:	-1.936	0	3.75	43		
N:	7	-3	-2.06	0.1		
E[Load]:	277.8	Parameter Estimates			0.930	0.93
SD[Load]:	1792	from LN regression			277.8	278
CV[Load]:	6.45	update graph label			6.5	6.45
					max r2	

	tPb	N: 7					
	Load	i	i-3/8 / N+1/4	u	Ln	max r2 0.930 r2	
Date	lbs/day Ranked	rank	plotting points	y-axis	x-axis	forward	
update and rank for new data							
9-Sep-99	3.1	1	0.0862	-1.364	1.132	0.930	
9-Aug-99	11.5	2	0.2241	-0.758	2.447	0.879	
15-Jul-99	24.2	3	0.3621	-0.353	3.187	0.810	
15-Jul-99	24.2	4	0.5000	0.000	3.187		
16-Apr-99	164.6	5	0.6379	0.353	5.104		
18-Jun-99	240.5	6	0.7759	0.758	5.483		
14-May-99	303.4	7	0.9138	1.364	5.715		

update for EV, CV:

tPb	SR70		2	1.9
LN Analysis	tPb		0.68	0.676

Concentration — Conc. Data, EV=1.9 ug/L CV=0.676

		Data-based LN		
Avg:	2			
SD:	1	u	ln[tPb]	[tPb]
CV:	0.68	3	2.3	10
Min:	1	0	0.46	2
Max:	4	-3	-1.38	0
Median:	1			

u=mLn{Conc.}+b:

update for r2, EV, CV: r2=0.904, EV=2.21 ug/L CV=1.13; max r2=0.90

			0.904	0.904
			2.2	2.21
			1.126	1.13
r2 u,lnConc:	0.904	u	lnConc.	Conc.
slope, m:	1.105	3	3.10	22
intercept, b:	-0.426	0	0.39	1
N: 7		-3	-2.33	0
E[Conc]:	2.2	Parameter Estimates		
SD[Conc]:	2	from LN regression		
CV[Conc]:	1.13	update graph label		

	tPb	N: 7				max r2 0.904
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
9-Sep-99	0.51	1	0.0862	-1.364	-0.673	0.904
9-Aug-99	0.81	2	0.2241	-0.758	-0.211	0.856
15-Jul-99	1	3	0.3621	-0.353	0.000	0.802
15-Jul-99	1	4	0.5000	0.000	0.000	
16-Apr-99	3	5	0.6379	0.353	1.099	
18-Jun-99	3	6	0.7759	0.758	1.099	
14-May-99	4	7	0.9138	1.364	1.386	

		update for EV, CV:				
tPb		**SR70**			7,426	7430
LN Analysis		**tPb**			0.70	0.697
Discharge, Q		**Q Data, EV=7430 cfs CV=0.697**				
Avg:	**7,426**	**Q Data-based LN**				
SD:	**5,178**	**u**	**lnQ**	**Q**		
CV:	**0.70**	3	10.6	40255		
Min:	**1,130**	0	8.71	6091		
Max:	**14,900**	-3	6.83	922		
Median:	**4,500**					
					0.936	0.936
					9421.2	9420
	u=mLn{Q}+b:				1.44	1.44

update for r2, EV, CV: **r2=0.936, EV=9420 cfs CV=1.44; max r2=0.94**

r2 u,lnQ:	0.936	u	lnQ	Q
slope, m:	0.944	3	11.77	128948
intercept, b:	-8.111	0	8.59	5377
N:	7	-3	5.41	224
E[Q]:	9421.2	Parameter Estimates		
SD[Q]:	13555	from LN regression		
CV[Q]:	1.44	update graph label		

	Q	N: 7				max r2 0.936
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
9-Sep-99	1130	1	0.0862	-1.364	7.030	0.936
9-Aug-99	2650	2	0.2241	-0.758	7.882	0.898
15-Jul-99	4500	3	0.3621	-0.353	8.412	0.831
15-Jul-99	4500	4	0.5000	0.000	8.412	
16-Apr-99	10200	5	0.6379	0.353	9.230	
14-May-99	14100	6	0.7759	0.758	9.554	
18-Jun-99	14900	7	0.9138	1.364	9.609	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR70	**Date:**	23-Jul-00
Chemical:	tZn	**Analyst:**	L Raschke
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	36,355	6,963	39	1,941	0.00	0.00	0.00
SD:	37	5,457	19	1,986	1.00	1.00	1.00
CV:	0.00	0.78	0.50	1.02			
Min:	36,294	1,130	8	49.2	-1.07	-1.57	-0.95
Max:	36,412	14,900	70	5,310	1.45	1.61	1.70
Median:	36,356	4,500	40	971	-0.45	0.08	-0.49

tZn SR70			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.744)		update r2	**0.74**	0.744	r2:	0.801	0.916
r2 Q,[COC]:	0.74	[tZn]	Q		m:	-131.1089	-0.02321
slope, m:	0.0	21	1130.0		b:	4773385	852.29
intercept, b:	17.2	39	6963.3				
N: 6		63	14900				
LnConc. = mLn(Q)+b (r2=0.859)		update r2	0.86	0.859			
r2 lnQ,ln[COC]:	0.86	ln[tZn]	ln Q	[tZn]	Q		
slope, m:	0.71	2.43	7.03	11	1,130		
intercept, b:	-2.58	3.73	8.85	41	6,963		
N: 6		4.27	9.61	71	14,900		

N= 6

	Sampling Date	Q Discharge	tZn Concentration	tZn Load	Ln Q	Ln tZn Conc.	Ln tZn Load	tZn SR70 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	14-May-99	14100	70	5310.1	9.55	4.25	8.58	1.31	1.61	1.70
USGS	18-Jun-99	14900	50	4008.1	9.61	3.91	8.30	1.45	0.58	1.04
USGS	15-Jul-99	4500	40.1	970.8	8.41	3.69	6.88	-0.45	0.08	-0.49
USGS	15-Jul-99	4500	40.1	970.8	8.41	3.69	6.88	-0.45	0.08	-0.49
USGS	9-Aug-99	2650	23.5	335.0	7.88	3.16	5.81	-0.79	-0.78	-0.81
USGS	9-Sep-99	1130	8.1	49.2	7.03	2.09	3.90	-1.07	-1.57	-0.95

tZn

Concentration over time analysis r2 Slope, m

	tZn	SR70		Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.875	-0.01745
	Time	Ln[COC]	[COC]		
first:	14-May-99	4.52	92		
mid:	15-Jul-99	3.44	31		
last:	9-Sep-99	2.46	12		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

Load over time analysis

	tZn	SR70		Load over time	
	LnLoad=mTime+b All data r2, m:			0.931	-0.04066
	Time	LnLoad	Load		
first:	14-May-99	9.19	9,800		
mid:	15-Jul-99	6.67	788		
last:	9-Sep-99	4.39	81		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	9-Sep-99	0.00	1		

max r2: 0.922 max r2: 0.995

Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.875	-0.01745	637.84	0.931	-0.04066	1484.91
0.922	-0.02258	824.57	0.995	-0.05208	1900.31

update for EV, CV:

tZn		**SR70**		
LN Analysis		**tZn**		
Load		**Load Data, EV=1940 lbs/day CV=1.02**		
Avg:	**1,941**	**Load Data-based LN**		
SD:	**1,986**	**u**	**ln tZn Load**	**tZn Load**
CV:	**1.02**	3	9.8	17187
Min:	**49.2**	0	7.21	1356
Max:	**5,310**	-3	4.67	107.0
Median:	**971**			
		1,941	1940	
		1.02	1.02	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.931, EV=5520lbs/day CV=6.56; max r2=0.93**

r2 u,lnLoad:	0.931	u	lnLoad	Load	
slope, m:	0.514	3	12.56	284751	
intercept, b:	-3.456	0	6.72	832	
N:	6	-3	0.89	2.4	
E[Load]:	5516.8	Parameter Estimates			0.931 0.931
SD[Load]:	36177	from LN regression			5516.8 5520
CV[Load]:	6.56	update graph label			6.6 6.56

	tZn	N: 6				max r2 0.931
	Load	i	i-3/8 / N+1/4	u	Ln	r2
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
9-Sep-99	49.2	1	0.1000	-1.282	3.897	0.931
9-Aug-99	335.0	2	0.2600	-0.643	5.814	0.915
15-Jul-99	970.8	3	0.4200	-0.202	6.878	
15-Jul-99	970.8	4	0.5800	0.202	6.878	
18-Jun-99	4008.1	5	0.7400	0.643	8.296	
14-May-99	5310.1	6	0.9000	1.282	8.577	

update for EV, CV:

tZn		SR70		39	38.6
LN Analysis		tZn		0.50	0.504
Concentration		Conc. Data, EV=38.6 ug/L CV=0.504			
Avg:	39	Data-based LN			
SD:	19	u	ln[tZn]	[tZn]	
CV:	0.50	3	5.0	144	
Min:	8	0	3.54	34	
Max:	70	-3	2.11	8	
Median:	40				

					0.869	0.869
u=mLn(Conc.)+b:					47.6	47.6
update for r2, EV, CV:	r2=0.869, EV=47.6 ug/L CV=1.1; max r2=0.92				1.102	1.1
	r2 u,lnConc:	0.869	u	lnConc.	Conc.	
	slope, m:	1.122	3	6.14	464	
	intercept, b:	-3.888	0	3.47	32	
	N:	6	-3	0.79	2	
	E[Conc]:	47.6	Parameter Estimates			
	SD[Conc]:	52	from LN regression			
	CV[Conc]:	1.10	update graph label			

	tZn	N: 6				max r2 0.919
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
9-Sep-99	8.1	1	0.1000	-1.282	2.092	0.869
9-Aug-99	23.5	2	0.2600	-0.643	3.157	0.919
15-Jul-99	40.1	3	0.4200	-0.202	3.691	
15-Jul-99	40.1	4	0.5800	0.202	3.691	
18-Jun-99	50	5	0.7400	0.643	3.912	
14-May-99	70	6	0.9000	1.282	4.248	

update for EV, CV:

tZn		**SR70**			6,963	6960
LN Analysis		**tZn**			0.78	0.784
Discharge, Q		**Q Data, EV=6960 cfs CV=0.784**				
Avg:	**6,963**	**Q Data-based LN**				
SD:	**5,457**	u	lnQ	Q		
CV:	**0.78**	3	10.7	43693		
Min:	**1,130**	0	8.61	5481		
Max:	**14,900**	-3	6.53	687		
Median:	**4,500**					
					0.934	0.934
					9027.5	9030
	u=mLn(Q)+b:				1.58	1.58

update for r2, EV, CV: **r2=0.934, EV=9030 cfs CV=1.58; max r2=0.93**

r2 u,lnQ:	0.934	u	lnQ	Q
slope, m:	0.895	3	11.84	138262
intercept, b:	-7.588	0	8.48	4833
N: 6		-3	5.13	169
E[Q]:	9027.5	Parameter Estimates		
SD[Q]:	14243	from LN regression		
CV[Q]:	1.58	update graph label		

N: 6

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.934 r2 forward
update and rank for new data						
9-Sep-99	1130	1	0.1000	-1.282	7.030	0.934
9-Aug-99	2650	2	0.2600	-0.643	7.882	0.877
15-Jul-99	4500	3	0.4200	-0.202	8.412	
15-Jul-99	4500	4	0.5800	0.202	8.412	
14-May-99	14100	5	0.7400	0.643	9.554	
18-Jun-99	14900	6	0.9000	1.282	9.609	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SR75 **Date:** 24-Jul-00
Chemical: dCd **Analyst:** L.Raschke
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,298	8,457	1	94		0.00	#DIV/0!	0.00
SD:	93	6,626	0	17		1.00	#DIV/0!	1.00
CV:	0.00	0.78	0.00	0.18				
Min:	36,087	1,000	1	79.1		-1.13	#DIV/0!	-0.90
Max:	36,411	21,900	1	118		2.03	#DIV/0!	1.39
Median:	36,320	5,730	1	86		-0.41	#DIV/0!	-0.49

dCd SR75 : Concentration v. Discharge, Q

						Q = mTime +b		LnQ = mTime +b
#DIV/0!		update r2	#DIV/0!	#DIV/0!		r2:	0.000	0.014
r2 Q,[COC]:	#DIV/0!	[dCd]	Q			m:	-0.2703	-0.00123
slope, m:	0.0	1	1000.0			b:	18270	53.28
intercept, b:	1.0	1	8457.0					
N: 3		1	21900					
#DIV/0!		update r2		#DIV/0!	#DIV/0!			
r2 lnQ,ln[COC]:	#DIV/0!	ln[dCd]	ln Q	[dCd]	Q			
slope, m:	0.00	0.00	6.91	1	1,000			
intercept, b:	0.00	0.00	9.04	1	8,457			
N: 3		0.00	9.99	1	21,900			

N= 10

	Sampling Date	Q Discharge	dCd Concentration	dCd Load	Ln Q	Ln dCd Conc.	Ln dCd Load	dCd SR75 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	19-Oct-98	2390			7.78			-0.92		
USGS	9-Feb-99	6660			8.80			-0.27		
USGS	13-Apr-99	10000			9.21			0.23		
USGS	11-May-99	16000	1	86.1	9.68	0.00	4.46	1.14	#DIV/0!	-0.49
USGS	3-Jun-99	21900	1	117.8	9.99	0.00	4.77	2.03	#DIV/0!	1.39
USGS	15-Jun-99	14700	1	79.1	9.60	0.00	4.37	0.94	#DIV/0!	-0.90
USGS	13-Jul-99	4800			8.48			-0.55		
USGS	13-Jul-99	4800			8.48			-0.55		
USGS	9-Aug-99	2320			7.75			-0.93		
USGS	8-Sep-99	1000			6.91			-1.13		

for graph 0

dCd

Concentration over time analysis

	dCd	SR75		r2	Slope, m
	LnConc.=mTime+b All data r2, m:			**Concentration over time**	
	Time	**Ln[COC]**	**[COC]**	#DIV/0!	**0.00000**
first:	19-Oct-98	0.00	1		
mid:	9-Jun-99	0.00	1		
last:	8-Sep-99	0.00	1		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

Load over time analysis

	dCd	SR75		Load over time	
	LnLoad=mTime+b All data r2, m:			**0.001**	**-0.00028**
	Time	**LnLoad**	**Load**		
first:	19-Oct-98	4.59	99		
mid:	9-Jun-99	4.53	93		
last:	8-Sep-99	4.50	90		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

	max r2: #DIV/0!			max r2: #DIV/0!		
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	#DIV/0!	0.00000	0.00	0.001	-0.00028	14.67
	#DIV/0!	0.00000	0.00	0.001	-0.00028	14.67
	#DIV/0!	0.00000	0.00	0.001	-0.00028	14.67
	#DIV/0!	0.00000	0.00	0.001	-0.00028	14.67
	#DIV/0!	0.00000	0.00	1.000	-0.03322	1211.12
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

		update for EV, CV:		
dCd		**SR75**		
LN Analysis		**dCd**		
Load		**Load Data, EV=94.3 lbs/day CV=0.179**		
Avg:	**94**	**Load Data-based LN**		
SD:	**17**	**u**	**ln dCd Load**	**dCd Load**
CV:	**0.18**	3	5.1	158
Min:	**79.1**	0	4.53	93
Max:	**118**	-3	4.00	54.6
Median:	**86**			
		94	94.3	
		0.18	0.179	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.964, EV=62.6lbs/day CV=0.504; max r2=0.99**

r2 u,lnLoad:	0.964	u	lnLoad	Load			
slope, m:	2.101	3	5.45	233			
intercept, b:	-8.453	0	4.02	56			
N:	3	-3	2.60	13.4			
E[Load]:	62.6	Parameter Estimates				0.964	0.964
SD[Load]:	32	from LN regression				62.6	62.6
CV[Load]:	0.50	update graph label				0.5	0.504
						max r2	
	dCd	N: 10				0.000	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**	
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward	
	Ranked						
update and rank for new data							
8-Sep-99		1	0.0610	-1.547			
9-Aug-99		2	0.1585	-1.000			
19-Oct-98		3	0.2561	-0.655			
13-Jul-99		4	0.3537	-0.375			
13-Jul-99		5	0.4512	-0.123			
9-Feb-99		6	0.5488	0.123			
13-Apr-99		7	0.6463	0.375			
15-Jun-99	79.1	8	0.7439	0.655	4.371		
11-May-99	86.1	9	0.8415	1.000	4.455		
3-Jun-99	117.8	10	0.9390	1.547	4.769		

		update for EV, CV:			
dCd		SR75		1	1
LN Analysis		dCd		0.00	0
Concentration		Conc. Data, EV=1 ug/L CV=0			
Avg:	1	Data-based LN			
SD:	0	u	ln[dCd]	[dCd]	
CV:	0.00	3	0.0	1	
Min:	1	0	0.00	1	
Max:	1	-3	0.00	1	
Median:	1				

					#DIV/0!	#DIV/0!
	u=m.Ln{Conc.}+b:				#DIV/0!	#DIV/0!
update for r2, EV, CV:	#DIV/0!				#DIV/0!	#DIV/0!
	r2 u,lnConc:	#DIV/0!	u	lnConc.	Conc.	
	slope, m:	#DIV/0!	3	#DIV/0!	#DIV/0!	
	intercept, b:	#DIV/0!	0	#DIV/0!	#DIV/0!	
	N: 3		-3	#DIV/0!	#DIV/0!	
	E[Conc]:	#DIV/0!	Parameter Estimates			
	SD[Conc]:	#DIV/0!	from LN regression			
	CV[Conc]:	#DIV/0!	update graph label			

	dCd	N: 10				max r2 0.000
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
19-Oct-98		1	0.0610	-1.547		
9-Feb-99		2	0.1585	-1.000		
13-Apr-99		3	0.2561	-0.655		
13-Jul-99		4	0.3537	-0.375		
13-Jul-99		5	0.4512	-0.123		
9-Aug-99		6	0.5488	0.123		
8-Sep-99		7	0.6463	0.375		
11-May-99	1	8	0.7439	0.655	0.000	
3-Jun-99	1	9	0.8415	1.000	0.000	
15-Jun-99	1	10	0.9390	1.547	0.000	

update for EV, CV:

dCd		SR75			8,457	8460
LN Analysis		dCd			0.78	0.783
Discharge, Q		Q Data, EV=8460 cfs CV=0.783				
Avg:	8,457	Q Data-based LN				
SD:	6,626	u	lnQ	Q		
CV:	0.78	3	10.9	53045		
Min:	1,000	0	8.80	6657		
Max:	21,900	-3	6.73	835		
Median:	5,730					

	0.967	0.967
	10266.8	10300
u=mLn{Q}+b:	1.46	1.46

update for r2, EV, CV: **r2=0.967, EV=10300 cfs CV=1.46; max r2=0.98**

r2 u,lnQ:	0.967	u	lnQ	Q
slope, m:	0.937	3	11.87	142713
intercept, b:	-8.122	0	8.67	5810
N: 10		-3	5.47	237
E[Q]:	10266.8	Parameter Estimates		
SD[Q]:	14958	from LN regression		
CV[Q]:	1.46	update graph label		

N: 10

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Lu x-axis	max r2 0.967 r2 forward
update and rank for new data						
8-Sep-99	1000	1	0.0610	-1.547	6.908	0.967
9-Aug-99	2320	2	0.1585	-1.000	7.749	0.954
19-Oct-98	2390	3	0.2561	-0.655	7.779	0.938
13-Jul-99	4800	4	0.3537	-0.375	8.476	0.939
13-Jul-99	4800	5	0.4512	-0.123	8.476	0.919
9-Feb-99	6660	6	0.5488	0.123	8.804	0.904
13-Apr-99	10000	7	0.6463	0.375	9.210	
15-Jun-99	14700	8	0.7439	0.655	9.596	
11-May-99	16000	9	0.8415	1.000	9.680	
3-Jun-99	21900	10	0.9390	1.547	9.994	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR75	**Date:**	24-Jul-00
Chemical:	dPb	**Analyst:**	L.Raechke
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	36,298	8,457	1	79	0.00	0.00	0.00
SD:	91	6,626	0	36	1.00	1.00	1.00
CV:	0.00	0.78	0.08	0.45			
Min:	36,087	1,000	1	35.8	-1.13	-0.50	-1.21
Max:	36,411	21,900	1	141	2.03	2.00	1.73
Median:	36,320	5,730	1	79	-0.41	-0.50	0.00

dPb	SR75		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.592)		update r2	0.59	0.592		r2:	0.000	0.014
r2 Q,[COC]:	0.59	[dPb]	Q			m:	-0.2703	-0.00123
slope, m:	0.0	1	1000.0			b:	18270	53.28
intercept, b:	0.9	1	8457.0					
N: 5		1	21900					
LnConc. = mLn(Q)+b (r2=0.427)		update r2	0.43	0.427				
r2 lnQ,ln[COC]:	0.43	ln[dPb]	ln Q	[dPb]	Q			
slope, m:	0.12	-0.26	6.91	1	1,000			
intercept, b:	-1.06	-0.01	9.04	1	8,457			
N: 5		0.10	9.99	1	21,900			

N= 10

	Sampling Date	Q Discharge	dPb Concentration	dPb Load	Ln Q	Ln dPb Conc.	Ln dPb Load	dPb SR75 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day					for graph 0	
DATA:		y-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	*19-Oct-98*	*2390*			7.78			-0.92		
USGS	9-Feb-99	6660	1	35.8	8.80	0.00	3.58	-0.27	-0.50	-1.21
USGS	13-Apr-99	10000	1	53.8	9.21	0.00	3.99	0.23	-0.50	-0.71
USGS	11-May-99	16000	1	86.1	9.68	0.00	4.46	1.14	-0.50	0.19
USGS	3-Jun-99	21900	1.2	141.4	9.99	0.18	4.95	2.03	2.00	1.73
USGS	15-Jun-99	14700	1	79.1	9.60	0.00	4.37	0.94	-0.50	0.00
USGS	*13-Jul-99*	*4800*			8.48			-0.55		
USGS	*13-Jul-99*	*4800*			8.48			-0.55		
USGS	*9-Aug-99*	*2320*			7.75			-0.93		
USGS	*8-Sep-99*	*1000*			6.91			-1.13		

dPb

Concentration over time analysis

				r2	Slope, m
	dPb	**SR75**		**Concentration over time**	
	LnConc.=mTime+b All data r2, m:			**0.154**	**0.00064**
	Time	**Ln[COC]**	**[COC]**		
first:	19-Oct-98	-0.09	1		
mid:	9-Jun-99	0.06	1		
last:	8-Sep-99	0.12	1		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

Load over time analysis

	dPb	**SR75**		**Load over time**	
	LnLoad=mTime+b All data r2, m:			**0.752**	**0.00893**
	Time	**LnLoad**	**Load**		
first:	19-Oct-98	2.56	13		
mid:	9-Jun-99	4.64	103		
last:	8-Sep-99	5.45	232		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

	max r2:	#DIV/0!		max r2:	#DIV/0!
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**	
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.154	0.00064	-23.07	0.752	0.00893	-319.67
	0.154	0.00064	-23.07	0.752	0.00893	-319.67
	0.138	0.00122	-44.30	0.444	0.00953	-341.54
	0.032	0.00106	-38.31	0.002	0.00078	-23.64
	1.000	-0.01519	551.92	1.000	-0.04841	1763.04
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

dPb		**SR75**		
LN Analysis		**dPb**		
Load		**Load Data, EV=79.2 lbs/day CV=0.453**		
Avg:	**79**	**Load Data-based LN**		
SD:	**36**	u	ln dPb Load	dPb Load
CV:	**0.45**	3	5.6	264
Min:	**35.8**	0	4.28	72
Max:	**141**	-3	2.98	19.8
Median:	**79**			
		79	79.2	
		0.45	0.453	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.948, EV=55.5lbs/day CV=1.22; max r2=0.95**

r2 u,lnLoad:	0.948	u	lnLoad	Load		
slope, m:	1.049	3	6.42	616		
intercept, b:	-3.737	0	3.56	35		
N:	5	-3	0.70	2.0		
E[Load]:	55.5	Parameter Estimates			0.948	0.948
SD[Load]:	68	from LN regression			55.5	55.5
CV[Load]:	1.22	update graph label			1.2	1.22
					max r2	
	dPb	**N: 10**			0.948	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
8-Sep-99		1	0.0610	-1.547		
9-Aug-99		2	0.1585	-1.000		
19-Oct-98		3	0.2561	-0.655		
13-Jul-99		4	0.3537	-0.375		
13-Jul-99		5	0.4512	-0.123		
9-Feb-99	35.8	6	0.5488	0.123	3.579	0.948
13-Apr-99	53.8	7	0.6463	0.375	3.985	
15-Jun-99	79.1	8	0.7439	0.655	4.371	
11-May-99	86.1	9	0.8415	1.000	4.455	
3-Jun-99	141.4	10	0.9390	1.547	4.951	

		update for EV, CV:			
dPb		SR75		1	1.04
LN Analysis		dPb		0.08	0.0769
Concentration		Conc. Data, EV=1.04 ug/L CV=0.0769			
Avg:	1	Data-based LN			
SD:	0	u	ln[dPb]	[dPb]	
CV:	0.08	3	0.3	1	
Min:	1	0	0.04	1	
Max:	1	-3	-0.19	1	
Median:	1				

					0.656	0.656
	u=mLn[Conc.]+b:				0.9	0.922
update for r2, EV, CV:	r2=0.656, EV=0.922 ug/L CV=0.182; max r2=0.66				0.182	0.182
	r2 u,lnConc:	0.656	u	lnConc.	Conc.	
	slope, m:	5.530	3	0.45	2	
	intercept, b:	0.538	0	-0.10	1	
	N: 5		-3	-0.64	1	
	E[Conc]:	0.9	Parameter Estimates			
	SD[Conc]:	0	from LN regression			
	CV[Conc]:	0.18	update graph label			

	dPb	N: 10				max r2 0.656
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
19-Oct-98		1	0.0610	-1.547		
13-Jul-99		2	0.1585	-1.000		
13-Jul-99		3	0.2561	-0.655		
9-Aug-99		4	0.3537	-0.375		
8-Sep-99		5	0.4512	-0.123		
9-Feb-99	1	6	0.5488	0.123	0.000	0.656
13-Apr-99	1	7	0.6463	0.375	0.000	
11-May-99	1	8	0.7439	0.655	0.000	
15-Jun-99	1	9	0.8415	1.000	0.000	
3-Jun-99	1.2	10	0.9390	1.547	0.182	

update for EV, CV:

dPb		**SR75**			8,457	8460
LN Analysis		**dPb**			0.78	0.783
Discharge, Q		**Q Data, EV=8460 cfs CV=0.783**				
Avg:	**8,457**	**Q Data-based LN**				
SD:	**6,626**	**u**	lnQ	Q		
CV:	**0.78**	3	10.9	53045		
Min:	**1,000**	0	8.80	6657		
Max:	**21,900**	-3	6.73	835		
Median:	**5,730**					

					0.967	0.967
					10266.8	10300
u=mLn(Q)+b:					1.46	1.46
update for r2, EV, CV:	**r2=0.967, EV=10300 cfs CV=1.46; max r2=0.97**					
	r2 u,lnQ:	0.967	u	lnQ	Q	
	slope, m:	0.937	3	11.87	142713	
	intercept, b:	-8.122	0	8.67	5810	
	N: 10		-3	5.47	237	
	E[Q]:	10266.8	Parameter Estimates			
	SD[Q]:	14958	from LN regression			
	CV[Q]:	1.46	update graph label			

						max r2 0.967
	Q	N: 10				
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
8-Sep-99	*1000*	1	0.0610	-1.547	6.908	0.967
9-Aug-99	*2320*	2	0.1585	-1.000	7.749	0.954
19-Oct-98	*2390*	3	0.2561	-0.655	7.779	0.938
13-Jul-99	*4800*	4	0.3537	-0.375	8.476	0.939
13-Jul-99	*4800*	5	0.4512	-0.123	8.476	0.919
9-Feb-99	6660	6	0.5488	0.123	8.804	0.904
13-Apr-99	10000	7	0.6463	0.375	9.210	
15-Jun-99	14700	8	0.7439	0.655	9.596	
11-May-99	16000	9	0.8415	1.000	9.680	
3-Jun-99	21900	10	0.9390	1.547	9.994	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR75	Date:	14-Jul-00
Chemical:	dZn	Analyst:	J Johnston
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	36,286	9,286	48	2,772		0.00	0.00	0.00
SD:	87	6,474	21	2,217		1.00	1.00	1.00
CV:	0.00	0.70	0.43	0.80				
Min:	36,087	2,320	20	249.6		-1.08	-1.34	-1.14
Max:	36,381	21,900	84	6,026		1.95	1.72	1.47
Median:	36,314	6,660	45	2,472		-0.41	-0.15	-0.14

dZn SR75			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.256)		update r2	0.26	0.256	r2:	0.032	0.039
r2 Q,[COC]:	0.26		[dZn]	Q	m:	13.3884	0.00175
slope, m:	0.0		37	2320.0	b:	-476520	-54.70
intercept, b:	32.9		48	9285.6			
N: 9			69	21900			
LnConc. = mLn(Q)+b (r2=0.589)			update r2	0.59	0.589		
r2 lnQ,ln[COC]:	0.59		ln[dZn]	ln Q	[dZn]	Q	
slope, m:	0.46		3.25	7.75	26	2,320	
intercept, b:	-0.35		3.90	9.14	49	9,286	
N: 9			4.30	9.99	73	21,900	

N= 9

								dZn SR75	for graph 0	
	Sampling Date	Q Discharge	dZn Concentration	dZn Load	Ln Q	Ln dZn Conc.	Ln dZn Load	Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	19-Oct-98	2390	24	308.6	7.78	3.18	5.73	-1.07	-1.15	-1.11
USGS	9-Feb-99	6660	69	2472.3	8.80	4.23	7.81	-0.41	1.00	-0.14
USGS	13-Apr-99	10000	84	4519.2	9.21	4.43	8.42	0.11	1.72	0.79
USGS	11-May-99	16000	70	6025.6	9.68	4.25	8.70	1.04	1.05	1.47
USGS	3-Jun-99	21900	51	6008.9	9.99	3.93	8.70	1.95	0.14	1.46
USGS	15-Jun-99	14700	45	3558.9	9.60	3.81	8.18	0.84	-0.15	0.35
USGS	13-Jul-99	4800	35	903.8	8.48	3.56	6.81	-0.69	-0.63	-0.84
USGS	13-Jul-99	4800	35	903.8	8.48	3.56	6.81	-0.69	-0.63	-0.84
USGS	9-Aug-99	2320	20	249.6	7.75	3.00	5.52	-1.08	-1.34	-1.14

dZn

Concentration over time analysis

	dZn	SR75		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.008**	**-0.00046**
	Time	**Ln[COC]**	**[COC]**		
first:	19-Oct-98	3.86	48		
mid:	3-Jun-99	3.76	43		
last:	9-Aug-99	3.73	42		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Aug-99	0.00	1		

Load over time analysis

	dZn	SR75			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.009**	**0.00129**
	Time	**LnLoad**	**Load**		
first:	19-Oct-98	7.15	1,278		
mid:	3-Jun-99	7.45	1,711		
last:	9-Aug-99	7.53	1,866		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Aug-99	0.00	1		

	max r2:	0.963		max r2:	1.000
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**	
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.008	-0.00046	20.62	0.009	0.00129	-39.31
	0.725	-0.00688	253.57	0.380	-0.01202	443.97
	0.963	-0.01157	424.25	0.767	-0.02639	966.24
	0.962	-0.01282	469.49	0.933	-0.03812	1392.52
	0.935	-0.01320	483.24	1.000	-0.04778	1743.70

update for EV, CV:

dZn		**SR75**		
LN Analysis		**dZn**		
Load		**Load Data, EV=2770 lbs/day CV=0.8**		
Avg:	**2,772**	**Load Data-based LN**		
SD:	**2,217**	u	ln dZn Load	dZn Load
CV:	**0.80**	3	9.8	17848
Min:	**249.6**	0	7.68	2165
Max:	**6,026**	-3	5.57	262.7
Median:	**2,472**			
		2,772	2770	
		0.80	0.8	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.909, EV=4310lbs/day CV=2.41; max r2=0.91**

r2 u,lnLoad:	0.909	u	lnLoad	Load			
slope, m:	0.722	3	11.56	105312			
intercept, b:	-5.348	0	7.41	1650			
N: 9		-3	3.25	25.8			
E[Load]:	4307.6	Parameter Estimates				0.909	0.909
SD[Load]:	10389	from LN regression				4307.6	4310
CV[Load]:	2.41	update graph label				2.4	2.41
						max r2	
	dZn	N: 9				0.909	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**	
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward	
	Ranked						
update and rank for new data							
9-Aug-99	**249.6**	1	0.0676	-1.494	5.520	0.909	
19-Oct-98	**308.6**	2	0.1757	-0.932	5.732	0.864	
13-Jul-99	**903.8**	3	0.2838	-0.572	6.807	0.830	
13-Jul-99	**903.8**	4	0.3919	-0.274	6.807	0.751	
9-Feb-99	**2472.3**	5	0.5000	0.000	7.813	0.837	
15-Jun-99	**3558.9**	6	0.6081	0.274	8.177		
13-Apr-99	**4519.2**	7	0.7162	0.572	8.416		
3-Jun-99	**6008.9**	8	0.8243	0.932	8.701		
11-May-99	**6025.6**	9	0.9324	1.494	8.704		

update for EV, CV:

dZn		**SR75**	48	48.1
LN Analysis		**dZn**	0.43	0.435

Concentration

Conc. Data, EV=48.1 ug/L CV=0.435

Avg:	**48**
SD:	**21**
CV:	**0.43**
Min:	**20**
Max:	**84**
Median:	**45**

Data-based LN

u	ln[dZn]	[dZn]
3	5.0	154
0	3.79	44
-3	2.54	13

			0.966	*0.966*
u=mLn{Conc.}+b:			50.1	50.1
update for r2, EV, CV:	**r2=0.966, EV=50.1 ug/L CV=0.578; max r2=0.97**		0.578	0.578
r2 u,lnConc:	0.966	u	lnConc.	Conc.
slope, m:	1.863	3	5.38	217
intercept, b:	-7.023	0	3.77	43
N: 9		-3	2.16	*9*
E[Conc]:	50.1	Parameter Estimates		
SD[Conc]:	29	from LN regression		
CV[Conc]:	0.58	update graph label		

	dZn	N: 9				max r2 0.966
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
9-Aug-99	20	1	0.0676	-1.494	2.996	0.966
19-Oct-98	24	2	0.1757	-0.932	3.178	0.948
13-Jul-99	35	3	0.2838	-0.572	3.555	0.936
13-Jul-99	35	4	0.3919	-0.274	3.555	0.915
15-Jun-99	45	5	0.5000	0.000	3.807	0.901
3-Jun-99	51	6	0.6081	0.274	3.932	
9-Feb-99	69	7	0.7162	0.572	4.234	
11-May-99	70	8	0.8243	0.932	4.248	
13-Apr-99	84	9	0.9324	1.494	4.431	

		update for EV, CV:				
dZn		SR75			9,286	9290
LN Analysis		dZn			0.70	0.697
Discharge, Q		Q Data, EV=9290 cfs CV=0.697				
Avg:	9,286	Q Data-based LN				
SD:	6,474	u	lnQ	Q		
CV:	0.70	3	10.8	50332		
Min:	2,320	0	8.94	7617		
Max:	21,900	-3	7.05	1153		
Median:	6,660					

					0.955	0.955
					10516.0	10500
u=mLn(Q)+b:					1.10	1.1
update for r2, EV, CV:	r2=0.955, EV=10500 cfs CV=1.1; max r2=0.96					
	r2 u,lnQ:	0.955	u	lnQ	Q	
	slope, m:	1.121	3	11.54	102619	
	intercept, b:	-9.936	0	8.86	7064	
	N: 9		-3	6.19	486	
	E[Q]:	10516.0	Parameter Estimates			
	SD[Q]:	11595	from LN regression			
	CV[Q]:	1.10	update graph label			

	Q	N: 9				max r2 0.955
	Discharge	i	i-3/8 / N+1/4	u	Ln	r2
Date	cfs	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
9-Aug-99	2320	1	0.0676	-1.494	7.749	0.955
19-Oct-98	2390	2	0.1757	-0.932	7.779	0.950
13-Jul-99	4800	3	0.2838	-0.572	8.476	0.943
13-Jul-99	4800	4	0.3919	-0.274	8.476	0.927
9-Feb-99	6660	5	0.5000	0.000	8.804	0.909
13-Apr-99	10000	6	0.6081	0.274	9.210	
15-Jun-99	14700	7	0.7162	0.572	9.596	
11-May-99	16000	8	0.8243	0.932	9.680	
3-Jun-99	21900	9	0.9324	1.494	9.994	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR75	Date:	24-Jul-00
Chemical:	tCd	Analyst:	L.Raschke
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load					
Avg:	36,183	6,350	#DIV/0!	#DIV/0!			0.00	#DIV/0!	#DIV/0!
SD:	73	3,114	#DIV/0!	#DIV/0!			1.00	#DIV/0!	#DIV/0!
CV:	0.00	0.49	#DIV/0!	#DIV/0!					
Min:	36,087	2,390	0	0.0			-1.27	0.00	0.00
Max:	36,263	10,000	0	0			1.17	0.00	0.00
Median:	36,200	6,660	#NUM!	#NUM!			0.10	#NUM!	#NUM!

tCd	SR75		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b		
#DIV/0!		update r2	#DIV/0!	#DIV/0!		r2:	0.992	0.993		
r2 Q,[COC]:	#DIV/0!	[tCd]	Q			m:	42.5932	0.00824		
slope, m:	#DIV/0!	#DIV/0!	2390.0			b:	-1534812	-289.67		
intercept, b:	#DIV/0!	#DIV/0!	6350.0							
N: 0		#DIV/0!	10000							
#DIV/0!			update r2	#DIV/0!	#DIV/0!					
r2 lnQ,ln[COC]:	#DIV/0!	ln[tCd]	ln Q	#DIV/0!	Q					
slope, m:	#DIV/0!	#DIV/0!	7.78	#DIV/0!	2,390					
intercept, b:	#DIV/0!	#DIV/0!	8.76	#DIV/0!	6,350					
N: 0		#DIV/0!	9.21	#DIV/0!	10,000					for graph
								tCd		0
N= 3								SR75		

	Sampling Date	Q Discharge	tCd Concentration	tCd Load	Ln Q	Ln tCd Conc.	Ln tCd Load	Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	*19-Oct-98*	*2390*			7.78			-1.27		
USGS	*9-Feb-99*	*6660*			8.80			0.10		
USGS	*13-Apr-99*	*10000*			9.21			1.17		

tCd

Concentration over time analysis

	tCd	SR75	
	LnConc.=mTime+b All data r2, m:		
	Time	**Ln[COC]**	**[COC]**
first:	19-Oct-98	#DIV/0!	#DIV/0!
mid:	9-Feb-99	#DIV/0!	#DIV/0!
last:	13-Apr-99	#DIV/0!	#DIV/0!
	LnConc.=mTime+b >'96 r2, m:		
	0-Jan-00	0.00	1
	13-Apr-99	0.00	1

r2	Slope, m
Concentration over time	
#DIV/0!	#DIV/0!
0.000	**0.00000**

Load over time analysis

	tCd	SR75	
	LnLoad=mTime+b All data r2, m:		
	Time	**LnLoad**	**Load**
first:	19-Oct-98	#DIV/0!	#DIV/0!
mid:	9-Feb-99	#DIV/0!	#DIV/0!
last:	13-Apr-99	#DIV/0!	#DIV/0!
	LnLoad=mTime+b >'96 r2, m:		
	0-Jan-00	0.00	1
	13-Apr-99	0.00	1

Load over time	
#DIV/0!	#DIV/0!
0.000	**0.00000**

max r2:	#DIV/0!	
Forward time Regression on Ln Concentration(t)		
r2	**slope**	**intercept**
only on >4 data points: delete last 4 rows		
#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	#DIV/0!	#DIV/0!

max r2:	#DIV/0!	
Forward time Regression on Ln Load(t)		
r2	**slope**	**intercept**
only on >4 data points: delete last 4 rows		
#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

tCd		SR75		
LN Analysis		tCd		
Load		######		
Avg:	#DIV/0!	Load Data-based LN		
SD:	#DIV/0!	u	ln tCd Load	tCd Load
CV:	#DIV/0!	3	#DIV/0!	#DIV/0!
Min:	0.0	0	#DIV/0!	#DIV/0!
Max:	0	-3	#DIV/0!	#DIV/0!
Median:	#NUM!			
		######	#DIV/0!	
		######	#DIV/0!	

u=mLn{Load}+ b:

update for r2, EV, CV: #DIV/0!

r2 u,lnLoad:	######	u	lnLoad	Load		
slope, m:	######	3	#DIV/0!	#DIV/0!		
intercept, b:	######	0	#DIV/0!	#DIV/0!		
N:	0	-3	#DIV/0!	#DIV/0!		
E[Load]:	###### Parameter Estimates				#DIV/0!	#DIV/0!
SD[Load]:	###### from LN regression				#DIV/0!	#DIV/0!
CV[Load]:	###### update graph label				#DIV/0!	#DIV/0!
					max r2	
	tCd	N: 3			0.000	
	Load	i	i-3/8 / N+1/4	u	Ln	r2
Date	lbs/day	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
19-Oct-98		1	0.1923	-0.869		
9-Feb-99		2	0.5000	0.000		
13-Apr-99		3	0.8077	0.869		

update for EV, CV:

tCd		SR75		#DIV/0!	#DIV/0!
LN Analysis		tCd		#DIV/0!	#DIV/0!
Concentration		#DIV/0!			
Avg:	#DIV/0!	Data-based LN			
SD:	#DIV/0!	u	ln[tCd]	[tCd]	
CV:	#DIV/0!	3	#DIV/0!	#DIV/0!	
Min:	0	0	#DIV/0!	#DIV/0!	
Max:	0	-3	#DIV/0!	#DIV/0!	
Median:	#NUM!				

					#DIV/0!	#DIV/0!
u=mLn{Conc.}+b:					#DIV/0!	#DIV/0!
update for r2, EV, CV:	#DIV/0!				#DIV/0!	#DIV/0!
	r2 u,lnConc:	#DIV/0!	u	lnConc.	Conc.	
	slope, m:	#DIV/0!	3	#DIV/0!	#DIV/0!	
	intercept, b:	#DIV/0!	0	#DIV/0!	#DIV/0!	
	N:	0	-3	#DIV/0!	#DIV/0!	
	E[Conc]:	#DIV/0!	Parameter Estimates			
	SD[Conc]:	#DIV/0!	from LN regression			
	CV[Conc]:	#DIV/0!	update graph label			

						max r2
	tCd	N: 3				0.000
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
19-Oct-98		1	0.1923	-0.869		
9-Feb-99		2	0.5000	0.000		
13-Apr-99		3	0.8077	0.869		

update for EV, CV:

tCd		**SR75**			6,350	6350
LN Analysis		**tCd**			0.49	0.49
Discharge, Q		**Q Data, EV=6350 cfs CV=0.49**				
Avg:	**6,350**	**Q Data-based LN**				
SD:	**3,114**	u	lnQ	Q		
CV:	**0.49**	3	10.0	22955		
Min:	**2,390**	0	8.65	5701		
Max:	**10,000**	-3	7.26	1416		
Median:	**6,660**					
					0.941	0.941
					7942.5	7940
	u=mLn(Q)+b:				1.07	1.07

update for r2, EV, CV: **r2=0.941, EV=7940 cfs CV=1.07; max r2=0.98**

r2 u,lnQ:	0.941	u	lnQ	Q
slope, m:	1.144	3	11.22	74665
intercept, b:	-9.833	0	8.60	5419
N:	3	-3	5.97	393
E[Q]:	7942.5	Parameter Estimates		
SD[Q]:	8509	from LN regression		
CV[Q]:	1.07	update graph label		

	Q	N: 3				max r2 1.000
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
19-Oct-98	*2390*	1	0.1923	-0.869	7.779	0.941
9-Feb-99	*6660*	2	0.5000	0.000	8.804	1.000
13-Apr-99	*10000*	3	0.8077	0.869	9.210	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR75	**Date:**	14-Jul-00
Chemical:	tPb	**Analyst:**	J.Johnston
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,286	9,286	3	195	0.00	0.00	0.00
SD:	87	6,474	2	286	1.00	1.00	1.00
CV:	0.00	0.70	0.87	1.47			
Min:	36,087	2,320	1	12.9	-1.08	-0.69	-0.64
Max:	36,381	21,900	8	943	1.95	2.52	2.61
Median:	36,314	6,660	1	36	-0.41	-0.51	-0.56

tPb SR75			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.841)		update r2	0.84	0.841	r2:	0.032	0.039
r2 Q,[COC]:	0.84	[tPb]	Q		m:	13.3884	0.00175
slope, m:	0.0	0	2320.0		b:	-476520	-54.70
intercept, b:	-0.4	3	9285.6				
N: 9		6	21900				
LnConc. = mLn{Q}+b (r2=0.721)		update r2	0.72	0.721			
r2 lnQ,ln[COC]:	0.72	ln[tPb]	ln Q	[tPb]	Q		
slope, m:	0.77	-0.21	7.75	1	2,320		
intercept, b:	-6.16	0.85	9.14	2	9,286		
N: 9		1.51	9.99	5	21,900		

N= 9

	Sampling Date	Q Discharge	tPb Concentration	tPb Load	Ln Q	Ln tPb Conc.	Ln tPb Load	tPb SR75 Standardized Values = (x - Avg)/SD		for graph 0
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	19-Oct-98	2390	1	12.9	7.78	0.00	2.55	-1.07	-0.69	-0.64
USGS	9-Feb-99	6660	1	35.8	8.80	0.00	3.58	-0.41	-0.69	-0.56
USGS	13-Apr-99	10000	2	107.6	9.21	0.69	4.68	0.11	-0.23	-0.31
USGS	11-May-99	16000	4	344.3	9.68	1.39	5.84	1.04	0.68	0.52
USGS	3-Jun-99	21900	8	942.6	9.99	2.08	6.85	1.95	2.52	2.61
USGS	15-Jun-99	14700	3	237.3	9.60	1.10	5.47	0.84	0.22	0.15
USGS	13-Jul-99	4800	1.1	28.4	8.48	0.10	3.35	-0.69	-0.65	-0.58
USGS	13-Jul-99	4800	1.1	28.4	8.48	0.10	3.35	-0.69	-0.65	-0.58
USGS	9-Aug-99	2320	1.4	17.5	7.75	0.34	2.86	-1.08	-0.51	-0.62

tPb

Concentration over time analysis:

				r2	Slope, m
	tPb	***SR75***		**Concentration over time**	
	LnConc.=mTime+b All data r2, m:			**0.067**	**0.00206**
	Time	**Ln[COC]**	**[COC]**		
first:	19-Oct-98	0.23	1		
mid:	3-Jun-99	0.70	2		
last:	9-Aug-99	0.84	2		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Aug-99	0.00	1		

Load over time analysis

	tPb	***SR75***		**Load over time**	
	LnLoad=mTime+b All data r2, m:			**0.056**	**0.00381**
	Time	**LnLoad**	**Load**		
first:	19-Oct-98	3.52	34		
mid:	3-Jun-99	4.39	81		
last:	9-Aug-99	4.64	104		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	9-Aug-99	0.00	1		

	max r2:	0.685		max r2:	0.893
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**	
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.067	0.00206	-74.19	0.056	0.00381	-134.11
	0.000	-0.00012	5.16	0.046	-0.00526	195.56
	0.272	-0.00948	345.13	0.433	-0.02429	887.12
	0.627	-0.01969	716.24	0.790	-0.04499	1639.26
	0.685	-0.02682	975.51	0.893	-0.06140	2235.97

update for EV, CV:

tPb		**SR75**		
LN Analysis		**tPb**		
Load		**Load Data, EV=195 lbs/day CV=1.47**		
Avg:	**195**	**Load Data-based LN**		
SD:	**286**	**u**	**ln tPb Load**	**tPb Load**
CV:	**1.47**	3	7.9	2733
Min:	**12.9**	0	4.70	110
Max:	**943**	-3	1.48	4.4
Median:	**36**			
		195	195	
		1.47	1.47	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.929, EV=285lbs/day CV=3.81; max r2=0.97**

r2 u,lnLoad:	0.929	**u**	lnLoad	Load		
slope, m:	0.604	3	9.25	10376		
intercept, b:	-2.585	0	4.28	72		
N: 9		-3	-0.69	0.5		
E[Load]:	284.6	Parameter Estimates			0.929	0.929
SD[Load]:	1084	from LN regression			284.6	285
CV[Load]:	3.81	update graph label			3.8	3.81
					max r2	
	tPb	N: 9			0.966	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
19-Oct-98	**12.9**	1	0.0676	-1.494	2.554	0.929
9-Aug-99	**17.5**	2	0.1757	-0.932	2.861	0.952
13-Jul-99	**28.4**	3	0.2838	-0.572	3.347	0.954
13-Jul-99	**28.4**	4	0.3919	-0.274	3.347	0.966
9-Feb-99	**35.8**	5	0.5000	0.000	3.579	0.948
13-Apr-99	**107.6**	6	0.6081	0.274	4.678	
15-Jun-99	**237.3**	7	0.7162	0.572	5.469	
11-May-99	**344.3**	8	0.8243	0.932	5.842	
3-Jun-99	**942.6**	9	0.9324	1.494	6.849	

update for EV, CV:

tPb		**SR75**		3	2.51
LN Analysis		**tPb**		0.87	0.867
Concentration		**Conc. Data, EV=2.51 ug/L CV=0.867**			
Avg:	3	**Data-based LN**			
SD:	2	u	ln[tPb]	[tPb]	
CV:	0.87	3	2.9	18	
Min:	1	0	0.64	2	
Max:	8	-3	-1.60	0	
Median:	1				

					0.866	0.866
	u=mLn[Conc.]+b:				2.7	2.72
update for r2, EV, CV:	**r2=0.866, EV=2.72 ug/L CV=1.02; max r2=0.996**				1.023	1.02
	r2 u,lnConc:	0.866	u	lnConc.	Conc.	
	slope, m:	1.182	3	3.18	24	
	intercept, b:	-0.760	0	0.64	2	
	N: 9		-3	-1.90	0	
	E[Conc]:	3	Parameter Estimates			
	SD[Conc]:	3	from LN regression			
	CV[Conc]:	1.02	update graph label			

	tPb	N: 9				max r2 0.996
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L Ranked**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
update and rank for new data						
19-Oct-98	1	1	0.0676	-1.494	0.000	0.866
9-Feb-99	1	2	0.1757	-0.932	0.000	0.943
13-Jul-99	1.1	3	0.2838	-0.572	0.095	0.974
13-Jul-99	1.1	4	0.3919	-0.274	0.095	0.996
9-Aug-99	1.4	5	0.5000	0.000	0.336	0.995
13-Apr-99	2	6	0.6081	0.274	0.693	0.993
15-Jun-99	3	7	0.7162	0.572	1.099	0.988
11-May-99	4	8	0.8243	0.932	1.386	
3-Jun-99	8	9	0.9324	1.494	2.079	

update for EV, CV:

tPb		**SR75**			9,286	9290
LN Analysis		**tPb**			0.70	0.697
Discharge, Q		**Q Data, EV=9290 cfs CV=0.697**				
Avg:	**9,286**	**Q Data-based LN**				
SD:	**6,474**	**u**	**lnQ**	**Q**		
CV:	**0.70**	3	10.8	50332		
Min:	**2,320**	0	8.94	7617		
Max:	**21,900**	-3	7.05	1153		
Median:	**6,660**					

					0.955	0.955
					10516.0	10500
u=mLn(Q)+b:					1.10	1.1

update for r2, EV, CV: **r2=0.955, EV=10500 cfs CV=1.1; max r2=0.96**

r2 u,lnQ:	0.955	u	lnQ	Q	
slope, m:	1.121	3	11.54	102619	
intercept, b:	-9.936	0	8.86	7064	
N: 9		-3	6.19	486	
E[Q]:	10516.0	Parameter Estimates			
SD[Q]:	11595	from LN regression			
CV[Q]:	1.10	update graph label			

N: 9

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.955 r2 forward
update and rank for new data						
9-Aug-99	2320	1	0.0676	-1.494	7.749	0.955
19-Oct-98	2390	2	0.1757	-0.932	7.779	0.950
13-Jul-99	4800	3	0.2838	-0.572	8.476	0.943
13-Jul-99	4800	4	0.3919	-0.274	8.476	0.927
9-Feb-99	6660	5	0.5000	0.000	8.804	0.909
13-Apr-99	10000	6	0.6081	0.274	9.210	
15-Jun-99	14700	7	0.7162	0.572	9.596	
11-May-99	16000	8	0.8243	0.932	9.680	
3-Jun-99	21900	9	0.9324	1.494	9.994	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SR75 **Date:** 14-Jul-00

Chemical: tZn **Analyst:** J Johnston

Notes:

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,302	8,286	44	2,509		0.00	0.00	0.00
SD:	95	6,963	22	2,486		1.00	1.00	1.00
CV:	0.00	0.84	0.49	0.99				
Min:	36,087	1,000	8	43.6		-1.05	-1.66	-0.99
Max:	36,411	21,900	80	7,069		1.96	1.65	1.83
Median:	36,326	4,800	38	968		-0.50	-0.30	-0.62

tZn SR75			: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.446)		update r2	0.45	0.446	r2:	0.000	0.009
r2 Q,[COC]:	0.45	[tZn]	Q		m:	0.4680	-0.00099
slope, m:	0.0	29	1000.0		b:	-8705	44.49
intercept, b:	26.9	44	8285.6				
N: 9		72	21900				
LnConc. = mLn{Q}+b (r2=0.745)		update r2	0.75	0.745			
r2 lnQ,ln[COC]:	0.75	ln[tZn]	ln Q	[tZn] Q			
slope, m:	0.58	2.62	6.91	14 1,000			
intercept, b:	-1.42	3.86	9.02	47 8,286			
N: 9		4.43	9.99	84 21,900			

N= 9

update for new data	Sampling Date	Q Discharge cfs	tZn Concentration ug/L	tZn Load lbs/day	Ln Q	Ln tZn Conc.	Ln tZn Load	tZn SR75 for graph 0 Standardized Values = (x - Avg)/SD Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	19-Oct-98	2390	30	385.7	7.78	3.40	5.96	-0.85	-0.65	-0.85
USGS	9-Feb-99	6660	80	2866.5	8.80	4.38	7.96	-0.23	1.65	0.14
USGS	11-May-99	16000	70	6025.6	9.68	4.25	8.70	1.11	1.19	1.41
USGS	3-Jun-99	21900	60	7069.3	9.99	4.09	8.86	1.96	0.73	1.83
USGS	15-Jun-99	14700	50	3954.3	9.60	3.91	8.28	0.92	0.27	0.58
USGS	13-Jul-99	4800	37.5	968.4	8.48	3.62	6.88	-0.50	-0.30	-0.62
USGS	13-Jul-99	4800	37.5	968.4	8.48	3.62	6.88	-0.50	-0.30	-0.62
USGS	9-Aug-99	2320	23.8	297.1	7.75	3.17	5.69	-0.86	-0.94	-0.89
USGS	8-Sep-99	1000	8.1	43.6	6.91	2.09	3.77	-1.05	-1.66	-0.99

tZn

Concentration over time analysis

		r2	Slope, m
tZn	SR75	Concentration over time	
LnConc.=mTime+b All data r2, m:		0.164	-0.00280
	Time	Ln[COC]	[COC]
first:	19-Oct-98	4.22	68
mid:	15-Jun-99	3.55	35
last:	8-Sep-99	3.31	27
LnConc.=mTime+b >'96 r2, m:		0.000	0.00000
	0-Jan-00	0.00	1
	8-Sep-99	0.00	1

Load over time analysis

tZn	SR75	Load over time	
LnLoad=mTime+b All data r2, m:		0.052	-0.00379
	Time	LnLoad	Load
first:	19-Oct-98	7.81	2,471
mid:	15-Jun-99	6.91	1,000
last:	8-Sep-99	6.59	725
LnLoad=mTime+b >'96 r2, m:		0.000	0.00000
	0-Jan-00	0.00	1
	8-Sep-99	0.00	1

max r2: 0.922

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.164	-0.00280	105.17
0.701	-0.00961	352.76
0.901	-0.01696	620.01
0.921	-0.01950	712.24
0.922	-0.02144	782.94

max r2: 0.995

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.052	-0.00379	144.43
0.514	-0.01928	707.45
0.943	-0.04358	1590.89
0.995	-0.05146	1877.73
0.994	-0.05220	1904.70

update for EV, CV:

tZn		**SR75**		
LN Analysis		**tZn**		
Load		**Load Data, EV=2510 lbs/day CV=0.991**		
Avg:	**2,509**	**Load Data-based LN**		
SD:	**2,486**	**u**	**ln tZn Load**	**tZn Load**
CV:	**0.99**	3	10.0	21303
Min:	**43.6**	0	7.49	1782
Max:	**7,069**	-3	5.00	149.1
Median:	**968**			
		2,509	2510	
		0.99	0.991	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.933, EV=5980lbs/day CV=5.37; max r2=0.93**

r2 u,lnLoad:	0.933	**u**	**lnLoad**	**Load**		
slope, m:	0.543	3	12.53	275205		
intercept, b:	-3.799	0	7.00	1095		
N: 9		-3	1.47	4.4		
E[Load]:	5975.5	Parameter Estimates			0.933	0.933
SD[Load]:	32060	from LN regression			5975.5	5980
CV[Load]:	5.37	update graph label			5.4	5.37
					max r2	
	tZn	N: 9			0.933	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
8-Sep-99	**43.6**	1	0.0676	-1.494	3.775	0.933
9-Aug-99	**297.1**	2	0.1757	-0.932	5.694	0.929
19-Oct-98	**385.7**	3	0.2838	-0.572	5.955	0.898
13-Jul-99	**968.4**	4	0.3919	-0.274	6.876	0.867
13-Jul-99	**968.4**	5	0.5000	0.000	6.876	0.800
9-Feb-99	**2866.5**	6	0.6081	0.274	7.961	
15-Jun-99	**3954.3**	7	0.7162	0.572	8.283	
11-May-99	**6025.6**	8	0.8243	0.932	8.704	
3-Jun-99	**7069.3**	9	0.9324	1.494	8.864	

		update for EV, CV:			
tZn		SR75		44	44.1
LN Analysis		tZn		0.49	0.492
Concentration		Conc. Data, EV=44.1 ug/L CV=0.492			
Avg:	44	Data-based LN			
SD:	22	u	ln[tZn]	[tZn]	
CV:	0.49	3	5.1	160	
Min:	8	0	3.68	40	
Max:	80	-3	2.28	10	
Median:	38				

					0.886	0.886
u=mLn(Conc.)+b:					50.8	50.8
update for r2, EV, CV:	r2=0.886, EV=50.8 ug/L CV=0.931; max r2=0.97				0.931	0.931
r2 u,lnConc:	0.886	u	lnConc.	Conc.		
slope, m:	1.265	3	5.99	398		
intercept, b:	-4.579	0	3.62	37		
N: 9		-3	1.25	3		
E[Conc]:	50.8	Parameter Estimates				
SD[Conc]:	47	from LN regression				
CV[Conc]:	0.93	update graph label				

	tZn	N: 9				max r2 0.969
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
8-Sep-99	8.1	1	0.0676	-1.494	2.092	0.886
9-Aug-99	23.8	2	0.1757	-0.932	3.170	0.969
19-Oct-98	30	3	0.2838	-0.572	3.401	0.957
13-Jul-99	37.5	4	0.3919	-0.274	3.624	0.939
13-Jul-99	37.5	5	0.5000	0.000	3.624	0.913
15-Jun-99	50	6	0.6081	0.274	3.912	
3-Jun-99	60	7	0.7162	0.572	4.094	
11-May-99	70	8	0.8243	0.932	4.248	
9-Feb-99	80	9	0.9324	1.494	4.382	

update for EV, CV:

tZn		SR75			8,286	8290
LN Analysis		tZn			0.84	0.84
Discharge, Q		**Q Data, EV=8290 cfs CV=0.84**				
Avg:	**8,286**	**Q Data-based LN**				
SD:	**6,963**	**u**	lnQ	Q		
CV:	**0.84**	3	10.9	56841		
Min:	**1,000**	0	8.76	6343		
Max:	**21,900**	-3	6.56	708		
Median:	**4,800**					

					0.962	0.962
					10227.6	10200
u=mLn(Q)+b:					1.58	1.58

update for r2, EV, CV: **r2=0.962, EV=10200 cfs CV=1.58; max r2=0.96**

r2 u,lnQ:	0.962	u	lnQ	Q
slope, m:	0.894	3	11.96	156902
intercept, b:	-7.693	0	8.61	5470
N: 9		-3	5.25	191
E[Q]:	10227.6	Parameter Estimates		
SD[Q]:	16159	from LN regression		
CV[Q]:	1.58	update graph label		

N: 9

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.962 r2 forward
update and rank for new data						
8-Sep-99	1000	1	0.0676	-1.494	6.908	0.962
9-Aug-99	2320	2	0.1757	-0.932	7.749	0.941
19-Oct-98	2390	3	0.2838	-0.572	7.779	0.925
13-Jul-99	4800	4	0.3919	-0.274	8.476	0.899
13-Jul-99	4800	5	0.5000	0.000	8.476	0.868
9-Feb-99	6660	6	0.6081	0.274	8.804	
15-Jun-99	14700	7	0.7162	0.572	9.596	
11-May-99	16000	8	0.8243	0.932	9.680	
3-Jun-99	21900	9	0.9324	1.494	9.994	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SR80 **Date:** 19-Jul-00
Chemical: dCd **Analyst:** J.Johnston
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,343	73	1	0	0.00	#DIV/0!	0.00
SD:	50	68	0	0	1.00	#DIV/0!	1.00
CV:	0.00	0.93	0.00	0.93			
Min:	36,264	23	1	0.1	-0.74	#DIV/0!	-0.74
Max:	36,411	180	1	1	1.58	#DIV/0!	1.58
Median:	36,355	28	1	0	-0.67	#DIV/0!	-0.67

dCd SR80 : Concentration v. Discharge, Q Q = mTime +b LnQ = mTime +b

#DIV/0!		update r2	#DIV/0!	#DIV/0!	r2: 0.836	0.785
r2 Q,[COC]:	#DIV/0!	[dCd]	Q		m: -1.2243	-0.01570
slope, m:	0.0	1	23.0		b: 44568	574.54
intercept, b:	1.0	1	73.0			
N: 6		1	180			

#DIV/0!		update r2		#DIV/0!	#DIV/0!	
r2 lnQ,ln[COC]:	#DIV/0!	ln[dCd]	ln Q	[dCd]	Q	
slope, m:	0.00	0.00	3.14	1	23	
intercept, b:	0.00	0.00	4.29	1	73	
N: 6		0.00	5.19	1	180	

N= 6

	Sampling Date	Q Discharge	dCd Concentration	dCd Load	Ln Q	Ln dCd Conc.	Ln dCd Load	dCd SR80 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	14-Apr-99	180	1	1.0	5.19	0.00	-0.03	1.58	#DIV/0!	1.58
USGS	12-May-99	156	1	0.8	5.05	0.00	-0.18	1.23	#DIV/0!	1.23
USGS	14-Jul-99	23	1	0.1	3.14	0.00	-2.09	-0.74	#DIV/0!	-0.74
USGS	14-Jul-99	23	1	0.1	3.14	0.00	-2.09	-0.74	#DIV/0!	-0.74
USGS	10-Aug-99	28	1	0.2	3.33	0.00	-1.89	-0.67	#DIV/0!	-0.67
USGS	8-Sep-99	28	1	0.2	3.33	0.00	-1.89	-0.67	#DIV/0!	-0.67

dCd

Concentration over time analysis r2 Slope, m

	dCd	SR80		Concentration over time	
	LnConc.=mTime+b All data r2, m:			#DIV/0!	0.00000
	Time	Ln[COC]	[COC]		
first:	14-Apr-99	0.00	1		
mid:	14-Jul-99	0.00	1		
last:	8-Sep-99	0.00	1		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

Load over time analysis

	dCd	SR80		Load over time	
	LnLoad=mTime+b All data r2, m:			0.785	-0.01570
	Time	LnLoad	Load		
first:	14-Apr-99	-0.12	1		
mid:	14-Jul-99	-1.55	0		
last:	8-Sep-99	-2.43	0		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

max r2: #DIV/0! max r2: 0.785

Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
#DIV/0!	0.00000	0.00	0.785	-0.01570	569.31
#DIV/0!	0.00000	0.00	0.621	-0.01464	530.62

update for EV, CV:

dCd		**SR80**		
LN Analysis		**dCd**		
Load		**Load Data, EV=0.393 lbs/day CV=0.926**		
Avg:	**0**	**Load Data-based LN**		
SD:	**0**	u	ln dCd Load	dCd Load
CV:	**0.93**	3	1.1	3
Min:	**0.1**	0	-1.24	0
Max:	**1**	-3	-3.60	0.0
Median:	**0**			
		0	0.393	
		0.93	0.926	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.743, EV=0.553lbs/day CV=1.91; max r2=0.99**

r2 u,lnLoad:	0.743	u	lnLoad	Load		
slope, m:	0.806	3	2.36	11		
intercept, b:	1.098	0	-1.36	0		
N:	6	-3	-5.08	0.0		
E[Load]:	0.6	Parameter Estimates			0.743	0.743
SD[Load]:	1	from LN regression			0.6	0.553
CV[Load]:	1.91	update graph label			1.9	1.91
					max r2	
	dCd	N: 6			0.817	

Date	**Load lbs/day Ranked**	**i rank**	**i-3/8 / N+1/4 plotting points**	**u y-axis**	**Ln x-axis**	**r2 forward**
update and rank for new data						
14-Jul-99	0.1	1	0.1000	-1.282	-2.090	0.743
14-Jul-99	0.1	2	0.2600	-0.643	-2.090	0.817
10-Aug-99	0.2	3	0.4200	-0.202	-1.893	
8-Sep-99	0.2	4	0.5800	0.202	-1.893	
12-May-99	0.8	5	0.7400	0.643	-0.175	
14-Apr-99	1.0	6	0.9000	1.282	-0.032	

		update for EV, CV:			
dCd		SR80		1	1
LN Analysis		dCd		0.00	0
Concentration		Conc. Data, EV=1 ug/L CV=0			
Avg:	1	Data-based LN			
SD:	0	u	ln[dCd]	[dCd]	
CV:	0.00	3	0.0	1	
Min:	1	0	0.00	1	
Max:	1	-3	0.00	1	
Median:	1				

					#DIV/0!	#DIV/0!
	u=mLn[Conc.]+b:				#DIV/0!	#DIV/0!
update for r2, EV, CV:	#DIV/0!				#DIV/0!	#DIV/0!
	r2 u,lnConc:	#DIV/0!	u	lnConc.	Conc.	
	slope, m:	#DIV/0!	3	#DIV/0!	#DIV/0!	
	intercept, b:	#DIV/0!	0	#DIV/0!	#DIV/0!	
	N: 6		-3	#DIV/0!	#DIV/0!	
	E[Conc]:	#DIV/0!	Parameter Estimates			
	SD[Conc]:	#DIV/0!	from LN regression			
	CV[Conc]:	#DIV/0!	update graph label			

	dCd	N: 6				max r2 #DIV/0!
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
14-Apr-99	1	1	0.1000	-1.282	0.000	#DIV/0!
12-May-99	1	2	0.2600	-0.643	0.000	#DIV/0!
14-Jul-99	1	3	0.4200	-0.202	0.000	
14-Jul-99	1	4	0.5800	0.202	0.000	
10-Aug-99	1	5	0.7400	0.643	0.000	
8-Sep-99	1	6	0.9000	1.282	0.000	

update for EV, CV:

dCd		**SR80**			73	73
LN Analysis		**dCd**			0.93	0.926

Discharge, Q

Q Data, EV=73 cfs CV=0.926

Q Data-based LN

		u	lnQ	Q
Avg:	**73**	u	lnQ	Q
SD:	**68**	3	6.3	567
CV:	**0.93**	0	3.98	54
Min:	**23**	-3	1.62	5
Max:	**180**			
Median:	**28**			

	0.743	0.743
	102.8	103
u=mLn(Q)+b:	1.91	1.91

update for r2, EV, CV: **r2=0.743, EV=103 cfs CV=1.91; max r2=0.98**

r2 u,lnQ:	0.743	u	lnQ	Q
slope, m:	0.806	3	7.59	1969
intercept, b:	-3.114	0	3.86	48
N:	6	-3	0.14	1
E[Q]:	102.8	Parameter Estimates		
SD[Q]:	197	from LN regression		
CV[Q]:	1.91	update graph label		

N: 6

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.817 r2 forward
update and rank for new data						
14-Jul-99	23	1	0.1000	-1.282	3.135	0.743
14-Jul-99	23	2	0.2600	-0.643	3.135	0.817
10-Aug-99	28	3	0.4200	-0.202	3.332	
8-Sep-99	28	4	0.5800	0.202	3.332	
12-May-99	156	5	0.7400	0.643	5.050	
14-Apr-99	180	6	0.9000	1.282	5.193	

Secondary Scale For LN graphs

z	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station:	SR80	**Date:**	19-Jul-00
Chemical:	dPb	**Analyst:**	J.Johnston

Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,341	67	1	0	0.00	#DIV/0!	0.00
SD:	47	64	0	0	1.00	#DIV/0!	1.00
CV:	0.00	0.95	0.00	0.95			
Min:	36,264	23	1	0.1	-0.69	#DIV/0!	-0.69
Max:	36,411	180	1	1	1.76	#DIV/0!	1.76
Median:	36,355	28	1	0	-0.61	#DIV/0!	-0.61

dPb	SR80		.: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
#DIV/0!		update r2	#DIV/0!	#DIV/0!		r2:	0.739	0.724
r2 Q,[COC]:	#DIV/0!	[dPb]	Q			m:	-1.1708	-0.01515
slope, m:	0.0	1	23.0			b:	42617	554.29
intercept, b:	1.0	1	67.3					
N: 7		1	180					
#DIV/0!		update r2		#DIV/0!	#DIV/0!			
r2 lnQ,ln[COC]:	#DIV/0!	ln[dPb]	ln Q	[dPb]	Q			
slope, m:	0.00	0.00	3.14	1	23			
intercept, b:	0.00	0.00	4.21	1	67			
N: 7		0.00	5.19	1	180			

N= 7

								dPb SR80	for graph 0	
	Sampling Date	Q Discharge	dPb Concentration	dPb Load	Ln Q	Ln dPb Conc.	Ln dPb Load	Standardized Values = (x - Avg)/SD		
update for new data		cfs	ug/L	lbs/day				Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	14-Apr-99	180	1	1.0	5.19	0.00	-0.03	1.76	#DIV/0!	1.76
USGS	12-May-99	156	1	0.8	5.05	0.00	-0.18	1.38	#DIV/0!	1.38
USGS	16-Jun-99	33	1	0.2	3.50	0.00	-1.73	-0.53	#DIV/0!	-0.53
USGS	14-Jul-99	23	1	0.1	3.14	0.00	-2.09	-0.69	#DIV/0!	-0.69
USGS	14-Jul-99	23	1	0.1	3.14	0.00	-2.09	-0.69	#DIV/0!	-0.69
USGS	10-Aug-99	28	1	0.2	3.33	0.00	-1.89	-0.61	#DIV/0!	-0.61
USGS	8-Sep-99	28	1	0.2	3.33	0.00	-1.89	-0.61	#DIV/0!	-0.61

dPb

Concentration over time analysis

				r2	Slope, m
	dPb	SR80		Concentration over time	
	LnConc.=mTime+b All data r2, m:			#DIV/0!	0.00000
	Time	Ln[COC]	[COC]		
first:	14-Apr-99	0.00	1		
mid:	14-Jul-99	0.00	1		
last:	8-Sep-99	0.00	1		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

Load over time analysis

	dPb	SR80		Load over time	
	LnLoad=mTime+b All data r2, m:			0.724	-0.01515
	Time	LnLoad	Load		
first:	14-Apr-99	-0.25	1		
mid:	14-Jul-99	-1.63	0		
last:	8-Sep-99	-2.48	0		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

max r2: #DIV/0! max r2: 0.804

Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
#DIV/0!	0.00000	0.00	0.724	-0.01515	549.07
#DIV/0!	0.00000	0.00	0.531	-0.01288	466.44
#DIV/0!	0.00000	0.00	0.011	-0.00051	16.77
#DIV/0!	0.00000	0.00	0.804	0.00381	-140.58
#DIV/0!	0.00000	0.00	0.732	0.00347	-128.18

update for EV, CV:

dPb		**SR80**		
LN Analysis		**dPb**		
Load		**Load Data, EV=0.362 lbs/day CV=0.953**		
Avg:	**0**	**Load Data-based LN**		
SD:	**0**	u	ln dPb Load	dPb Load
CV:	**0.95**	3	1.1	3
Min:	**0.1**	0	-1.34	0
Max:	**1**	-3	-3.75	0.0
Median:	**0**			
		0	0.362	
		0.95	0.953	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.74, EV=0.465lbs/day CV=1.63; max r2=0.99**

r2 u,lnLoad:	0.740	u	lnLoad	Load		
slope, m:	0.878	3	2.00	7		
intercept, b:	1.242	0	-1.41	0		
N:	7	-3	-4.83	0.0		
E[Load]:	0.5	Parameter Estimates			0.740	0.74
SD[Load]:	1	from LN regression			0.5	0.465
CV[Load]:	1.63	update graph label			1.6	1.63
					max r2	
	dPb	N: 7			0.829	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
14-Jul-99	**0.1**	1	0.0862	-1.364	-2.090	0.740
14-Jul-99	**0.1**	2	0.2241	-0.758	-2.090	0.813
10-Aug-99	**0.2**	3	0.3621	-0.353	-1.893	0.822
8-Sep-99	**0.2**	4	0.5000	0.000	-1.893	0.829
16-Jun-99	**0.2**	5	0.6379	0.353	-1.729	0.716
12-May-99	**0.8**	6	0.7759	0.758	-0.175	
14-Apr-99	**1.0**	7	0.9138	1.364	-0.032	

update for EV, CV:

dPb		**SR80**			1	1
LN Analysis		**dPb**			0.00	0
Concentration		**Conc. Data, EV=1 ug/L CV=0**				
Avg:	1	**Data-based LN**				
SD:	0	u	ln[dPb]	[dPb]		
CV:	0.00	3	0.0	1		
Min:	1	0	0.00	1		
Max:	1	-3	0.00	1		
Median:	1					

					#DIV/0!	#DIV/0!
	u=mLn{Conc.}+b:				#DIV/0!	#DIV/0!
update for r2, EV, CV:	#DIV/0!				#DIV/0!	#DIV/0!
	r2 u,lnConc:	#DIV/0!	u	lnConc.	Conc.	
	slope, m:	#DIV/0!	3	#DIV/0!	#DIV/0!	
	intercept, b:	#DIV/0!	0	#DIV/0!	#DIV/0!	
	N: 7		-3	#DIV/0!	#DIV/0!	
	E[Conc]:	#DIV/0!	Parameter Estimates			
	SD[Conc]:	#DIV/0!	from LN regression			
	CV[Conc]:	#DIV/0!	update graph label			

	dPb	N: 7				max r2 #DIV/0!
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
14-Apr-99	1	1	0.0862	-1.364	0.000	#DIV/0!
12-May-99	1	2	0.2241	-0.758	0.000	#DIV/0!
16-Jun-99	1	3	0.3621	-0.353	0.000	#DIV/0!
14-Jul-99	1	4	0.5000	0.000	0.000	#DIV/0!
14-Jul-99	1	5	0.6379	0.353	0.000	#DIV/0!
10-Aug-99	1	6	0.7759	0.758	0.000	
8-Sep-99	1	7	0.9138	1.364	0.000	

update for EV, CV:

dPb		**SR80**			67	67.3
LN Analysis		**dPb**			0.95	0.953
Discharge, Q		**Q Data, EV=67.3 cfs CV=0.953**				
Avg:	**67**	**Q Data-based LN**				
SD:	**64**	u	lnQ	Q		
CV:	**0.95**	3	6.3	543		
Min:	**23**	0	3.89	49		
Max:	**180**	-3	1.48	4		
Median:	**28**					
					0.740	0.74
					86.4	86.4
u=mLn(Q)+b:					1.63	1.63

update for r2, EV, CV: **r2=0.74, EV=86.4 cfs CV=1.63; max r2=0.98**

r2 u,lnQ:	0.740	u	lnQ	Q
slope, m:	0.878	3	7.23	1375
intercept, b:	-3.347	0	3.81	45
N:	7	-3	0.40	1
E[Q]:	86.4	Parameter Estimates		
SD[Q]:	141	from LN regression		
CV[Q]:	1.63	update graph label		

N: 7 — max r2 0.829

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Lu x-axis	r2 forward
update and rank for new data						
14-Jul-99	23	1	0.0862	-1.364	3.135	0.740
14-Jul-99	23	2	0.2241	-0.758	3.135	0.813
10-Aug-99	28	3	0.3621	-0.353	3.332	0.822
8-Sep-99	28	4	0.5000	0.000	3.332	0.829
16-Jun-99	33	5	0.6379	0.353	3.497	0.716
12-May-99	156	6	0.7759	0.758	5.050	
14-Apr-99	180	7	0.9138	1.364	5.193	

Secondary Scale For LN graphs

n	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SR80 **Date:** 19-Jul-00
Chemical: dZn **Analyst:** J.Johnston
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,343	73	13	10		0.00	0.00	0.00
SD:	50	68	19	16		1.00	1.00	1.00
CV:	0.00	0.93	1.49	1.54				
Min:	36,264	23	1	0.1		-0.74	-0.62	-0.64
Max:	36,411	180	51	43		1.58	2.07	2.01
Median:	36,355	28	1	0		-0.67	-0.62	-0.64

dZn SR80 : Concentration v. Discharge, Q

					Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.675)		update r2	0.68	0.675	r2:	0.836	0.785
r2 Q,[COC]:	0.68		[dZn]	Q	m:	-1.2243	-0.01570
slope, m:	0.2		1	23.0	b:	44568	574.54
intercept, b:	-4.0		13	73.0			
N: 6			37	180			
LnConc. = mLn(Q)+b (r2=0.949)			update r2	0.95	0.949		
r2 lnQ,ln[COC]:	0.95		ln[dZn]	ln Q	[dZn]	Q	
slope, m:	1.80		-0.16	3.14	1	23	
intercept, b:	-5.81		1.92	4.29	7	73	
N: 6			3.55	5.19	35	180	

N= 6

	Sampling Date	Q Discharge	dZn Concentration	dZn Load	Ln Q	Ln dZn Conc.	Ln dZn Load	dZn SR80 Standardized Values = (x - Avg)/SD Q	Conc	Load	for graph 0
update for new data		cfs	ug/L	lbs/day							
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis				
USGS	14-Apr-99	180	20	19.4	5.19	3.00	2.96	1.58	0.40	0.55	
USGS	12-May-99	156	51	42.8	5.05	3.93	3.76	1.23	2.07	2.01	
USGS	14-Jul-99	23	1	0.1	3.14	0.00	-2.09	-0.74	-0.62	-0.64	
USGS	14-Jul-99	23	1	0.1	3.14	0.00	-2.09	-0.74	-0.62	-0.64	
USGS	10-Aug-99	28	1	0.2	3.33	0.00	-1.89	-0.67	-0.62	-0.64	
USGS	8-Sep-99	28	1	0.2	3.33	0.00	-1.89	-0.67	-0.62	-0.64	

dZn

Concentration over time analysis

	dZn	SR80		r2	Slope, m
	LnConc.=mTime+b All data r2, m:			0.765	-0.02870
	Time	Ln[COC]	[COC]		
first:	14-Apr-99	3.43	31		
mid:	14-Jul-99	0.82	2		
last:	8-Sep-99	-0.79	0		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

Load over time analysis

	dZn	SR80		Load over time	
	LnLoad=mTime+b All data r2, m:			0.781	-0.04440
	Time	LnLoad	Load		
first:	14-Apr-99	3.31	27		
mid:	14-Jul-99	-0.73	0		
last:	8-Sep-99	-3.22	0		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

	max r2:	#DIV/0!		max r2:	#DIV/0!	
	Forward time Regression on La Concentration(t)			Forward time Regression on La Load(t)		
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.765	-0.02870	1044.09	0.781	-0.04440	1613.40
	0.724	-0.03397	1236.04	0.692	-0.04861	1766.66
	#DIV/0!	0.00000	0.00	0.804	0.00381	-140.58
	#DIV/0!	0.00000	0.00	0.732	0.00347	-128.18
	#DIV/0!	0.00000	0.00	#DIV/0!	0.00000	-1.89

update for EV, CV:

dZn		**SR80**		
LN Analysis		**dZn**		
Load		**Load Data, EV=10.5 lbs/day CV=1.54**		
Avg:	**10**	**Load Data-based LN**		
SD:	**16**	**u**	**ln dZn Load**	**dZn Load**
CV:	**1.54**	3	5.0	155
Min:	**0.1**	0	1.74	6
Max:	**43**	-3	-1.57	0.2
Median:	**0**			

	10	10.5
	1.54	1.54

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.714, EV=506lbs/day CV=622; max r2=0.99**

r2 u,lnLoad:	0.714	u	lnLoad	Load		
slope, m:	0.279	3	10.55	38312		
intercept, b:	0.058	0	-0.21	1		
N: 6		-3	-10.97	0.0		
E[Load]:	505.6	Parameter Estimates			0.714	0.714
SD[Load]:	314600	from LN regression			505.6	506
CV[Load]:	622.19	update graph label			622.2	622
					max r2	
	dZn	**N: 6**			1.000	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
14-Jul-99	**0.1**	1	0.1000	-1.282	-2.090	0.714
14-Jul-99	**0.1**	2	0.2600	-0.643	-2.090	0.808
10-Aug-99	**0.2**	3	0.4200	-0.202	-1.893	0.834
8-Sep-99	**0.2**	4	0.5800	0.202	-1.893	0.771
14-Apr-99	**19.4**	5	0.7400	0.643	2.964	1.000
12-May-99	**42.8**	6	0.9000	1.282	3.757	

		update for EV, CV:			
dZn		SR80		13	12.5
LN Analysis		dZn		1.49	1.49
Concentration		Conc. Data, EV=12.5 ug/L CV=1.49			
Avg:	13	Data-based LN			
SD:	19	u	ln[dZn]	[dZn]	
CV:	1.49	3	5.2	178	
Min:	1	0	1.94	7	
Max:	51	-3	-1.29	0	
Median:	1				

					0.588	0.588
u=mLn(Conc.)+b:					88.6	88.6
update for r2, EV, CV:	r2=0.588, EV=88.6 ug/L CV=27.9; max r2=0.99				27.914	27.9
	r2 u,lnConc:	0.588	u	lnConc.	Conc.	
	slope, m:	-0.388	3	-6.59	0	
	intercept, b:	0.447	0	1.15	3	
	N:	6	-3	8.90	7306	
	E[Conc]:	88.6	Parameter Estimates			
	SD[Conc]:	2474	from LN regression			
	CV[Conc]:	27.91	update graph label			

	dZn	N: 6					max r2 #DIV/0!
	Concentration	i	i-3/8 / N+1/4	u	Ln		r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis		forward
update and rank for new data							
14-Apr-99	20	1	0.1000	-1.282	2.996		0.588
12-May-99	51	2	0.2600	-0.643	3.932		0.455
14-Jul-99	1	3	0.4200	-0.202	0.000		#DIV/0!
14-Jul-99	1	4	0.5800	0.202	0.000		#DIV/0!
10-Aug-99	1	5	0.7400	0.643	0.000		#DIV/0!
8-Sep-99	1	6	0.9000	1.282	0.000		

update for EV, CV:

dZn		**SR80**			73	73
LN Analysis		**dZn**			0.93	0.926
Discharge, Q		**Q Data, EV=73 cfs CV=0.926**				
Avg:	**73**	**Q Data-based LN**				
SD:	**68**	u	lnQ	Q		
CV:	**0.93**	3	6.3	567		
Min:	**23**	0	3.98	54		
Max:	**180**	-3	1.62	5		
Median:	**28**					

	0.743	0.743
	102.8	103
u=mLn(Q)+b:	1.91	1.91

update for r2, EV, CV: **r2=0.743, EV=103 cfs CV=1.91; max r2=0.82**

r2 u,lnQ:	0.743	u	lnQ	Q
slope, m:	0.806	3	7.59	1969
intercept, b:	-3.114	0	3.86	48
N:	6	-3	0.14	1
E[Q]:	102.8	Parameter Estimates		
SD[Q]:	197	from LN regression		
CV[Q]:	1.91	update graph label		

N: 6

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.817 r2 forward
update and rank for new data						
14-Jul-99	23	1	0.1000	-1.282	3.135	0.743
14-Jul-99	23	2	0.2600	-0.643	3.135	0.817
10-Aug-99	28	3	0.4200	-0.202	3.332	0.803
8-Sep-99	28	4	0.5800	0.202	3.332	0.718
12-May-99	156	5	0.7400	0.643	5.050	
14-Apr-99	180	6	0.9000	1.282	5.193	

Secondary Scale For LN graphs

u	Cumulative Frequecay secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station:	SR80	**Date:**	23-Jul-00
Chemical:	tCd	**Analyst:**	L.Raechke

Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load					
Avg:	36,264	180	#DIV/0!	#DIV/0!			#DIV/0!	#DIV/0!	#DIV/0!
SD:	0	0	#DIV/0!	#DIV/0!			#DIV/0!	#DIV/0!	#DIV/0!
CV:	0.00	0.00	#DIV/0!	#DIV/0!					
Min:	36,264	180	0	0.0			#DIV/0!	0.00	0.00
Max:	36,264	180	0	0			#DIV/0!	0.00	0.00
Median:	36,264	180	#NUM!	#NUM!			#DIV/0!	#NUM!	#NUM!

tCd	**SR80**		**: Concentration v. Discharge, Q**			**Q = mTime +b**		**LnQ = mTime +b**	
#DIV/0!		update r2	#DIV/0!	#DIV/0!		r2:	#DIV/0!	#DIV/0!	
r2 Q,[COC]:	#DIV/0!	[tCd]	Q			m:	#DIV/0!	#DIV/0!	
slope, m:	#DIV/0!	#DIV/0!	180.0			b:	#DIV/0!	#DIV/0!	
intercept, b:	#DIV/0!	#DIV/0!	180.0						
N: 0		#DIV/0!	180						
#DIV/0!			update r2	#DIV/0!	#DIV/0!				
r2 lnQ,ln[COC]:	#DIV/0!	ln[tCd]	ln Q	[tCd]	Q				
slope, m:	#DIV/0!	#DIV/0!	5.19	#DIV/0!	180				
intercept, b:	#DIV/0!	#DIV/0!	5.19	#DIV/0!	180				
N: 0		#DIV/0!	5.19	#DIV/0!	180				for graph
								tCd	0
N= 1								SR80	

	Sampling Date	Q Discharge	tCd Concentration	tCd Load	Ln Q	Ln tCd Conc.	Ln tCd Load	Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	*14-Apr-99*	*180*			5.19			#DIV/0!		

tCd

Concentration over time analysis

				r2	Slope, m
	tCd	SR80		Concentration over time	
	LnConc.=mTime+b All data r2, m:			#DIV/0!	#DIV/0!
	Time	Ln[COC]	[COC]		
first:	14-Apr-99	#DIV/0!	#DIV/0!		
mid:	14-Apr-99	#DIV/0!	#DIV/0!		
last:	14-Apr-99	#DIV/0!	#DIV/0!		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	14-Apr-99	0.00	1		

Load over time analysis

	tCd	SR88		Load over time	
	LnLoad=mTime+b All data r2, m:			#DIV/0!	#DIV/0!
	Time	LnLoad	Load		
first:	14-Apr-99	#DIV/0!	#DIV/0!		
mid:	14-Apr-99	#DIV/0!	#DIV/0!		
last:	14-Apr-99	#DIV/0!	#DIV/0!		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	14-Apr-99	0.00	1		

	max r2:	#DIV/0!		max r2:	#DIV/0!
	Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)	
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points; delete last 4 rows			only on >4 data points; delete last 4 rows	
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

tCd		*SR80*		
LN Analysis		**tCd**		
Load		######		
Avg:	#DIV/0!	**Load Data-based LN**		
SD:	#DIV/0!	**u**	**ln tCd Load**	**tCd Load**
CV:	#DIV/0!	3	#DIV/0!	#DIV/0!
Min:	0.0	0	#DIV/0!	#DIV/0!
Max:	0	-3	#DIV/0!	#DIV/0!
Median:	#NUM!			
		######	#DIV/0!	
		######	#DIV/0!	

u=mLn{Load}+ b:

update for r2, EV, CV:	#DIV/0!						
	r2 u,lnLoad:	######	**u**	**lnLoad**	**Load**		
	slope, m:	######	3	#DIV/0!	#DIV/0!		
	intercept, b:	######	0	#DIV/0!	#DIV/0!		
	N:	0	-3	#DIV/0!	#DIV/0!		
	E[Load]:	###### Parameter Estimates				#DIV/0!	#DIV/0!
	SD[Load]:	###### from LN regression				#DIV/0!	#DIV/0!
	CV[Load]:	###### update graph label				#DIV/0!	#DIV/0!
						max r2	
	tCd	N: 1				0.000	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**	
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward	
	Ranked						
update and rank for new data							
14-Apr-99		1	0.5000	0.000			

update for EV, CV:

tCd		SR80		#DIV/0!	#DIV/0!
LN Analysis		tCd		#DIV/0!	#DIV/0!
Concentration		#DIV/0!			
Avg:	#DIV/0!	Data-based LN			
SD:	#DIV/0!	u	ln[tCd]	[tCd]	
CV:	#DIV/0!	3	#DIV/0!	#DIV/0!	
Min:	0	0	#DIV/0!	#DIV/0!	
Max:	0	-3	#DIV/0!	#DIV/0!	
Median:	#NUM!				

	u=mLn(Conc.)+b:				#DIV/0!	#DIV/0!
					#DIV/0!	#DIV/0!
update for r2, EV, CV:	#DIV/0!				#DIV/0!	#DIV/0!
	r2 u,lnConc:	#DIV/0!	u	lnConc.	Conc.	
	slope, m:	#DIV/0!	3	#DIV/0!	#DIV/0!	
	intercept, b:	#DIV/0!	0	#DIV/0!	#DIV/0!	
	N:	0	-3	#DIV/0!	#DIV/0!	
	E[Conc]:	#DIV/0!	Parameter Estimates			
	SD[Conc]:	#DIV/0!	from LN regression			
	CV[Conc]:	#DIV/0!	update graph label			

	tCd	N: 1				max r2 0.000
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
14-Apr-99		1	0.5000	0.000		

update for EV, CV:

tCd		SR80			180	180
LN Analysis		tCd			0.00	0
Discharge, Q		Q Data, EV=180 cfs CV=0				
Avg:	180	Q Data-based LN				
SD:	0	u	lnQ	Q		
CV:	0.00	3	5.2	180		
Min:	180	0	5.19	180		
Max:	180	-3	5.19	180		
Median:	180					
					#DIV/0!	#DIV/0!
					#DIV/0!	#DIV/0!
	u=mLn(Q)+b:				#DIV/0!	#DIV/0!
update for r2, EV, CV:	#DIV/0!					
	r2 u,lnQ:	######	u	lnQ	Q	
	slope, m:	######	3	#DIV/0!	#DIV/0!	
	intercept, b:	######	0	#DIV/0!	#DIV/0!	
	N:	1	-3	#DIV/0!	#DIV/0!	
	E[Q]:	###### Parameter Estimates				
	SD[Q]:	###### from LN regression				
	CV[Q]:	###### update graph label				

Date	Q Discharge cfs Ranked	N: 1 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 #DIV/0! r2 forward
update and rank for new data						
14-Apr-99	*180*	1	0.5000	0.000	5.193	#DIV/0!

Secondary Scale For LN graphs

n	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR80	**Date:**	23-Jul-00
Chemical:	tPb	**Analyst:**	L.Raschke
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,278	168	2	2		0.00	#DIV/0!	#DIV/0!
SD:	14	12	0	0		1.00	#DIV/0!	#DIV/0!
CV:	0.00	0.07	0.00	0.00				
Min:	36,264	156	2	1.7		-1.00	#DIV/0!	#DIV/0!
Max:	36,292	180	2	2		1.00	#DIV/0!	#DIV/0!
Median:	36,278	168	2	2		0.00	#DIV/0!	#DIV/0!

tPb	SR80		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b		
#DIV/0!		update r2	#DIV/0!	#DIV/0!		r2:	1.000	1.000		
r2 Q,[COC]:	#DIV/0!	[tPb]	Q			m:	-0.8571	-0.00511		
slope, m:	#DIV/0!	#DIV/0!	156.0			b:	31263	190.53		
intercept, b:	#DIV/0!	#DIV/0!	168.0							
N: 1		#DIV/0!	180							
#DIV/0!			update r2	#DIV/0!	#DIV/0!					
r2 lnQ,ln[COC]:	#DIV/0!	ln[tPb]	ln Q	[tPb]	Q					
slope, m:	#DIV/0!	#DIV/0!	5.05	#DIV/0!	156					
intercept, b:	#DIV/0!	#DIV/0!	5.12	#DIV/0!	168					
N: 1		#DIV/0!	5.19	#DIV/0!	180					
								tPb	for graph 0	
N= 2								SR80		
	Sampling Date	Q Discharge	tPb Concentration	tPb Load	Ln Q	Ln tPb Conc.	Ln tPb Load	Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	*14-Apr-99*	*180*			5.19			1.00		
USGS	12-May-99	156	2	1.7	5.05	0.69	0.52	-1.00	#DIV/0!	#DIV/0!

tPb

Concentration over time analysis

	tPb	SR80		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			#DIV/0!	#DIV/0!
	Time	Ln[COC]	[COC]		
first:	14-Apr-99	#DIV/0!	#DIV/0!		
mid:	28-Apr-99	#DIV/0!	#DIV/0!		
last:	12-May-99	#DIV/0!	#DIV/0!		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	12-May-99	0.00	1		

Load over time analysis

	tPb	SR80		Load over time	
	LnLoad=mTime+b All data r2, m:			#DIV/0!	#DIV/0!
	Time	LnLoad	Load		
first:	14-Apr-99	#DIV/0!	#DIV/0!		
mid:	28-Apr-99	#DIV/0!	#DIV/0!		
last:	12-May-99	#DIV/0!	#DIV/0!		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	12-May-99	0.00	1		

	max r2:	#DIV/0!		max r2:	#DIV/0!
	Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)	
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows	
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

tPb		**SR80**		
LN Analysis		**tPb**		
Load		**Load Data, EV=1.68 lbs/day CV=0**		
Avg:	**2**	**Load Data-based LN**		
SD:	**0**	u	ln tPb Load	tPb Load
CV:	**0.00**	3	0.5	2
Min:	**1.7**	0	0.52	2
Max:	**2**	-3	0.52	1.7
Median:	**2**			
		2	1.68	
		0.00	0	

u=mLn{Load}+ b:

update for r2, EV, CV: #DIV/0!

r2 u,lnLoad:	######	u	lnLoad	Load		
slope, m:	######	3	#DIV/0!	#DIV/0!		
intercept, b:	######	0	#DIV/0!	#DIV/0!		
N:	1	-3	#DIV/0!	#DIV/0!		
E[Load]:	###### Parameter Estimates				#DIV/0!	#DIV/0!
SD[Load]:	###### from LN regression				#DIV/0!	#DIV/0!
CV[Load]:	###### update graph label				#DIV/0!	#DIV/0!
					max r2	
	N: 2				#DIV/0!	

Date	tPb Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
14-Apr-99		1	0.2778	-0.589		
12-May-99	1.7	2	0.7222	0.589	0.518	#DIV/0!

		update for EV, CV:			
tPb		**SR80**		2	2
LN Analysis		**tPb**		0.00	0
Concentration		**Conc. Data, EV=2 ug/L CV=0**			
Avg:	2	**Data-based LN**			
SD:	0	u	ln[tPb]	[tPb]	
CV:	0.00	3	0.7	2	
Min:	2	0	0.69	2	
Max:	2	-3	0.69	2	
Median:	2				

					#DIV/0!	#DIV/0!
	u=mLn(Conc.)+b:				#DIV/0!	#DIV/0!
update for r2, EV, CV:	#DIV/0!				#DIV/0!	#DIV/0!
	r2 u,lnConc:	#DIV/0!	u	lnConc.	Conc.	
	slope, m:	#DIV/0!	3	#DIV/0!	#DIV/0!	
	intercept, b:	#DIV/0!	0	#DIV/0!	#DIV/0!	
	N:	1	-3	#DIV/0!	#DIV/0!	
	E[Conc]:	#DIV/0!	Parameter Estimates			
	SD[Conc]:	#DIV/0!	from LN regression			
	CV[Conc]:	#DIV/0!	update graph label			

	tPb	N: 2				max r2 #DIV/0!
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
14-Apr-99		1	0.2778	-0.589		
12-May-99	2	2	0.7222	0.589	0.693	#DIV/0!

update for EV, CV:

tPb		**SR80**			168	168
LN Analysis		**tPb**			0.07	0.0714
Discharge, Q		**Q Data, EV=168 cfs CV=0.0714**				
Avg:	**168**	**Q Data-based LN**				
SD:	**12**	u	lnQ	Q		
CV:	**0.07**	3	5.3	208		
Min:	**156**	0	5.12	168		
Max:	**180**	-3	4.91	135		
Median:	**168**					
					1.000	1
					168.8	169
					0.12	0.122

u=mLn{Q}+b:

update for r2, EV, CV: **r2=1, EV=169 cfs CV=0.122; max r2=0.98**

r2 u,lnQ:	1.000	u	lnQ	Q
slope, m:	8.238	3	5.49	241
intercept, b:	-42.192	0	5.12	168
N: 2		-3	4.76	116
E[Q]:	168.8	Parameter Estimates		
SD[Q]:	21	from LN regression		
CV[Q]:	0.12	update graph label		

N: 2

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 #DIV/0! r2 forward
update and rank for new data						
12-May-99	156	1	0.2778	-0.589	5.050	1.000
14-Apr-99	*180*	2	0.7222	0.589	5.193	#DIV/0!

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR80	Date:	19-Jul-00
Chemical:	tZn	Analyst:	J.Johnston
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	36,292	156	60	50	#DIV/0!	#DIV/0!	#DIV/0!
SD:	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!
CV:	0.00	0.00	0.00	0.00			
Min:	36,292	156	60	50.4	#DIV/0!	#DIV/0!	#DIV/0!
Max:	36,292	156	60	50	#DIV/0!	#DIV/0!	#DIV/0!
Median:	36,292	156	60	50	#DIV/0!	#DIV/0!	#DIV/0!

tZn	SR80		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
#DIV/0!		update r2	#DIV/0!	#DIV/0!		r2:	#DIV/0!	#DIV/0!
r2 Q,[COC]:	#DIV/0!	[tZn]	Q			m:	#DIV/0!	#DIV/0!
slope, m:	#DIV/0!	#DIV/0!	156.0			b:	#DIV/0!	#DIV/0!
intercept, b:	#DIV/0!	#DIV/0!	156.0					
N: 1		#DIV/0!	156					
#DIV/0!			update r2	#DIV/0!	#DIV/0!			
r2 lnQ,ln[COC]:	#DIV/0!	ln[tZn]	ln Q	[tZn]	Q			
slope, m:	#DIV/0!	#DIV/0!	5.05	#DIV/0!	156			
intercept, b:	#DIV/0!	#DIV/0!	5.05	#DIV/0!	156			
N: 1		#DIV/0!	5.05	#DIV/0!	156			

									for graph
								tZn	0
N= 1								SR80	
	Sampling Date	Q Discharge	tZn Concentration	tZn Load	Ln Q	Ln tZn	Ln tZn	Standardized Values = (x - Avg)/SD		
update for new data		cfs	ug/L	lbs/day		Conc.	Load	Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	12-May-99	156	60	50.4	5.05	4.09	3.92	#DIV/0!	#DIV/0!	#DIV/0!

tZn

Concentration over time analysis

	tZn	SR80		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			#DIV/0!	#DIV/0!
	Time	Ln[COC]	[COC]		
first:	12-May-99	#DIV/0!	#DIV/0!		
mid:	12-May-99	#DIV/0!	#DIV/0!		
last:	12-May-99	#DIV/0!	#DIV/0!		
	LnConc.=mTime+b >'% r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	12-May-99	0.00	1		

Load over time analysis

	tZn	SR80		Load over time	
	LnLoad=mTime+b All data r2, m:			#DIV/0!	#DIV/0!
	Time	LnLoad	Load		
first:	12-May-99	#DIV/0!	#DIV/0!		
mid:	12-May-99	#DIV/0!	#DIV/0!		
last:	12-May-99	#DIV/0!	#DIV/0!		
	LnLoad=mTime+b >'% r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	12-May-99	0.00	1		

	max r2:	#DIV/0!		max r2:	#DIV/0!	
	Forward time Regression on			Forward time Regression on		
	Ln Concentration(t)			Ln Load(t)		
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

tZn		SR80					
LN Analysis		tZn					
Load		#######					
Avg:	#DIV/0!	**Load Data-based LN**					
SD:	#DIV/0!	u	ln tZn Load	tZn Load			
CV:	#DIV/0!	3	#DIV/0!	#DIV/0!			
Min:	0.0	0	#DIV/0!	#DIV/0!			
Max:	0	-3	#DIV/0!	#DIV/0!			
Median:	#NUM!						
		######	#DIV/0!				
		######	#DIV/0!				

u=mLn{Load}+ b:

update for r2, EV, CV:	#NUM!						
r2 u,lnLoad:	#NUM!	u	lnLoad	Load			
slope, m:	#NUM!	3	#NUM!	#NUM!			
intercept, b:	#NUM!	0	#NUM!	#NUM!			
N:	0	-3	#NUM!	#NUM!			
E[Load]:	#NUM!	Parameter Estimates			#NUM!	#NUM!	
SD[Load]:	#NUM!	from LN regression			#NUM!	#NUM!	
CV[Load]:	#NUM!	update graph label			#NUM!	#NUM!	
					max r2		
	N: 1				#NUM!		
	tZn	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**	
Date	**Load lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward	
	Ranked						
update and rank for new data							
		1	0.5000	0.000	#NUM!	#NUM!	

update for EV, CV:

tZn		SR80		#DIV/0!	#DIV/0!
LN Analysis		tZn		#DIV/0!	#DIV/0!
Concentration		#DIV/0!			
Avg:	#DIV/0!	Data-based LN			
SD:	#DIV/0!	u	ln[tZn]	[tZn]	
CV:	#DIV/0!	3	#DIV/0!	#DIV/0!	
Min:	0	0	#DIV/0!	#DIV/0!	
Max:	0	-3	#DIV/0!	#DIV/0!	
Median:	#NUM!				

					#NUM!	#NUM!
u=mLn{Conc.}+b:					#NUM!	#NUM!
update for r2, EV, CV:	#NUM!				#NUM!	#NUM!
	r2 u,lnConc:	#NUM!	u	lnConc.	Conc.	
	slope, m:	#NUM!	3	#NUM!	#NUM!	
	intercept, b:	#NUM!	0	#NUM!	#NUM!	
	N:	0	-3	#NUM!	#NUM!	
	E[Conc]:	#NUM!	Parameter Estimates			
	SD[Conc]:	#NUM!	from LN regression			
	CV[Conc]:	#NUM!	update graph label			

	tZn	N: 1				max r2 #NUM!
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
		1	0.5000	0.000	#NUM!	#NUM!

update for EV, CV:

tZn		**SR80**			#DIV/0!	#DIV/0!
LN Analysis		**tZn**			#DIV/0!	#DIV/0!
Discharge, Q		######				
Avg:	#DIV/0!	**Q Data-based LN**				
SD:	#DIV/0!	u	lnQ	Q		
CV:	#DIV/0!	3	#DIV/0!	#DIV/0!		
Min:	0	0	#DIV/0!	#DIV/0!		
Max:	0	-3	#DIV/0!	#DIV/0!		
Median:	#NUM!					
					#NUM!	#NUM!
					#NUM!	#NUM!
	u=mLn{Q}+b:				#NUM!	#NUM!
update for r2, EV, CV:	#NUM!					
	r2 u,lnQ:	#NUM!	u	lnQ	Q	
	slope, m:	#NUM!	3	#NUM!	#NUM!	
	intercept, b:	#NUM!	0	#NUM!	#NUM!	
	N:	0	-3	#NUM!	#NUM!	
	E[Q]:	#NUM!	Parameter Estimates			
	SD[Q]:	#NUM!	from LN regression			
	CV[Q]:	#NUM!	update graph label			
						max r2
						#NUM!
	Q	N: 1				
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
		1	0.5000	0.000	#NUM!	#NUM!

Secondary Scale For LN graphs

z	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SR85 **Date:** 19-Jul-00
Chemical: dCd **Analyst:** J.Johnston
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,270	10,705	1	87		0.00	#DIV/0!	#DIV/0!
SD:	97	5,810	0	0		1.00	#DIV/0!	#DIV/0!
CV:	0.00	0.54	0.00	0.00				
Min:	36,088	3,350	1	87.2		-1.27	0.00	0.00
Max:	36,411	23,800	1	87		2.25	0.00	0.00
Median:	36,291	9,980	1	87		-0.12	#NUM!	#NUM!

dCd SR85 : Concentration v. Discharge, Q Q = mTime +b LnQ = mTime +b

#DIV/0!		update r2	#DIV/0!	#DIV/0!	r2:	0.000	0.017
r2 Q,[COC]:	#DIV/0!	[dCd]	Q		m:	-0.0405	-0.00073
slope, m:	#DIV/0!	#DIV/0!	3350.0		b:	12172	35.69
intercept, b:	#DIV/0!	#DIV/0!	10704.6				
N: 1		#DIV/0!	23800				

#DIV/0!		update r2	#DIV/0!	#DIV/0!
r2 lnQ,ln[COC]:	#DIV/0!	ln[dCd]	ln Q	[dCd]	Q
slope, m:	#DIV/0!	#DIV/0!	8.12	#DIV/0!	3,350
intercept, b:	#DIV/0!	#DIV/0!	9.28	#DIV/0!	10,705
N: 1		#DIV/0!	10.08	#DIV/0!	23,800

for graph 0

N= 13

update for new data	Sampling Date	Q Discharge cfs	dCd Concentration ug/L	dCd Load lbs/day	Ln Q	Ln dCd Conc.	Ln dCd Load	dCd SR85 Standardized Values = (x - Avg)/SD Q	Conc	Load
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	*20-Oct-98*	*6170*			8.73			-0.78		
USGS	*17-Nov-98*	*6150*			8.72			-0.78		
USGS	*19-Jan-99*	*13700*			9.53			0.52		
USGS	*9-Feb-99*	*9980*			9.21			-0.12		
USGS	*17-Mar-99*	*11100*			9.31			0.07		
USGS	*13-Apr-99*	*11400*			9.34			0.12		
USGS	*11-May-99*	*18900*			9.85			1.41		
USGS	*3-Jun-99*	*23800*			10.08			2.25		
USGS	15-Jun-99	16200	1	87.2	9.69	0.00	4.47	0.95		
USGS	*13-Jul-99*	*6700*			8.81			-0.69		
USGS	*13-Jul-99*	*6700*			8.81			-0.69		
USGS	*10-Aug-99*	*5010*			8.52			-0.98		
USGS	*8-Sep-99*	*3350*			8.12			-1.27		

dCd

Concentration over time analysis				r2	Slope, m
	dCd	**SR85**		**Concentration over time**	
LnConc.=mTime+b All data r2, m:				**0.000**	**0.00000**
	Time	**Ln[COC]**	**[COC]**		
first:	20-Oct-98	0.00	1		
mid:	11-May-99	0.00	1		
last:	8-Sep-99	0.00	1		
LnConc.=mTime+b >'96 r2, m:				**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		
Load over time analysis					
	dCd	**SR85**		**Load over time**	
LnLoad=mTime+b All data r2, m:				**0.000**	**0.00000**
	Time	**LnLoad**	**Load**		
first:	20-Oct-98	0.00	1		
mid:	11-May-99	0.00	1		
last:	8-Sep-99	0.00	1		
LnLoad=mTime+b >'96 r2, m:				**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

max r2:	0.000			max r2:	0.000
Forward time Regression on Ln Concentration(t)				**Forward time Regression on Ln Load(t)**	
r2	**slope**	**intercept**		**r2**	**slope**	**intercept**
only on >4 data points: delete last 4 rows				only on >4 data points: delete last 4 rows		

update for EV, CV:

dCd
LN Analysis
SR85
dCd

Load

Load Data, EV=87.2 lbs/day CV=0

		Load Data-based LN		
Avg:	**87**	**u**	**ln dCd Load**	**dCd Load**
SD:	**0**	3	4.5	87
CV:	**0.00**	0	4.47	87
Min:	**87.2**	-3	4.47	87.2
Max:	**87**			
Median:	**87**			

87	87.2
0.00	0

u=mLn{Load}+ b:

update for r2, EV, CV: #DIV/0!

r2 u,lnLoad:	#DIV/0!	u	lnLoad	Load		
slope, m:	#DIV/0!	3	#DIV/0!	#DIV/0!		
intercept, b:	#DIV/0!	0	#DIV/0!	#DIV/0!		
N: 1		-3	#DIV/0!	#DIV/0!		
E[Load]:	#DIV/0!	Parameter Estimates			#DIV/0!	#DIV/0!
SD[Load]:	#DIV/0!	from LN regression			#DIV/0!	#DIV/0!
CV[Load]:	#DIV/0!	update graph label			#DIV/0!	#DIV/0!
					max r2	
		N: 13			0.000	

Date	**dCd Load lbs/day Ranked**	**i rank**	**i-3/8 / N+1/4 plotting points**	**u y-axis**	**Ln x-axis**	**r2 forward**
update and rank for new data						
8-Sep-99		1	0.0472	-1.673		
10-Aug-99		2	0.1226	-1.162		
17-Nov-98		3	0.1981	-0.848		
20-Oct-98		4	0.2736	-0.602		
13-Jul-99		5	0.3491	-0.388		
13-Jul-99		6	0.4245	-0.190		
9-Feb-99		7	0.5000	0.000		
17-Mar-99		8	0.5755	0.190		
13-Apr-99		9	0.6509	0.388		
19-Jan-99		10	0.7264	0.602		
15-Jun-99	87.2	11	0.8019	0.848	4.468	
11-May-99		12	0.8774	1.162		
3-Jun-99		13	0.9528	1.673		

		update for EV, CV:			
dCd		SR85		1	1
LN Analysis		dCd		0.00	0
Concentration		Conc. Data, EV=1 ug/L CV=0			
Avg:	1	Data-based LN			
SD:	0	u	ln[dCd]	[dCd]	
CV:	0.00	3	0.0	1	
Min:	1	0	0.00	1	
Max:	1	-3	0.00	1	
Median:	1				

					#DIV/0!	#DIV/0!
	u=mLn(Conc.)+b:				#DIV/0!	#DIV/0!
update for r2, EV, CV:	#DIV/0!				#DIV/0!	#DIV/0!
	r2 u,lnConc:	#DIV/0!	u	lnConc.	Conc.	
	slope, m:	#DIV/0!	3	#DIV/0!	#DIV/0!	
	intercept, b:	#DIV/0!	0	#DIV/0!	#DIV/0!	
	N:	1	-3	#DIV/0!	#DIV/0!	
	E[Conc]:	#DIV/0!	Parameter Estimates			
	SD[Conc]:	#DIV/0!	from LN regression			
	CV[Conc]:	#DIV/0!	update graph label			

	dCd	N: 13				max r2 0.000
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
20-Oct-98		1	0.0472	-1.673		
17-Nov-98		2	0.1226	-1.162		
19-Jan-99		3	0.1981	-0.848		
9-Feb-99		4	0.2736	-0.602		
17-Mar-99		5	0.3491	-0.388		
13-Apr-99		6	0.4245	-0.190		
11-May-99		7	0.5000	0.000		
3-Jun-99		8	0.5755	0.190		
15-Jun-99	1	9	0.6509	0.388	0.000	
13-Jul-99		10	0.7264	0.602		
13-Jul-99		11	0.8019	0.848		
10-Aug-99		12	0.8774	1.162		
8-Sep-99		13	0.9528	1.673		

update for EV, CV:

dCd		**SR85**			10,705	10700
LN Analysis		**dCd**			0.54	0.543
Discharge, Q		**Q Data, EV=10700 cfs CV=0.543**				
Avg:	**10,705**	**Q Data-based LN**				
SD:	**5,810**	**u**	lnQ	Q		
CV:	**0.54**	3	10.7	43208		
Min:	**3,350**	0	9.15	9408		
Max:	**23,800**	-3	7.62	2048		
Median:	**9,980**					

					0.977	0.977
					11114.9	11100
u=mLn(Q)+b:					0.67	0.667
update for r2, EV, CV:	**r2=0.977, EV=11100 cfs CV=0.667; max r2=0.98**					
	r2 u,lnQ:	0.977	u	lnQ	Q	
	slope, m:	1.648	3	10.95	57108	
	intercept, b:	-15.045	0	9.13	9245	
	N: 13		-3	7.31	1497	
	E[Q]:	11114.9	Parameter Estimates			
	SD[Q]:	7418	from LN regression			
	CV[Q]:	0.67	update graph label			

	Q	N: 13				max r2 0.988
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
8-Sep-99	*3350*	1	0.0472	-1.673	8.117	0.977
10-Aug-99	*5010*	2	0.1226	-1.162	8.519	0.968
17-Nov-98	*6150*	3	0.1981	-0.848	8.724	0.964
20-Oct-98	*6170*	4	0.2736	-0.602	8.727	0.967
13-Jul-99	*6700*	5	0.3491	-0.388	8.810	0.958
13-Jul-99	*6700*	6	0.4245	-0.190	8.810	0.946
9-Feb-99	*9980*	7	0.5000	0.000	9.208	0.988
17-Mar-99	*11100*	8	0.5755	0.190	9.315	0.985
13-Apr-99	*11400*	9	0.6509	0.388	9.341	0.981
19-Jan-99	*13700*	10	0.7264	0.602	9.525	
15-Jun-99	16200	11	0.8019	0.848	9.693	
11-May-99	*18900*	12	0.8774	1.162	9.847	
3-Jun-99	*23800*	13	0.9528	1.673	10.077	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SR85 **Date:** 19-Jul-00
Chemical: dPb **Analyst:** J.Johnston
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,270	10,705	1	58		0.00	#DIV/0!	#DIV/0!
SD:	97	5,810	0	31		1.00	#DIV/0!	#DIV/0!
CV:	0.00	0.54	0.02	0.54				
Min:	36,088	3,350	1	18.0		-1.27	0.00	0.00
Max:	36,411	23,800	1	128		2.25	0.00	0.00
Median:	36,291	9,980	1	54		-0.12	#NUM!	#NUM!

dPb SR85 : Concentration v. Discharge, Q Q = mTime +b LnQ = mTime +b

Conc. = mQ+b (r2=0.00000547 update r2 0.00 5.47E-06 r2: 0.000 0.017
r2 Q,[COC]: 0.00 [dPb] Q m: -0.0405 -0.00073
slope, m: 0.0 1 3350.0 b: 12172 35.69
intercept, b: 1.0 1 10704.6
N: 13 1 23800

LnConc. = mLn(Q)+b (r2=0.0104) update r2 0.01 0.0104
r2 lnQ,ln[COC]: 0.01 ln[dPb] ln Q [dPb] Q
slope, m: 0.00 0.01 8.12 1 3,350
intercept, b: -0.02 0.01 9.28 1 10,705
N: 13 0.01 10.08 1 23,800

for graph: dPb 0

N= 13

	Sampling Date	Q Discharge	dPb Concentration	dPb Load	Ln Q	Ln dPb Conc.	Ln dPb Load	SR85 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	*20-Oct-98*	*6170*	1.01	33.5	8.73	0.01	3.51	-0.78		
USGS	*17-Nov-98*	*6150*	*1*	33.1	8.72	0.00	3.50	-0.78		
USGS	*19-Jan-99*	*13700*	*1*	73.7	9.53	0.00	4.30	0.52		
USGS	*9-Feb-99*	*9980*	*1*	53.7	9.21	0.00	3.98	-0.12		
USGS	17-Mar-99	11100	1.02	60.9	9.31	0.02	4.11	0.07		
USGS	13-Apr-99	11400	1.03	63.2	9.34	0.03	4.15	0.12		
USGS	11-May-99	18900	*1*	101.7	9.85	0.00	4.62	1.41		
USGS	3-Jun-99	23800	*1*	128.0	10.08	0.00	4.85	2.25		
USGS	15-Jun-99	16200	1.04	90.6	9.69	0.04	4.51	0.95		
USGS	*13-Jul-99*	*6700*	1.05	37.8	8.81	0.05	3.63	-0.69		
USGS	*13-Jul-99*	*6700*	*1*	36.0	8.81	0.00	3.58	-0.69		
USGS	*10-Aug-99*	*5010*	*1*	27.0	8.52	0.00	3.29	-0.98		
USGS	*8-Sep-99*	*3350*	*1*	18.0	8.12	0.00	2.89	-1.27		

dPb

Concentration over time analysis r2 Slope, m

	dPb	SR85		Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.028	0.00003
	Time	Ln[COC]	[COC]		
first:	20-Oct-98	0.01	1		
mid:	11-May-99	0.01	1		
last:	8-Sep-99	0.02	1		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

Load over time analysis

	dPb	SR85		Load over time	
	LnLoad=mTime+b All data r2, m:			0.016	-0.00070
	Time	LnLoad	Load		
first:	20-Oct-98	4.05	57		
mid:	11-May-99	3.90	50		
last:	8-Sep-99	3.82	46		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

max r2: 0.447 max r2: 0.927

Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
r2	slope	intercept	r2	slope	intercept
only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
0.028	0.00003	-1.04	0.016	-0.00070	29.43
0.034	0.00004	-1.35	0.085	-0.00191	73.32
0.007	0.00002	-0.75	0.318	-0.00448	166.63
0.002	-0.00001	0.48	0.324	-0.00529	196.08
0.064	-0.00009	3.21	0.493	-0.00815	300.08
0.063	-0.00011	3.97	0.663	-0.01175	430.76
0.010	-0.00005	1.89	0.901	-0.01730	632.71
0.109	-0.00021	7.71	0.927	-0.02005	732.92
0.447	-0.00050	18.36	0.910	-0.01759	643.42

update for EV, CV:

dPb		**SR85**		
LN Analysis		**dPb**		
Load		**Load Data, EV=58.3 lbs/day CV=0.54**		
Avg:	**58**	**Load Data-based LN**		
SD:	**31**	u	ln dPb Load	dPb Load
CV:	**0.54**	3	5.5	234
Min:	**18.0**	0	3.94	51
Max:	**128**	-3	2.42	11.2
Median:	**54**			
		58	58.3	
		0.54	0.54	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.98, EV=60.5lbs/day CV=0.669; max r2=0.99**

r2 u,lnLoad:	0.980	u	lnLoad	Load			
slope, m:	1.644	3	5.74	312			
intercept, b:	-6.443	0	3.92	50			
N:	13	-3	2.09	8.1			
E[Load]:	60.5	Parameter Estimates				0.980	0.98
SD[Load]:	40	from LN regression				60.5	60.5
CV[Load]:	0.67	update graph label				0.7	0.669
						max r2	

Date	dPb Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	0.986 r2 forward
update and rank for new data						
8-Sep-99	18.0	1	0.0472	-1.673	2.892	0.980
10-Aug-99	27.0	2	0.1226	-1.162	3.294	0.973
17-Nov-98	33.1	3	0.1981	-0.848	3.499	0.968
20-Oct-98	33.5	4	0.2736	-0.602	3.512	0.970
13-Jul-99	36.0	5	0.3491	-0.388	3.585	0.961
13-Jul-99	37.8	6	0.4245	-0.190	3.634	0.952
9-Feb-99	53.7	7	0.5000	0.000	3.983	0.986
17-Mar-99	60.9	8	0.5755	0.190	4.109	0.981
13-Apr-99	63.2	9	0.6509	0.388	4.146	0.974
19-Jan-99	73.7	10	0.7264	0.602	4.300	
15-Jun-99	90.6	11	0.8019	0.848	4.507	
11-May-99	101.7	12	0.8774	1.162	4.622	
3-Jun-99	128.0	13	0.9528	1.673	4.852	

update for EV, CV:

dPb		**SR85**		1	1.03
LN Analysis		**dPb**		0.01	0.0137
Concentration		**Conc. Data, EV=1.03 ug/L CV=0.0137**			
Avg:	1	**Data-based LN**			
SD:	0	u	ln[dPb]	[dPb]	
CV:	0.01	3	0.1	1	
Min:	1	0	0.03	1	
Max:	1	-3	-0.01	1	
Median:	1				

					0.895	0.895
u=mLn(Conc.)+b:					1.0	1.03
update for r2, EV, CV:	r2=0.895, EV=1.03 ug/L CV=0.0182; max r2=0.99				0.018	0.0182
	r2 u,lnConc:	0.895	u	lnConc.	Conc.	
	slope, m:	54.935	3	0.09	1	
	intercept, b:	-1.871	0	0.03	1	
	N: 5		-3	-0.02	1	
	E[Conc]:	1.0	Parameter Estimates			
	SD[Conc]:	0	from LN regression			
	CV[Conc]:	0.02	update graph label			

Data	dPb Concentration ug/L Ranked	N: 13 i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.958 r2 forward
update and rank for new data						
20-Oct-98	1.01	1	0.0472	-1.673	0.010	0.895
17-Nov-98		2	0.1226	-1.162		
19-Jan-99		3	0.1981	-0.848		
9-Feb-99		4	0.2736	-0.602		
17-Mar-99	1.02	5	0.3491	-0.388	0.020	0.958
13-Apr-99	1.03	6	0.4245	-0.190	0.030	0.936
11-May-99		7	0.5000	0.000		
3-Jun-99		8	0.5755	0.190		
15-Jun-99	1.04	9	0.6509	0.388	0.039	
13-Jul-99	1.05	10	0.7264	0.602	0.049	
13-Jul-99		11	0.8019	0.848		
10-Aug-99		12	0.8774	1.162		
8-Sep-99		13	0.9528	1.673		

update for EV, CV:

dPb		**SR85**			10,705	10700
LN Analysis		**dPb**			0.54	0.543
Discharge, Q		**Q Data, EV=10700 cfs CV=0.543**				
Avg:	**10,705**	**Q Data-based LN**				
SD:	**5,810**	**u**	**lnQ**	**Q**		
CV:	**0.54**	3	10.7	43208		
Min:	**3,350**	0	9.15	9408		
Max:	**23,800**	-3	7.62	2048		
Median:	**9,980**					
					0.977	0.977
					11114.9	11100
	u=mLn{Q}+b:				0.67	0.667

update for r2, EV, CV: **r2=0.977, EV=11100 cfs CV=0.667; max r2=0.98**

r2 u,lnQ:	0.977	u	lnQ	Q
slope, m:	1.648	3	10.95	57108
intercept, b:	-15.045	0	9.13	9245
N: 13		-3	7.31	1497
E[Q]:	11114.9	Parameter Estimates		
SD[Q]:	7418	from LN regression		
CV[Q]:	0.67	update graph label		

N: 13

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.988 r2 forward
update and rank for new data						
8-Sep-99	*3350*	1	0.0472	-1.673	8.117	0.977
10-Aug-99	*5010*	2	0.1226	-1.162	8.519	0.968
17-Nov-98	*6150*	3	0.1981	-0.848	8.724	0.964
20-Oct-98	*6170*	4	0.2736	-0.602	8.727	0.967
13-Jul-99	*6700*	5	0.3491	-0.388	8.810	0.958
13-Jul-99	*6700*	6	0.4245	-0.190	8.810	0.946
9-Feb-99	*9980*	7	0.5000	0.000	9.208	0.988
17-Mar-99	11100	8	0.5755	0.190	9.315	0.985
13-Apr-99	11400	9	0.6509	0.388	9.341	
19-Jan-99	*13700*	10	0.7264	0.602	9.525	
15-Jun-99	16200	11	0.8019	0.848	9.693	
11-May-99	18900	12	0.8774	1.162	9.847	
3-Jun-99	23800	13	0.9528	1.673	10.077	

Secondary Scale For LN graphs

n	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

Several values were reported at a concentration of 1 µg/L by the laboratory. Because the log of 1 is zero, use of 1 causes division by zero in the lognormal probabilistic analysis. Therefore, to perform the analyses, these values were changed to 1.01, 1.02, 1.03, etc. These changes are within the data uncertainty and have a minimal impact on estimations of concentrations and no impact on loading calculations.

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR85	Date:	19-Jul-00
Chemical:	dZn	Analyst:	J.Johnston
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	36,270	10,705	23	1,467	0.07	0.00	0.00
SD:	97	5,810	18	1,256	1.01	1.00	1.00
CV:	0.00	0.54	0.77	0.86			
Min:	36,088	3,350	2	90.1	-1.27	-1.21	-1.10
Max:	36,411	23,800	56	3,435	2.25	1.88	1.57
Median:	36,291	9,980	19	1,192	-0.03	-0.24	-0.22

dZn	SR85		: Concentration v. Discharge, Q		Q = mTime +b		LnQ = mTime +b
Conc. = mQ+b (r2=0.0367)		update r2	0.04	0.0367	r2:	0.000	0.017
r2 Q,[COC]:	0.04	[dZn]	Q		m:	-0.0405	-0.00073
slope, m:	0.0	18	3350.0		b:	12172	35.69
intercept, b:	16.5	23	10704.6				
N: 12		30	23800				
LnConc. = mLn(Q)+b (r2=0.0614)		update r2	0.06	0.0614			
r2 lnQ,ln[COC]:	0.06	ln[dZn]	ln Q	[dZn]	Q		
slope, m:	0.45	2.25	8.12	9	3,350		
intercept, b:	-1.43	2.77	9.28	16	10,705		
N: 12		3.14	10.08	23	23,800		

N= 13

	Sampling Date	Q Discharge	dZn Concentration	dZn Load	Ln Q	Ln dZn Conc.	Ln dZn Load	dZn SR85 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	3-Jun-99	23800	25	3201.1	10.08	3.22	8.07	2.25	0.12	1.38
USGS	8-Sep-99	3350	5	90.1	8.12	1.61	4.50	-1.27	-1.01	-1.10
USGS	9-Feb-99	9980	52	2792.0	9.21	3.95	7.93	-0.12	1.65	1.05
USGS	10-Aug-99	5010	9	242.6	8.52	2.20	5.49	-0.98	-0.78	-0.97
USGS	11-May-99	18900	1.5	152.5	9.85	0.41	5.03	1.41	-1.21	-1.05
USGS	13-Apr-99	11400	56	3434.6	9.34	4.03	8.14	0.12	1.88	1.57
USGS	13-Jul-99	6700	13	468.6	8.81	2.56	6.15	-0.69	-0.56	-0.79
USGS	13-Jul-99	6700	13	468.6	8.81	2.56	6.15	-0.69	-0.56	-0.79
USGS	15-Jun-99	16200	24	2091.7	9.69	3.18	7.65	0.95	0.07	0.50
USGS	17-Mar-99	11100	42	2508.2	9.31	3.74	7.83	0.07	1.09	0.83
USGS	17-Nov-98	6150	7.2	238.2	8.72	1.97	5.47	-0.78	-0.88	-0.98
USGS	19-Jan-99	13700	26	1916.4	9.53	3.26	7.56	0.52	0.18	0.36
USGS	20-Oct-98	6170			8.73					

dZn

Concentration over time analysis

				r2	Slope, m
	dZn	SR85		Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.087	-0.00352
	Time	Ln[COC]	[COC]		
first:	20-Oct-98	3.42	31		
mid:	11-May-99	2.70	15		
last:	8-Sep-99	2.28	10		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

Load over time analysis

	dZn	SR85		Load over time	
	LnLoad=mTime+b All data r2, m:			0.133	-0.00547
	Time	LnLoad	Load		
first:	20-Oct-98	7.74	2,307		
mid:	11-May-99	6.63	761		
last:	8-Sep-99	5.98	395		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

	max r2:	0.404		max r2:	0.554	
	Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.087	-0.00352	130.34	0.133	-0.00547	205.02
	0.099	-0.00373	138.06	0.180	-0.00603	225.28
	0.039	-0.00251	93.89	0.062	-0.00342	130.95
	0.011	-0.00129	49.31	0.028	-0.00224	87.95
	0.002	-0.00053	22.10	0.000	-0.00020	14.11
	0.011	0.00084	-27.34	0.005	0.00082	-22.84
	0.016	0.00080	-25.96	0.006	0.00077	-21.22
	0.076	0.00190	-65.78	0.071	0.00282	-95.27
	0.404	0.00535	-190.72	0.554	0.00924	-327.57

update for EV, CV:
SR85
dZn
Load Data, EV=1290 lbs/day CV=0.898
Load Data-based LN

dZn
LN Analysis

Load

Avg:	1,288
SD:	1,157
CV:	0.90
Min:	90.1
Max:	3,201
Median:	469

u	ln dZn Load	dZn Load
3	9.2	9624
0	6.87	959
-3	4.56	95.5

1,288	1290
0.90	0.898

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.903, EV=3090lbs/day CV=4.05; max r2=0.99**

r2 u,lnLoad:	0.903	u	lnLoad	Load		
slope, m:	0.592	3	11.68	118053		
intercept, b:	-3.910	0	6.61	741		
N: 11		-3	1.54	4.7		
E[Load]:	3092.6	Parameter Estimates			0.903	0.903
SD[Load]:	12525	from LN regression			3092.6	3090
CV[Load]:	4.05	update graph label			4.0	4.05
					max r2	
		N: 13			0.984	

Date	dZn Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward
update and rank for new data						
8-Sep-99	90.1	1	0.0472	-1.673	4.501	0.903
20-Oct-98		2	0.1226	-1.162		
11-May-99	152.5	3	0.1981	-0.848	5.027	0.901
17-Nov-98	238.2	4	0.2736	-0.602	5.473	0.867
10-Aug-99	242.6	5	0.3491	-0.388	5.491	0.822
13-Jul-99	468.6	6	0.4245	-0.190	6.150	0.751
13-Jul-99	468.6	7	0.5000	0.000	6.150	0.631
19-Jan-99	1916.4	8	0.5755	0.190	7.558	0.984
15-Jun-99	2091.7	9	0.6509	0.388	7.646	0.971
17-Mar-99	2508.2	10	0.7264	0.602	7.827	
9-Feb-99	2792.0	11	0.8019	0.848	7.935	
3-Jun-99	3201.1	12	0.8774	1.162	8.071	
13-Apr-99		13	0.9528	1.673		

		update for EV, CV:			
dZn		**SR85**		23	22.8
LN Analysis		**dZn**		0.77	0.774
Concentration		**Conc. Data, EV=22.8 ug/L CV=0.774**			
Avg:	**23**	**Data-based LN**			
SD:	**18**	u	ln[dZn]	[dZn]	
CV:	**0.77**	3	4.9	141	
Min:	**2**	0	2.89	18	
Max:	**56**	-3	0.84	2	
Median:	**19**				

					0.982	0.982
	u=mLn(Conc.)+b:				32.4	32.4
update for r2, EV, CV:	**r2=0.982, EV=32.4 ug/L CV=2.02; max r2=0.99**				2.019	2.02
	r2 u,lnConc:	0.982	u	lnConc.	Conc.	
	slope, m:	0.785	3	6.49	657	
	intercept, b:	-2.091	0	2.66	14	
	N: 11		-3	-1.16	0	
	E[Conc]:	32.4	Parameter Estimates			
	SD[Conc]:	65	from LN regression			
	CV[Conc]:	2.02	update graph label			

	dZn	N: 13				max r2 0.982
	Concentration	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**ug/L**	**rank**	**plotting points**	**y-axis**	**x-axis**	**forward**
	Ranked					
update and rank for new data						
11-May-99	1.5	1	0.0472	-1.673	0.405	0.982
20-Oct-98		2	0.1226	-1.162		
8-Sep-99	5	3	0.1981	-0.848	1.609	0.973
17-Nov-98	7.2	4	0.2736	-0.602	1.974	0.964
10-Aug-99	9	5	0.3491	-0.388	2.197	0.950
13-Jul-99	13	6	0.4245	-0.190	2.565	0.931
13-Jul-99	13	7	0.5000	0.000	2.565	0.903
15-Jun-99	24	8	0.5755	0.190	3.178	0.897
3-Jun-99	25	9	0.6509	0.388	3.219	0.926
19-Jan-99	26	10	0.7264	0.602	3.258	
17-Mar-99	42	11	0.8019	0.848	3.738	
9-Feb-99	52	12	0.8774	1.162	3.951	
13-Apr-99	56	13	0.9528	1.673		

update for EV, CV:

dZn		**SR85**			10,705	10700
LN Analysis		**dZn**			0.54	0.543
Discharge, Q		**Q Data, EV=10700 cfs CV=0.543**				
Avg:	**10,705**	**Q Data-based LN**				
SD:	**5,810**	**u**	lnQ	Q		
CV:	**0.54**	3	10.7	43208		
Min:	**3,350**	0	9.15	9408		
Max:	**23,800**	-3	7.62	2048		
Median:	**9,980**					
					0.977	0.977
					11114.9	11100
	u=mLn(Q)+b:				0.67	0.667

update for r2, EV, CV: **r2=0.977, EV=11100 cfs CV=0.667; max r2=0.98**

r2 u,lnQ:	0.977	u	lnQ	Q
slope, m:	1.648	3	10.95	57108
intercept, b:	-15.045	0	9.13	9245
N: 13		-3	7.31	1497
E[Q]:	11114.9	Parameter Estimates		
SD[Q]:	7418	from LN regression		
CV[Q]:	0.67	update graph label		

N: 13

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 0.988 r2 forward
update and rank for new data						
8-Sep-99	3350	1	0.0472	-1.673	8.117	0.977
10-Aug-99	5010	2	0.1226	-1.162	8.519	0.968
17-Nov-98	6150	3	0.1981	-0.848	8.724	0.964
20-Oct-98	*6170*	4	0.2736	-0.602	8.727	0.967
13-Jul-99	6700	5	0.3491	-0.388	8.810	0.958
13-Jul-99	6700	6	0.4245	-0.190	8.810	0.946
9-Feb-99	9980	7	0.5000	0.000	9.208	0.988
17-Mar-99	11100	8	0.5755	0.190	9.315	0.985
13-Apr-99	11400	9	0.6509	0.388	9.341	0.981
19-Jan-99	13700	10	0.7264	0.602	9.525	
15-Jun-99	16200	11	0.8019	0.848	9.693	
11-May-99	18900	12	0.8774	1.162	9.847	
3-Jun-99	23800	13	0.9528	1.673	10.077	

Secondary Scale For LN graphs

n	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR85	Date:	14-Jul-00
Chemical:	tCd	Analyst:	J Johnston
Notes:			
Input Discharge and Concentration Data below (in red)			

	Date	Discharge	Concentration	Load			
Avg:	36,270	10,705	1	88	0.00	#DIV/0!	0.00
SD:	97	5,810	0	26	1.00	#DIV/0!	1.00
CV:	0.00	0.54	0.00	0.29			
Min:	36,088	3,350	1	59.7	-1.27	#DIV/0!	-1.08
Max:	36,411	23,800	1	128	2.25	#DIV/0!	1.57
Median:	36,291	9,980	1	87	-0.12	#DIV/0!	-0.02

tCd	SR85		: Concentration v. Discharge, Q			Q = mTime +b		LnQ = mTime +b
#DIV/0!		update r2	#DIV/0!	#DIV/0!		r2:	0.000	0.017
r2 Q,[COC]:	#DIV/0!	[tCd]	Q			m:	-0.0405	-0.00073
slope, m:	0.0	1	3350.0			b:	12172	35.69
intercept, b:	1.0	1	10704.6					
N: 5		1	23800					
#DIV/0!			update r2	#DIV/0!	#DIV/0!			
r2 lnQ,ln[COC]:	#DIV/0!	ln[tCd]	ln Q	[tCd]	Q			
slope, m:	0.00	0.00	8.12	1	3,350			
intercept, b:	0.00	0.00	9.28	1	10,705			
N: 5		0.00	10.08	1	23,800			

								tCd	for graph 0	
N= 13								SR85		
	Sampling Date	Q Discharge	tCd Concentration	tCd Load	Ln Q	Ln tCd Conc.	Ln tCd Load	Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	20-Oct-98	6170			8.73			-0.78		
USGS	17-Nov-98	6150			8.72			-0.78		
USGS	19-Jan-99	13700			9.53			0.52		
USGS	9-Feb-99	9980			9.21			-0.12		
USGS	17-Mar-99	11100	1	59.7	9.31	0.00	4.09	0.07	#DIV/0!	-1.08
USGS	13-Apr-99	11400	1	61.3	9.34	0.00	4.12	0.12	#DIV/0!	-1.02
USGS	11-May-99	18900	1	101.7	9.85	0.00	4.62	1.41	#DIV/0!	0.55
USGS	3-Jun-99	23800	1	128.0	10.08	0.00	4.85	2.25	#DIV/0!	1.57
USGS	15-Jun-99	16200	1	87.2	9.69	0.00	4.47	0.95	#DIV/0!	-0.02
USGS	13-Jul-99	6700			8.81			-0.69		
USGS	13-Jul-99	6700			8.81			-0.69		
USGS	10-Aug-99	5010			8.52			-0.98		
USGS	8-Sep-99	3350			8.12			-1.27		

tCd

Concentration over time analysis

				r2	Slope, m
	tCd	**SR85**		**Concentration over time**	
	LnConc.=mTime+b All data r2, m:			**#DIV/0!**	**0.00000**
	Time	**Ln[COC]**	**[COC]**		
first:	20-Oct-98	0.00	1		
mid:	11-May-99	0.00	1		
last:	8-Sep-99	0.00	1		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

Load over time analysis

	tCd	**SR85**		**Load over time**	
	LnLoad=mTime+b All data r2, m:			**0.633**	**0.00708**
	Time	**LnLoad**	**Load**		
first:	20-Oct-98	3.03	21		
mid:	11-May-99	4.46	87		
last:	8-Sep-99	5.32	203		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

max r2: #DIV/0!

Forward time Regression on Ln Concentration(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00
#DIV/0!	0.00000	0.00
#DIV/0!	#DIV/0!	#DIV/0!

max r2: #DIV/0!

Forward time Regression on Ln Load(t)

r2	slope	intercept
only on >4 data points: delete last 4 rows		
0.633	0.00708	-252.65
0.633	0.00708	-252.65
0.633	0.00708	-252.65
0.633	0.00708	-252.65
0.633	0.00708	-252.65
0.451	0.00747	-266.68
0.052	-0.00248	94.74
1.000	-0.03206	1168.94
#DIV/0!	#DIV/0!	#DIV/0!

update for EV, CV:

tCd		*SR85*		
LN Analysis		**tCd**		
Load		**Load Data, EV=87.6 lbs/day CV=0.293**		
Avg:	**88**	**Load Data-based LN**		
SD:	**26**	**u**	**ln tCd Load**	**tCd Load**
CV:	**0.29**	3	5.3	199
Min:	**59.7**	0	4.43	84
Max:	**128**	-3	3.57	35.5
Median:	**87**			
		88	87.6	
		0.29	0.293	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.984, EV=61lbs/day CV=0.6; max r2=0.99**

r2 u,lnLoad:	0.984	u	lnLoad	Load			
slope, m:	1.803	3	5.62	276			
intercept, b:	-7.134	0	3.96	52			
N:	5	-3	2.29	9.9			
E[Load]:	61.0	Parameter Estimates				0.984	0.984
SD[Load]:	37	from LN regression				61.0	61
CV[Load]:	0.60	update graph label				0.6	0.6
						max r2	
	N:	13				0.984	

Date	tCd Load lbs/day Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	r2 forward	
update and rank for new data							
8-Sep-99		1	0.0472	-1.673			
10-Aug-99		2	0.1226	-1.162			
17-Nov-98		3	0.1981	-0.848			
20-Oct-98		4	0.2736	-0.602			
13-Jul-99		5	0.3491	-0.388			
13-Jul-99		6	0.4245	-0.190			
9-Feb-99		7	0.5000	0.000			
17-Mar-99	59.7	8	0.5755	0.190	4.090	0.984	
13-Apr-99	61.3	9	0.6509	0.388	4.116	0.979	
19-Jan-99		10	0.7264	0.602			
15-Jun-99	87.2	11	0.8019	0.848	4.468		
11-May-99	101.7	12	0.8774	1.162	4.622		
3-Jun-99	128.0	13	0.9528	1.673	4.852		

		update for EV, CV:			
tCd		SR85		1	1
LN Analysis		tCd		0.00	0
Concentration		Conc. Data, EV=1 ug/L CV=0			
Avg:	1	Data-based LN			
SD:	0	u	ln[tCd]	[tCd]	
CV:	0.00	3	0.0	1	
Min:	1	0	0.00	1	
Max:	1	-3	0.00	1	
Median:	1				

					#DIV/0!	#DIV/0!
	u=mLn(Conc.)+b:				#DIV/0!	#DIV/0!
update for r2, EV, CV:	#DIV/0!				#DIV/0!	#DIV/0!
	r2 u,lnConc:	#DIV/0!	u	lnConc.	Conc.	
	slope, m:	#DIV/0!	3	#DIV/0!	#DIV/0!	
	intercept, b:	#DIV/0!	0	#DIV/0!	#DIV/0!	
	N:	5	-3	#DIV/0!	#DIV/0!	
	E[Conc]:	#DIV/0!	Parameter Estimates			
	SD[Conc]:	#DIV/0!	from LN regression			
	CV[Conc]:	#DIV/0!	update graph label			

	tCd	N: 13				max r2 #DIV/0!
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L	rank	plotting points	y-axis	x-axis	forward
	Ranked					
update and rank for new data						
20-Oct-98		1	0.0472	-1.673		
17-Nov-98		2	0.1226	-1.162		
19-Jan-99		3	0.1981	-0.848		
9-Feb-99		4	0.2736	-0.602		
17-Mar-99	1	5	0.3491	-0.388	0.000	#DIV/0!
13-Apr-99	1	6	0.4245	-0.190	0.000	#DIV/0!
11-May-99	1	7	0.5000	0.000	0.000	#DIV/0!
3-Jun-99	1	8	0.5755	0.190	0.000	#DIV/0!
15-Jun-99	1	9	0.6509	0.388	0.000	#DIV/0!
13-Jul-99		10	0.7264	0.602		
13-Jul-99		11	0.8019	0.848		
10-Aug-99		12	0.8774	1.162		
8-Sep-99		13	0.9528	1.673		

		update for EV, CV:				
tCd		**SR85**			10,705	10700
LN Analysis		**tCd**			0.54	0.543
Discharge, Q		**Q Data, EV=10700 cfs CV=0.543**				
Avg:	**10,705**	**Q Data-based LN**				
SD:	**5,810**	u	lnQ	Q		
CV:	**0.54**	3	10.7	43208		
Min:	**3,350**	0	9.15	9408		
Max:	**23,800**	-3	7.62	2048		
Median:	**9,980**					

					0.977	0.977
					11114.9	11100
	u=mLn(Q)+b:				0.67	0.667
update for r2, EV, CV:	**r2=0.977, EV=11100 cfs CV=0.667; max r2=0.98**					
	r2 u,lnQ:	0.977	u	lnQ	Q	
	slope, m:	1.648	3	10.95	57108	
	intercept, b:	-15.045	0	9.13	9245	
	N: 13		-3	7.31	1497	
	E[Q]:	11114.9	Parameter Estimates			
	SD[Q]:	7418	from LN regression			
	CV[Q]:	0.67	update graph label			

	Q	N: 13				max r2 0.988
	Discharge	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**cfs**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
8-Sep-99	3350	1	0.0472	-1.673	8.117	0.977
10-Aug-99	5010	2	0.1226	-1.162	8.519	0.968
17-Nov-98	6150	3	0.1981	-0.848	8.724	0.964
20-Oct-98	6170	4	0.2736	-0.602	8.727	0.967
13-Jul-99	6700	5	0.3491	-0.388	8.810	0.958
13-Jul-99	6700	6	0.4245	-0.190	8.810	0.946
9-Feb-99	9980	7	0.5000	0.000	9.208	0.988
17-Mar-99	11100	8	0.5755	0.190	9.315	0.985
13-Apr-99	11400	9	0.6509	0.388	9.341	0.981
19-Jan-99	13700	10	0.7264	0.602	9.525	
15-Jun-99	16200	11	0.8019	0.848	9.693	
11-May-99	18900	12	0.8774	1.162	9.847	
3-Jun-99	23800	13	0.9528	1.673	10.077	

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data.			see comment
Station:	SR85	Date:	19-Jul-00
Chemical:	tPb	Analyst:	J Johnston
Notes:			

Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,215	12,313	1	101	0.00	0.00	0.00
SD:	81	5,390	0	74	1.00	1.00	1.00
CV:	0.00	0.44	0.35	0.73			
Min:	36,088	6,150	1	33.1	-1.14	-0.77	-0.92
Max:	36,326	23,800	2	256	2.13	1.29	2.10
Median:	36,218	11,250	1	67	-0.20	-0.77	-0.46

tPb SR85 : Concentration v. Discharge, Q — Q = mTime +b — LnQ = mTime +b

Conc. = mQ+b (r2=0.48)		update r2	0.48	0.48	r2:	0.680	0.784
r2 Q,[COC]:	0.48	[tPb]	Q		m:	54.9479	0.00470
slope, m:	0.0	1	6150.0		b:	-1977638	-160.82
intercept, b:	0.6	1	12312.5				
N: 8		2	23800				
LnConc. = mLn(Q)+b (r2=0.464)		update r2		0.46	0.464		
r2 lnQ,ln[COC]:	0.46	ln[tPb]	ln Q	[tPb]	Q		
slope, m:	0.53	-0.06	8.72	1	6,150		
intercept, b:	-4.71	0.31	9.42	1	12,313		
N: 8		0.66	10.08	2	23,800		

N= 8

	Sampling Date	Q Discharge	tPb Concentration	tPb Load	Ln Q	Ln tPb Conc.	Ln tPb Load	tPb SR85 Standardized Values = (x - Avg)/SD Q	Conc	Load
update for new data		cfs	ug/L	lbs/day						
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis			
USGS	20-Oct-98	6170	1	33.2	8.73	0.00	3.50	-1.14	-0.77	-0.91
USGS	17-Nov-98	6150	1	33.1	8.72	0.00	3.50	-1.14	-0.77	-0.92
USGS	19-Jan-99	13700	1	73.7	9.53	0.00	4.30	0.26	-0.77	-0.37
USGS	9-Feb-99	9980	1	53.7	9.21	0.00	3.98	-0.43	-0.77	-0.64
USGS	17-Mar-99	11100	1	59.7	9.31	0.00	4.09	-0.22	-0.77	-0.56
USGS	13-Apr-99	11400	2	122.7	9.34	0.69	4.81	-0.17	1.29	0.30
USGS	3-Jun-99	23800	2	256.1	10.08	0.69	5.55	2.13	1.29	2.10
USGS	15-Jun-99	16200	2	174.3	9.69	0.69	5.16	0.72	1.29	0.99

tPb

Concentration over time analysis r2 Slope, m

	tPb	SR85		Concentration over time	
	LnConc.=mTime+b All data r2, m:			0.675	0.00341
	Time	Ln[COC]	[COC]		
first:	20-Oct-98	-0.17	1		
mid:	27-Feb-99	0.27	1		
last:	15-Jun-99	0.64	2		
	LnConc.=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	15-Jun-99	0.00	1		

Load over time analysis

	tPb	SR85		Load over time	
	LnLoad=mTime+b All data r2, m:			0.872	0.00811
	Time	LnLoad	Load		
first:	20-Oct-98	3.33	28		
mid:	27-Feb-99	4.38	80		
last:	15-Jun-99	5.26	192		
	LnLoad=mTime+b >'96 r2, m:			0.000	0.00000
	0-Jan-00	0.00	1		
	15-Jun-99	0.00	1		

	max r2:	0.780		max r2:	0.874	
	Forward time Regression on Ln Concentration(t)			Forward time Regression on Ln Load(t)		
	r2	slope	intercept	r2	slope	intercept
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.675	0.00341	-123.17	0.872	0.00811	-289.21
	0.709	0.00416	-150.28	0.854	0.00885	-316.14
	0.780	0.00563	-203.81	0.773	0.00927	-331.35
	0.741	0.00619	-224.09	0.874	0.01196	-428.97

update for EV, CV:

tPb		**SR85**		
LN Analysis		**tPb**		
Load		**Load Data, EV=101 lbs/day CV=0.734**		
Avg:	**101**	**Load Data-based LN**		
SD:	**74**	**u**	**ln tPb Load**	**tPb Load**
CV:	**0.73**	3	6.4	582
Min:	**33.1**	0	4.40	81
Max:	**256**	-3	2.43	11.3
Median:	**67**			
		101	101	
		0.73	0.734	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.952, EV=110lbs/day CV=0.99; max r2=0.99**

r2 u,lnLoad:	0.952	**u**	**lnLoad**	**Load**		
slope, m:	1.210	3	6.84	935		
intercept, b:	-5.276	0	4.36	78		
N:	8	-3	1.88	6.6		
E[Load]:	110.3	Parameter Estimates			0.952	0.952
SD[Load]:	109	from LN regression			110.3	110
CV[Load]:	0.99	update graph label			1.0	0.99
					max r2	
	tPb	N: 8			#DIV/0!	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
17-Nov-98	33.1	1	0.0758	-1.434	3.499	0.952
20-Oct-98	33.2	2	0.1970	-0.852	3.502	0.982
9-Feb-99	53.7	3	0.3182	-0.473	3.983	0.973
17-Mar-99	59.7	4	0.4394	-0.153	4.090	0.975
19-Jan-99	73.7	5	0.5606	0.153	4.300	0.958
13-Apr-99	122.7	6	0.6818	0.473	4.809	0.991
15-Jun-99	174.3	7	0.8030	0.852	5.161	1.000
3-Jun-99	256.1	8	0.9242	1.434	5.546	#DIV/0!

update for EV, CV:

tPb		SR85		1	1.38
LN Analysis		tPb		0.35	0.352
Concentration		Conc. Data, EV=1.38 ug/L CV=0.352			
Avg:	1	Data-based LN			
SD:	0	u	ln[tPb]	[tPb]	
CV:	0.35	3	1.3	4	
Min:	1	0	0.26	1	
Max:	2	-3	-0.77	0	
Median:	1				

				0.670	0.67
u=mLn{Conc.}+b:				1.4	1.45
update for r2, EV, CV:	r2=0.67, EV=1.45 ug/L CV=0.498; max r2=0.99			0.498	0.498
r2 u,lnConc:	0.670	u	lnConc.	Conc.	
slope, m:	2.123	3	1.67	5	
intercept, b:	-0.552	0	0.26	1	
N:	2	-3	-1.15	0	
E[Conc]:	1.4	Parameter Estimates			
SD[Conc]:	1	from LN regression			
CV[Conc]:	0.50	update graph label			

	tPb	N: 2				max r2 #DIV/0!
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
20-Oct-98	1	1	0.0758	-1.434	0.000	0.670
17-Nov-98	1	2	0.1970	-0.852	0.000	0.723
19-Jan-99	1	3	0.3182	-0.473	0.000	0.724
9-Feb-99	1	4	0.4394	-0.153	0.000	0.663
17-Mar-99	1	5	0.5606	0.153	0.000	0.485
13-Apr-99	2	6	0.6818	0.473	0.693	0.000
3-Jun-99	2	7	0.8030	0.852	0.693	#DIV/0!
15-Jun-99	2	8	0.9242	1.434	0.693	#DIV/0!

update for EV, CV:

tPb		**SR85**		12,313	12300
LN Analysis		**tPb**		0.44	0.438
Discharge, Q		**Q Data, EV=12300 cfs CV=0.438**			
Avg:	**12,313**	**Q Data-based LN**			
SD:	**5,390**	**u**	**lnQ**	**Q**	
CV:	**0.44**	3	10.6	39614	
Min:	**6,150**	0	9.33	11279	
Max:	**23,800**	-3	8.07	3211	
Median:	**11,250**				

	0.953	0.953
	12758.5	12800
u=mLn(Q)+b:	0.54	0.539

update for r2, EV, CV: **r2=0.953, EV=12800 cfs CV=0.539; max r2=0.98**

r2 u,lnQ:	0.953	u	lnQ	Q
slope, m:	1.980	3	10.84	51099
intercept, b:	-18.467	0	9.33	11231
N: 8		-3	7.81	2468
E[Q]:	12758.5	Parameter Estimates		
SD[Q]:	6877	from LN regression		
CV[Q]:	0.54	update graph label		

N: 8

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 #DIV/0! r2 forward
update and rank for new data						
17-Nov-98	6150	1	0.0758	-1.434	8.724	0.953
20-Oct-98	6170	2	0.1970	-0.852	8.727	0.949
9-Feb-99	9980	3	0.3182	-0.473	9.208	0.957
17-Mar-99	11100	4	0.4394	-0.153	9.315	0.966
13-Apr-99	11400	5	0.5606	0.153	9.341	0.994
19-Jan-99	13700	6	0.6818	0.473	9.525	0.990
15-Jun-99	16200	7	0.8030	0.852	9.693	1.000
3-Jun-99	23800	8	0.9242	1.434	10.077	#DIV/0!

Secondary Scale For LN graphs

u	Cumulative Frequecny secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	0.00003	10000	1000
-3.00	0.00135	10000	1000
-2.00	0.02275	10000	1000
-1.00	0.15866	10000	1000
0.00	0.50000	10000	1000
1.00	0.84134	10000	1000
2.00	0.97725	10000	1000
3.00	0.99865	10000	1000
4.00	0.99997	10000	1000

INPUT Data (in red). Update Analysis After Inputing Data. see comment

Station: SR85 **Date:** 19-Jul-00
Chemical: tZn **Analyst:** J.Johnston
Notes:
Input Discharge and Concentration Data below (in red)

	Date	Discharge	Concentration	Load			
Avg:	36,269	9,896	26	1,692	0.00	0.00	0.00
SD:	106	5,753	18	1,478	1.00	1.00	1.00
CV:	0.00	0.58	0.69	0.87			
Min:	36,088	3,350	7	129.8	-1.14	-1.05	-1.06
Max:	36,411	23,800	60	3,841	2.42	1.85	1.45
Median:	36,314	6,700	17	609	-0.56	-0.52	-0.73

tZn SR85 : Concentration v. Discharge, Q Q = mTime +b LnQ = mTime +b

Conc. = mQ+b (r2=0.259)	update r2	0.26	0.259	r2:	0.001	0.027	
r2 Q,[COC]:	0.26	[tZn]	Q	m:	-1.4686	-0.00085	
slope, m:	0.0	16	3350.0	b:	63160	39.96	
intercept, b:	10.5	26	9896.4				
N: 11		49	23800				

LnConc. = mLn(Q)+b (r2=0.611)		update r2	0.61	0.611		
r2 lnQ,ln[COC]:	0.61	ln[tZn]	ln Q	[tZn]	Q	
slope, m:	1.05	2.04	8.12	8	3,350	
intercept, b:	-6.45	3.18	9.20	24	9,896	
N: 11		4.09	10.08	60	23,800	

N= 11

update for new data	Sampling Date	Q Discharge cfs	tZn Concentration ug/L	tZn Load lbs/day	Ln Q	Ln tZn Conc.	Ln tZn Load	tZn SR85 Standardized Values = (x - Avg)/SD Q	Conc	Load	for graph 0
DATA:		x-axis	y-axis	y-axis	x-axis	y-axis	y-axis				
USGS	20-Oct-98	6170	10	331.9	8.73	2.30	5.80	-0.65	-0.90	-0.92	
USGS	17-Nov-98	6150	10	330.9	8.72	2.30	5.80	-0.65	-0.90	-0.92	
USGS	19-Jan-99	13700	50	3685.3	9.53	3.91	8.21	0.66	1.30	1.35	
USGS	9-Feb-99	9980	60	3221.5	9.21	4.09	8.08	0.01	1.85	1.04	
USGS	17-Mar-99	11100	50	2985.9	9.31	3.91	8.00	0.21	1.30	0.88	
USGS	3-Jun-99	23800	30	3841.3	10.08	3.40	8.25	2.42	0.20	1.45	
USGS	15-Jun-99	16200	30	2614.7	9.69	3.40	7.87	1.10	0.20	0.62	
USGS	13-Jul-99	6700	16.9	609.2	8.81	2.83	6.41	-0.56	-0.52	-0.73	
USGS	13-Jul-99	6700	16.9	609.2	8.81	2.83	6.41	-0.56	-0.52	-0.73	
USGS	10-Aug-99	5010	9.3	250.7	8.52	2.23	5.52	-0.85	-0.94	-0.98	
USGS	8-Sep-99	3350	7.2	129.8	8.12	1.97	4.87	-1.14	-1.05	-1.06	

tZn

Concentration over time analysis

	tZn	SR85		r2	Slope, m
				Concentration over time	
	LnConc.=mTime+b All data r2, m:			**0.043**	**-0.00143**
	Time	**Ln[COC]**	**[COC]**		
first:	20-Oct-98	3.28	26		
mid:	3-Jun-99	2.95	19		
last:	8-Sep-99	2.81	17		
	LnConc.=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

Load over time analysis

	tZn	SR85			
				Load over time	
	LnLoad=mTime+b All data r2, m:			**0.040**	**-0.00229**
	Time	**LnLoad**	**Load**		
first:	20-Oct-98	7.25	1,413		
mid:	3-Jun-99	6.74	843		
last:	8-Sep-99	6.52	675		
	LnLoad=mTime+b >'96 r2, m:			**0.000**	**0.00000**
	0-Jan-00	0.00	1		
	8-Sep-99	0.00	1		

	max r2:	0.974		max r2:	0.969	
	Forward time Regression on Ln Concentration(t)			**Forward time Regression on Ln Load(t)**		
	r2	**slope**	**intercept**	**r2**	**slope**	**intercept**
	only on >4 data points: delete last 4 rows			only on >4 data points: delete last 4 rows		
	0.043	-0.00143	54.98	0.040	-0.00229	89.71
	0.220	-0.00367	136.25	0.185	-0.00561	210.61
	0.876	-0.00864	316.76	0.686	-0.01300	479.00
	0.913	-0.01008	369.24	0.684	-0.01504	553.06
	0.914	-0.01171	428.41	0.737	-0.02010	737.30
	0.974	-0.01625	593.75	0.969	-0.03610	1318.97
	0.972	-0.01714	626.02	0.955	-0.03423	1251.09

update for EV, CV:

tZn		**SR85**		
LN Analysis		**tZn**		
Load		**Load Data, EV=1690 lbs/day CV=0.873**		
Avg:	**1,692**	**Load Data-based LN**		
SD:	**1,478**	**u**	**ln tZn Load**	**tZn Load**
CV:	**0.87**	3	9.4	12199
Min:	**129.8**	0	7.15	1274
Max:	**3,841**	-3	4.89	133.1
Median:	**609**			
		1,692	1690	
		0.87	0.873	

u=mLn{Load}+ b:

update for r2, EV, CV: **r2=0.889, EV=2560lbs/day CV=2.55; max r2=0.99**

r2 u,lnLoad:	0.889	u	lnLoad	Load		
slope, m:	0.704	3	11.10	66067		
intercept, b:	-4.818	0	6.84	934		
N: 11		-3	2.58	13.2		
E[Load]:	2558.6	Parameter Estimates			0.889	0.889
SD[Load]:	6525	from LN regression			2558.6	2560
CV[Load]:	2.55	update graph label			2.6	2.55
					max r2	
	tZn	N: 11			0.909	
	Load	**i**	**i-3/8 / N+1/4**	**u**	**Ln**	**r2**
Date	**lbs/day**	**rank**	**plotting points**	**y-axis**	**x-axis**	forward
	Ranked					
update and rank for new data						
8-Sep-99	**129.8**	1	0.0556	-1.593	4.866	0.889
10-Aug-99	**250.7**	2	0.1444	-1.061	5.524	0.848
17-Nov-98	**330.9**	3	0.2333	-0.728	5.802	0.806
20-Oct-98	**331.9**	4	0.3222	-0.461	5.805	0.746
13-Jul-99	**609.2**	5	0.4111	-0.225	6.412	0.654
13-Jul-99	**609.2**	6	0.5000	0.000	6.412	0.513
15-Jun-99	**2614.7**	7	0.5889	0.225	7.869	0.909
17-Mar-99	**2985.9**	8	0.6778	0.461	8.002	
9-Feb-99	**3221.5**	9	0.7667	0.728	8.078	
19-Jan-99	**3685.3**	10	0.8556	1.061	8.212	
3-Jun-99	**3841.3**	11	0.9444	1.593	8.254	

update for EV, CV:

tZn		SR85		26	26.4
LN Analysis		tZn		0.69	0.69
Concentration		Conc. Data, EV=26.4 ug/L CV=0.69			
Avg:	26	Data-based LN			
SD:	18	u	ln[tZn]	[tZn]	
CV:	0.69	3	5.0	141	
Min:	7	0	3.08	22	
Max:	60	-3	1.21	3	
Median:	17				

				0.930	0.93
u=mLn{Conc.}+b:				29.1	29.1
update for r2, EV, CV:	r2=0.93, EV=29.1 ug/L CV=1.01; max r2=0.99			1.013	1.01
r2 u,lnConc:	0.930	u	lnConc.	Conc.	
slope, m:	1.190	3	5.54	254	
intercept, b:	-3.589	0	3.02	20	
N:	11	-3	0.50	2	
E[Conc]:	29.1	Parameter Estimates			
SD[Conc]:	29	from LN regression			
CV[Conc]:	1.01	update graph label			

	tZn	N: 11				max r2 0.930
	Concentration	i	i-3/8 / N+1/4	u	Ln	r2
Date	ug/L Ranked	rank	plotting points	y-axis	x-axis	forward
update and rank for new data						
8-Sep-99	7.2	1	0.0556	-1.593	1.974	0.930
10-Aug-99	9.3	2	0.1444	-1.061	2.230	0.927
20-Oct-98	10	3	0.2333	-0.728	2.303	0.917
17-Nov-98	10	4	0.3222	-0.461	2.303	0.889
13-Jul-99	16.9	5	0.4111	-0.225	2.827	0.870
13-Jul-99	16.9	6	0.5000	0.000	2.827	0.818
3-Jun-99	30	7	0.5889	0.225	3.401	0.816
15-Jun-99	30	8	0.6778	0.461	3.401	
19-Jan-99	50	9	0.7667	0.728	3.912	
17-Mar-99	50	10	0.8556	1.061	3.912	
9-Feb-99	60	11	0.9444	1.593	4.094	

update for EV, CV:

tZn		**SR85**			9,896	9900
LN Analysis		**tZn**			0.58	0.581
Discharge, Q		**Q Data, EV=9900 cfs CV=0.581**				
Avg:	**9,896**	**Q Data-based LN**				
SD:	**5,753**	**u**	**lnQ**	**Q**		
CV:	**0.58**	3	10.7	43176		
Min:	**3,350**	0	9.05	8556		
Max:	**23,800**	-3	7.44	1695		
Median:	**6,700**					
					0.969	0.969
					10270.4	10300
	u=mLn(Q)+b:				0.68	0.678

update for r2, EV, CV: **r2=0.969, EV=10300 cfs CV=0.678; max r2=0.98**

r2 u,lnQ:	0.969	u	lnQ	Q
slope, m:	1.626	3	10.89	53818
intercept, b:	-14.707	0	9.05	8500
N: 11		-3	7.20	1342
E[Q]:	10270.4	Parameter Estimates		
SD[Q]:	6966	from LN regression		
CV[Q]:	0.68	update graph label		

N: 11

Date	Q Discharge cfs Ranked	i rank	i-3/8 / N+1/4 plotting points	u y-axis	Ln x-axis	max r2 = 0.995 r2 forward
update and rank for new data						
8-Sep-99	3350	1	0.0556	-1.593	8.117	0.969
10-Aug-99	5010	2	0.1444	-1.061	8.519	0.956
17-Nov-98	6150	3	0.2333	-0.728	8.724	0.956
20-Oct-98	6170	4	0.3222	-0.461	8.727	0.974
13-Jul-99	6700	5	0.4111	-0.225	8.810	0.974
13-Jul-99	6700	6	0.5000	0.000	8.810	0.965
9-Feb-99	9980	7	0.5889	0.225	9.208	0.995
17-Mar-99	11100	8	0.6778	0.461	9.315	
19-Jan-99	13700	9	0.7667	0.728	9.525	
15-Jun-99	16200	10	0.8556	1.061	9.693	
3-Jun-99	23800	11	0.9444	1.593	10.077	

Secondary Scale For LN graphs

u	Cumulative Frequency secondary y-axis	Candidate x-axis positions x-axis position	
-4.00	**0.00003**	10000	1000
-3.00	**0.00135**	10000	1000
-2.00	**0.02275**	10000	1000
-1.00	**0.15866**	10000	1000
0.00	**0.50000**	10000	1000
1.00	**0.84134**	10000	1000
2.00	**0.97725**	10000	1000
3.00	**0.99865**	10000	1000
4.00	**0.99997**	10000	1000

Final (Revision 2)
VOLUME 9
Appendix C (Continued)

REMEDIAL INVESTIGATION REPORT

Coeur d'Alene Basin
Remedial Investigation/Feasibility Study
September 2001