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Sample Analysis Report

January, 2013

Analyst Initials: SEoP
Date: 02-13-13

Sample Name - Date/Time Sampled	1,4-Dioxane Results (ppb)	R.L. (ppb)	Bromate Results (ppb)	R.L. (ppb)	Bromide Results (ppb)	R.L. (ppb)	Comments	Qualifier(s)
Extraction Wells								
C3								
DOLPH-01-08-13-11:35-1	70	1.0						
TW-20-01-08-13-11:20-1	938	25.0						D
D2								
LB-1-01-08-13-10:15-1	556	10.0						D
LB-3-01-08-13-10:16-1	418	10.0						D
TW-21-01-08-13-10:54-1	147	5.0						D
TW-5-01-08-13-10:48-1	767	10.0						D
TW-9-01-08-13-11:07-1	720	25.0						D
E								
TW-18-01-08-13-11:25-1	275	1.0						D
TW-19-01-08-13-10:17-1	732	25.0						D
SW								
TW-22-01-08-13-11:52-1	585	1.0						D
TW-8-01-08-13-11:50-1	422	10.0						D
Monitoring Wells								
C2								
MW-25s-01-17-13-15:00-1	141	10.0						D
C3								

Sample Name - Date/Time Sampled	1,4-Dioxane Results (ppb)	R.L. (ppb)	Bromate Results (ppb)	R.L. (ppb)	Bromide Results (ppb)	R.L. (ppb)	Comments	Qualifier(s)
MW-125-01-18-13-14:25-1	213	10.0						D
MW-127s-01-18-13-13:10-1	nd	1.0						
MW-128s-01-18-13-11:05-1	nd	1.0						
MW-18d-01-16-13-13:50-1	166	5.0						D
MW-22-01-17-13-11:35-1	1172	50.0						D
MW-28-01-18-13-12:10-1	nd	1.0						
MW-32-01-16-13-11:10-1	12	1.0						
MW-34s-01-16-13-13:15-1	nd	1.0						
MW-35-01-16-13-10:50-1	6	1.0						
MW-37-01-16-13-14:25-1	270	5.0						D
D0								
A2 Cleaning Supply-01-10-13-13:20-1	75	1.0						
D2								
MW-118-01-15-13-13:40-1	73	5.0						D, S
MW-118-01-15-13-13:40-2	92	50.0						D, O, S
MW-11d-01-16-13-11:35-1	106	5.0						D
MW-124s-01-11-13-13:30-1	nd	1.0						
MW-133i-01-15-13-09:45-1	nd	1.0						S
MW-133i-01-15-13-09:45-2	1.6	1.0						E, O, S
MW-133s-01-15-13-09:15-1	1	1.0						S
MW-133s-01-15-13-09:15-2	1.9	1.0						E, O, S
MW-134i-01-15-13-12:35-1	7	1.0						S
MW-134i-01-15-13-12:35-2	9.3	1.0						O, S
MW-134s-01-15-13-12:55-1	8	1.0						S
MW-134s-01-15-13-12:55-2	10	1.0						O, S
MW-17-01-18-13-12:45-1	533	10.0						D
MW-34d-01-16-13-13:20-1	nd	1.0						

Sample Name - Date/Time Sampled	1,4-Dioxane Results (ppb)	R.L. (ppb)	Bromate Results (ppb)	R.L. (ppb)	Bromide Results (ppb)	R.L. (ppb)	Comments	Qualifier(s)
MW-38d-01-16-13-09:45-1	57	1.0						
MW-56s-01-18-13-09:45-1	76	1.0						
MW-92-01-10-13-14:20-1	21	5.0						D
E								
MW-103s-01-09-13-11:20-1	87	5.0						D
MW-112d-01-11-13-10:30-1	nd	1.0						
MW-112i-01-11-13-11:15-1	5	1.0						
MW-112s-01-11-13-09:40-1	nd	1.0						
MW-115-01-17-13-12:55-1	539	10.0						D
MW-116-01-17-13-12:20-1	416	10.0						D
MW-127d-01-18-13-14:00-1	nd	1.0						
MW-128d-01-18-13-11:55-1	nd	1.0						
MW-133d-01-15-13-10:45-1	2	1.0						S
MW-133d-01-15-13-10:45-2	2.7	1.0						E, O, S
MW-134d-01-15-13-12:00-1	5	1.0						S
MW-134d-01-15-13-12:00-0	5.5	1.0						O, S
MW-30d-01-15-13-15:00-1	650	50.0						D, S, A
MW-30d-01-15-13-15:00-2	830	50.0						D, O, S
MW-56d-01-18-13-10:35-1	nd	1.0						
MW-64-01-17-13-09:50-1	42	1.0						
MW-66-01-16-13-10:40-1	2	1.0						
MW-72d-01-17-13-14:40-1	1936	50.0						D
MW-76s-01-17-13-13:50-1	152	5.0						D
MW-84s-01-17-13-13:25-1	722	25.0						D
SW								
MW-10d-01-17-13-10:58-1	780	10.0						D
MW-57-01-17-13-10:10-1	1	1.0						

Sample Name - Date/Time Sampled	1,4-Dioxane Results (ppb)	R.L. (ppb)	Bromate Results (ppb)	R.L. (ppb)	Bromide Results (ppb)	R.L. (ppb)	Comments	Qualifier(s)
Surface Water								
Not Applicable								
HC/HR-01-02-13-08:55-1			nd	2.0				
HC/HR-01-03-13-08:50-1			nd	2.0				
HC/HR-01-04-13-08:20-1			nd	2.0				
HC/HR-01-07-13-08:30-1			nd	2.0				
HC/HR-01-08-13-09:55-1			nd	2.0				
HC/HR-01-09-13-09:55-1			nd	2.0				
HC/HR-01-10-13-08:45-1			nd	2.0				
HC/HR-01-11-13-08:30-1			nd	2.0				
HC/HR-01-14-13-08:40-1			nd	2.0				
HC/HR-01-15-13-08:25-1			nd	2.0				
HC/HR-01-16-13-08:40-1			nd	2.0				
HC/HR-01-17-13-07:50-1			nd	2.0				
HC/HR-01-18-13-08:30-1			nd	2.0				
HC/HR-01-22-13-08:40-1			nd	2.0				
HC/HR-01-23-13-08:20-1			nd	2.0				
HC/HR-01-24-13-08:40-1			nd	2.0				
HC/HR-01-25-13-08:35-1			nd	2.0				
HC/HR-01-28-13-09:20-1			nd	2.0				
HC/HR-01-29-13-08:20-1			nd	2.0				
HC/HR-01-30-13-08:55-1			nd	2.0				
HC/HR-01-31-13-08:55-1			nd	2.0				
Treatment System								
OUTFALL-01-01-13-2			nd	5.0				
OUTFALL-01-01-13-1	2	1.0						

Sample Name - Date/Time Sampled	1,4-Dioxane Results (ppb)	R.L. (ppb)	Bromate Results (ppb)	R.L. (ppb)	Bromide Results (ppb)	R.L. (ppb)	Comments	Qualifier(s)
OUTFALL-01-02-13-2			nd	5.0				
OUTFALL-01-02-13-1	2	1.0						
OUTFALL-01-03-13-2			nd	5.0				
OUTFALL-01-03-13-1	2	1.0						
OUTFALL-01-06-13-1	2	1.0						
OUTFALL-01-06-13-2			nd	5.0				
OUTFALL-01-07-13-1	3	1.0						
OUTFALL-01-07-13-2			7	5.0				
OUTFALL-01-08-13-1	3	1.0						
OUTFALL-01-08-13-2			6	5.0				
OUTFALL-01-09-13-1	3	1.0						
OUTFALL-01-09-13-2			nd	5.0				
OUTFALL-01-10-13-1	3	1.0						
OUTFALL-01-10-13-2			5	5.0				
OUTFALL-01-13-13-1	2	1.0						
OUTFALL-01-13-13-2			nd	5.0				
OUTFALL-01-14-13-1	2	1.0						
OUTFALL-01-14-13-2			nd	5.0				
OUTFALL-01-15-13-1	4	1.0						
OUTFALL-01-15-13-2			nd	5.0				
OUTFALL-01-16-13-1	3	1.0						
OUTFALL-01-16-13-2			nd	5.0				
OUTFALL-01-17-13-1	2	1.0						
OUTFALL-01-17-13-2			nd	5.0				
OUTFALL-01-20-13-1	3	1.0						
OUTFALL-01-20-13-2			nd	5.0				
OUTFALL-01-21-13-1	3	1.0						

Sample Name - Date/Time Sampled	1,4-Dioxane Results (ppb)	R.L. (ppb)	Bromate Results (ppb)	R.L. (ppb)	Bromide Results (ppb)	R.L. (ppb)	Comments	Qualifier(s)
OUTFALL-01-21-13-2			nd	5.0				
OUTFALL-01-22-13-1	3	1.0						
OUTFALL-01-22-13-2			nd	5.0				
OUTFALL-01-23-13-1	3	1.0						
OUTFALL-01-23-13-2			nd	5.0				
OUTFALL-01-24-13-1	2	1.0						
OUTFALL-01-24-13-2			nd	5.0				
OUTFALL-01-27-13-1	2	1.0						
OUTFALL-01-27-13-2			nd	5.0				
OUTFALL-01-28-13-2			nd	5.0				
OUTFALL-01-28-13-1	3	1.0						
OUTFALL-01-29-13-1	3	1.0						
OUTFALL-01-29-13-2			nd	5.0				
OUTFALL-01-30-13-2			nd	5.0				
OUTFALL-01-30-13-1	3	1.0						
OUTFALL-01-31-13-2			5	5.0				
OUTFALL-01-31-13-1	3	1.0						
Red Pond-01-02-13-08:20-1	414	10.0						D
Red Pond-01-07-13-09:55-1	430	10.0						D
Red Pond-01-14-13-08:10-1	469	10.0						D
Red Pond-01-22-13-09:00-1	464	10.0						D
Red Pond-01-28-13-11:00-1	443	10.0						D

Note: *In the interest of good laboratory practice the following reporting practice has been changed: Reporting limits now reflect the dilution required to keep the sample in the calibrated range of the instrument. It in no way negatively affects the sensitivity of the determination at the instrument.*

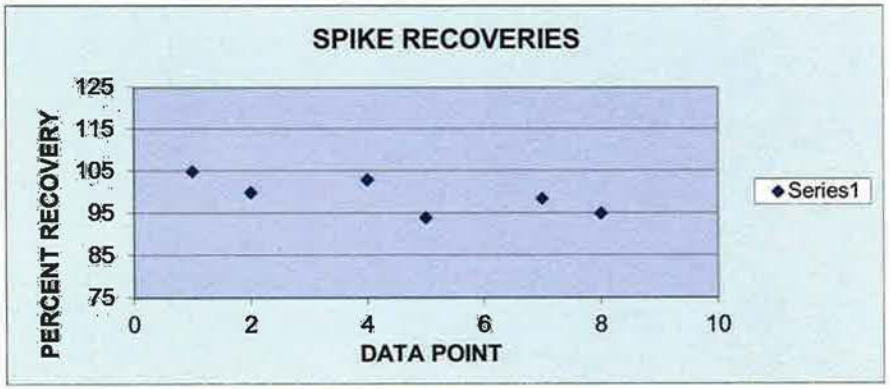
Qualifier Code:	Qualifier Description
A	Value reported is the mean of two or more determinations.
D	Analyte value quantified from a dilution, reporting limit is raised to reflect dilution
H	Recommended laboratory holding time was exceeded.
O	Samples analyzed in outside laboratory
S	Split samples: one analyzed at PALL and one by the Department of Environmental Quality(O)
E	The analysis is performed using selected ion monitoring (SIM). Due to the nature of 1,4-dioxane, results reported below 5µg/L should be considered estimated.

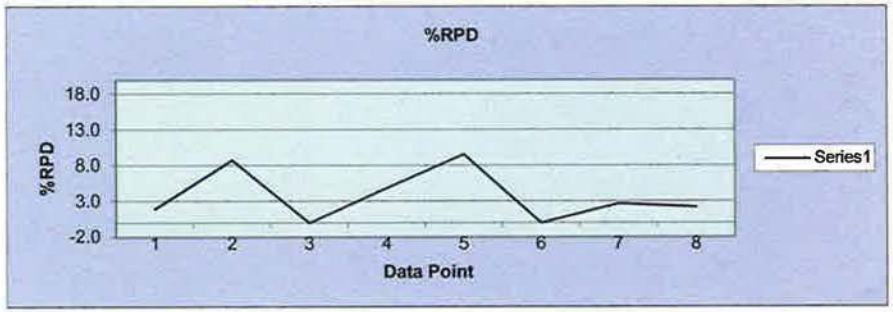
Control Chart for 01/2013 MS/MSD & Repeat %Recoveries

Analyst: Susan E.O. Peters 02-13-13

IC: Metrohm
Report Date: 2/13/2013
Chemist: Susan E.O. Peters
Dept: Environmental
Analyte: Bromate
Start date: 1/1/2013
End date: 1/31/2013
Desired level: 100%

	MS Recoveries and Replicate Recoveries							
Analysis Date	Spike 1 ---- % Rec	Spike 2 ----- % Rec	Ave. Spike Recovery (75-125%)	%RPD Spike Recovery (0-20%	Std. Dev. Spikes	Ave. Sample Replicates	Std. Dev. Sample Replicates	n=
1/3/2013	106	109	105	2.0	2.2	1.97	0.41	3
1/3/2013	105	95	100	8.8	7.1	2.10	0.07	2
1/3/2013	110	na	na	na	na	2.77	0.13	2
1/21/2013	100	106	103	4.90	4.24	3.79	0.38	2
1/21/2013	88	100	94	9.60	8.50			
1/21/2013	104	na	na	na	na			
1/25/2013	100	97	99	2.70	2.12			
1/25/2013	97	93	95	2.2	2.8			
1/25/2013	113	95	104	8.9	12.7			
1/29/2013	109	101	105	5.1	5.7			



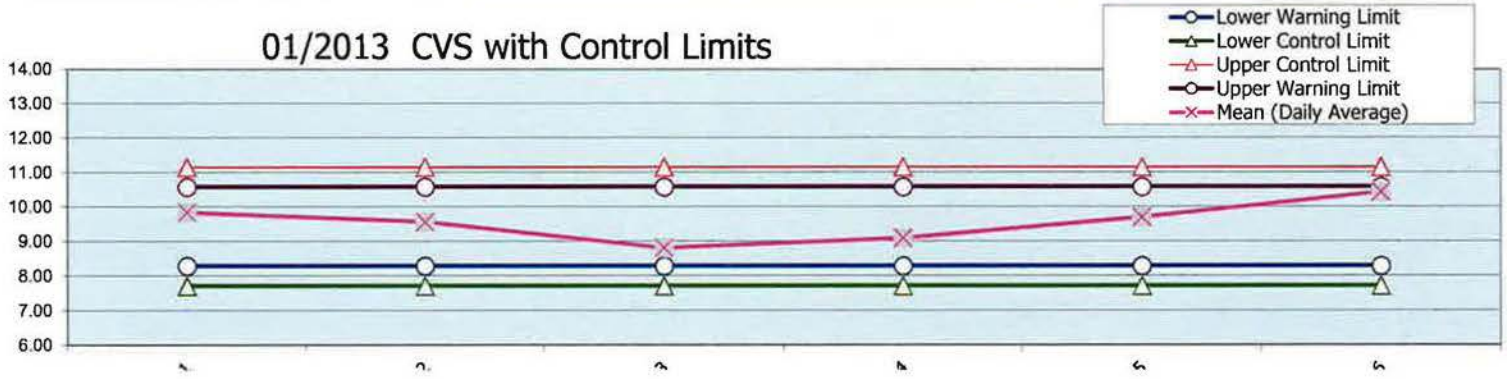


Control Chart for 01/2013 CVS

Analyst: Susan E.O. Peters 02-13-13

GC/MS Data: #1 and #2
Report Date: 2/13/2013
Chemist: Susan E.O. Peters
Dept: Environmental
Analyte: 1,4-dioxane
Start date: 1/1/2013
End date: 1/31/2013
Desired level: 100%

Date	CVS Values				Mean (Daily Average)	Sample Mean (All Individual Data)	Daily Standard Deviation	Daily Average Sample Standard Deviation	Lower Control Limit	Upper Control Limit	Lower Warning Limit	Upper Warning Limit
	CVS 1	CVS 2	CVS 3	CVS 4								
1/16/2013	10.25	8.19	11.44	9.45	9.83	9.43	1.37	0.57	7.72	11.15	8.29	10.58
1/17/2013	9.63	9.00	8.75	10.87	9.56	9.43	0.95	0.57	7.72	11.15	8.29	10.58
1/22/2013	8.28	10.11	8.14	8.71	8.81	9.43	0.90	0.57	7.72	11.15	8.29	10.58
1/23/2013	8.63	8.92	9.27	9.53	9.09	9.43	0.39	0.57	7.72	11.15	8.29	10.58
1/25/2013	9.22	9.65	10.20		9.69	9.43	0.49	0.57	7.72	11.15	8.29	10.58
1/29/2013	10.43				10.43	9.43	NA	0.57	7.72	11.15	8.29	10.58

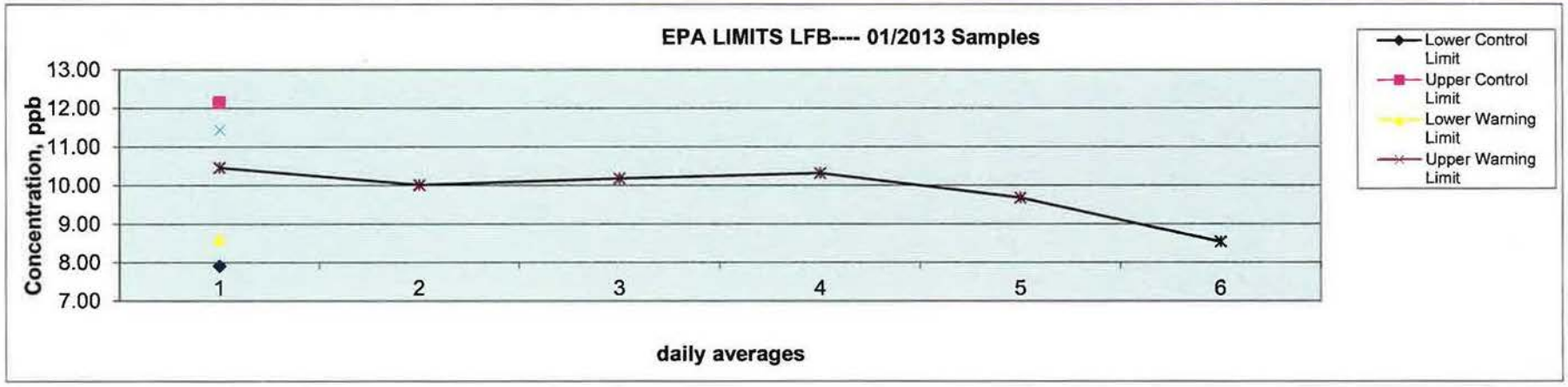


Control Chart for 1/2013 LFB

Analyst: Susan E.O. Peters 02-13-13

GC/MS Data: #2
Report Date: 2/13/2013
Chemist: Susan E.O. Peters
Dept: Environmental
Analyte: 1,4-dioxane
Start date: 1/1/2013
End date: 1/31/2013
Desired level: 100%

Date	LFB Values						Mean (Daily Average)	Sample Mean (All Individual Data)	Daily Standard Deviation	Daily Average Sample Standard Deviation	Lower Control Limit	Upper Control Limit	Lower Warning Limit	Upper Warning Limit
	LFB 1	LFB 2	LFB 3	LFB 4	LFB 5	LFB 6								
1/16/2013	10.67	10.13	10.05	9.25	11.59	11.09	10.46	10.03	0.83	0.71	7.92	12.15	8.62	11.44
1/17/2013	10.83	9.85	11.10	9.41	8.99	9.91	10.02	10.03	0.81					
1/22/2013	10.37	9.47	9.97	11.87	8.01	11.40	10.18	10.03	na					
1/23/2013	9.15	11.09	11.02	10.03	9.71	10.89	10.32	10.03	na					
1/25/2013	11.28	8.51	8.97	9.52	9.68	10.11	9.68	10.03	0.96					
1/29/2013	8.29	8.78					8.54	10.03	0.35					

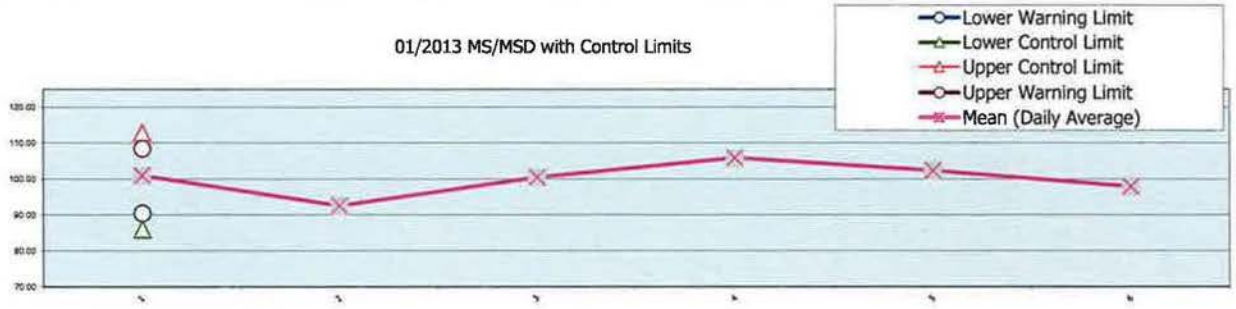


Control Chart for 01/2013 MS/MSD %Recoveries

Analyst: Susan E.O. Peters 02-13-13

GC/MS Data: #2
Report Date: 2/13/2013
Chemist: Susan E.O. Peters
Dept: Environmental
Analyte: 1,4-dioxane
Start date: 1/1/2013
End date: 1/31/2013
Desired level: 100%

	Matrix Spike % Recovery Values														
Date	MS 1	MSD 1	MS 2	MSD 2	MS 3	MSD 3	MS 4	Mean (Daily Average)	Sample Mean (All Individual Data)	Daily Standard Deviation	Daily Average Sample Standard Deviation	Lower Control Limit	Upper Control Limit	Lower Warning Limit	Upper Warning Limit	Mean RPD (Individual Data)
1/16/2013	113	96	109	86	108	84		101 02	99.53	9.83	4.48	86.10	112.96	90.58	108.48	97.10
1/17/2013	92	100	100	100	89	81	86	92.57								
1/22/2013	101	116	95	90	94	93		100.50								
1/23/2013	104	101	105	111	94	112	114	105.86								
1/25/2013	117	90	98	93	105	111		102.33								
1/29/2013	92	104						98.00								

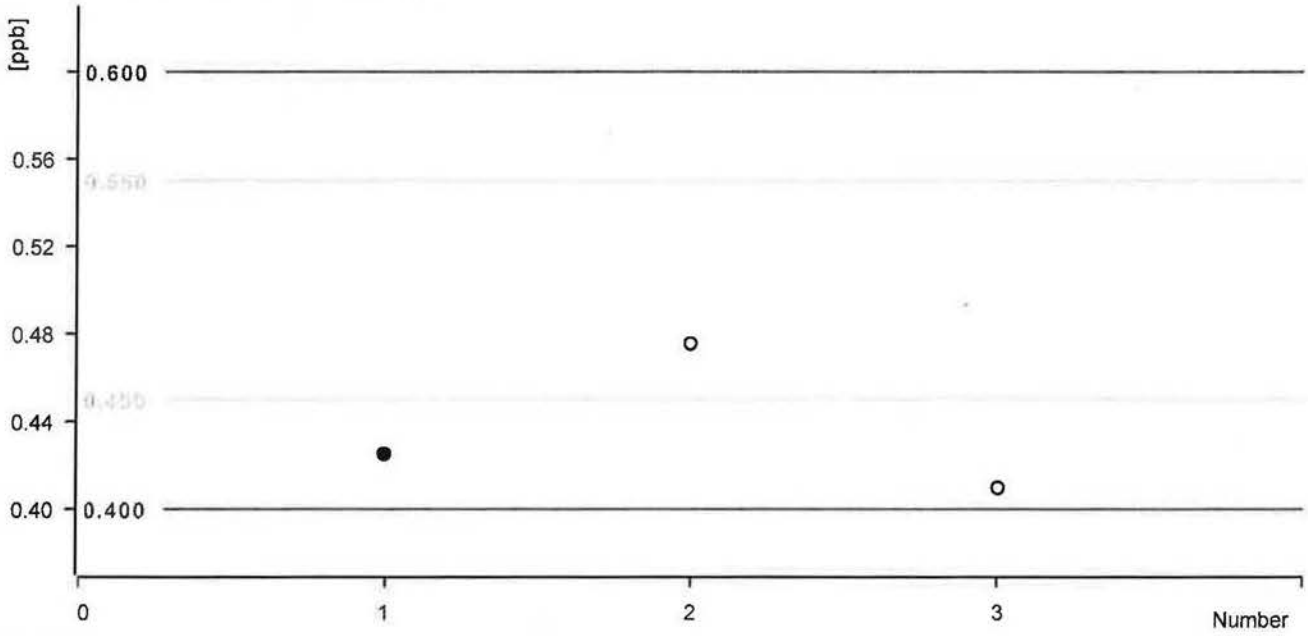


Control chart

SEOP 02-13-13

Comment

ICCS/LFB concentration, ppb



Statistics

Mean value:	0.437 ppb	Absolute standard deviation:	0.034 ppb
Minimum:	0.410 ppb	Relative standard deviation:	7.886 %
Maximum:	0.476 ppb	Number of determinations:	3

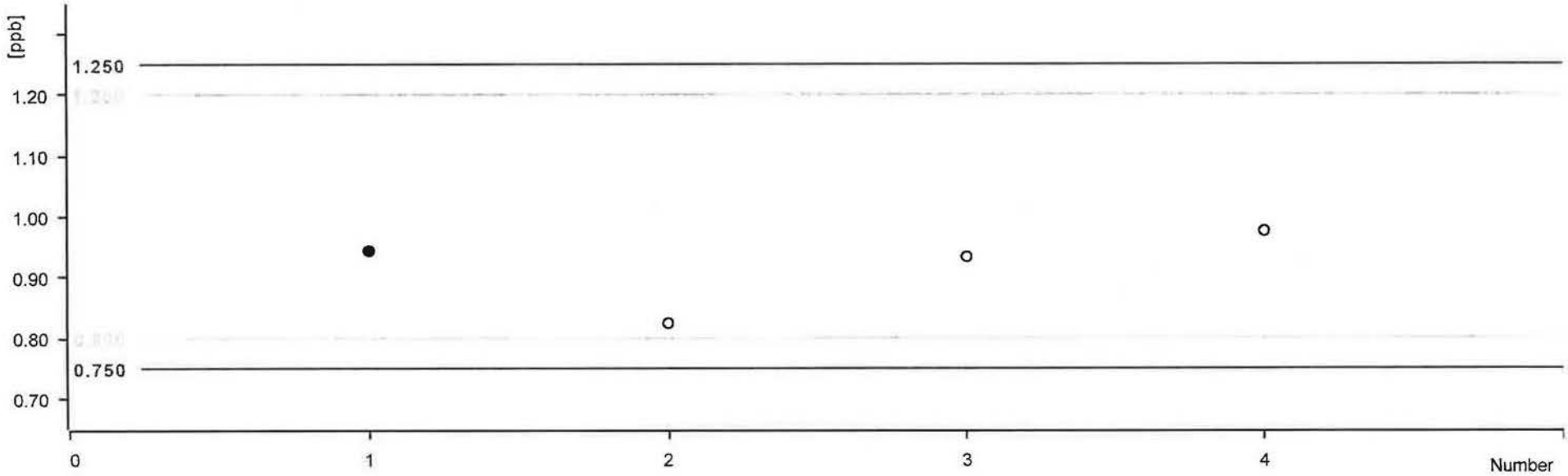
	Date	Number	Ident	Sample type	Method	ICCS/LFB concentration, ppb	Statistics
1	2013-01-03 16:30:02 UTC-5	1	ICCS/LFB STD1	Sample	12072012 300.1	0.425 ppb	on
2	2013-01-21 13:36:41 UTC-5	2	ICCS/LFB	Sample	01082013 300.1	0.476 ppb	on
3	2013-01-25 15:55:07 UTC-5	3	ICCS/LFB	Sample	01082013 300.1	0.410 ppb	on

Control chart

SEOP 02-13-13

Comment

ppb Bromate Concentration ICCS



Statistics

Mean value:	0.919 ppb	Absolute standard deviation:	0.066 ppb
Minimum:	0.824 ppb	Relative standard deviation:	7.198 %
Maximum:	0.976 ppb	Number of determinations:	4

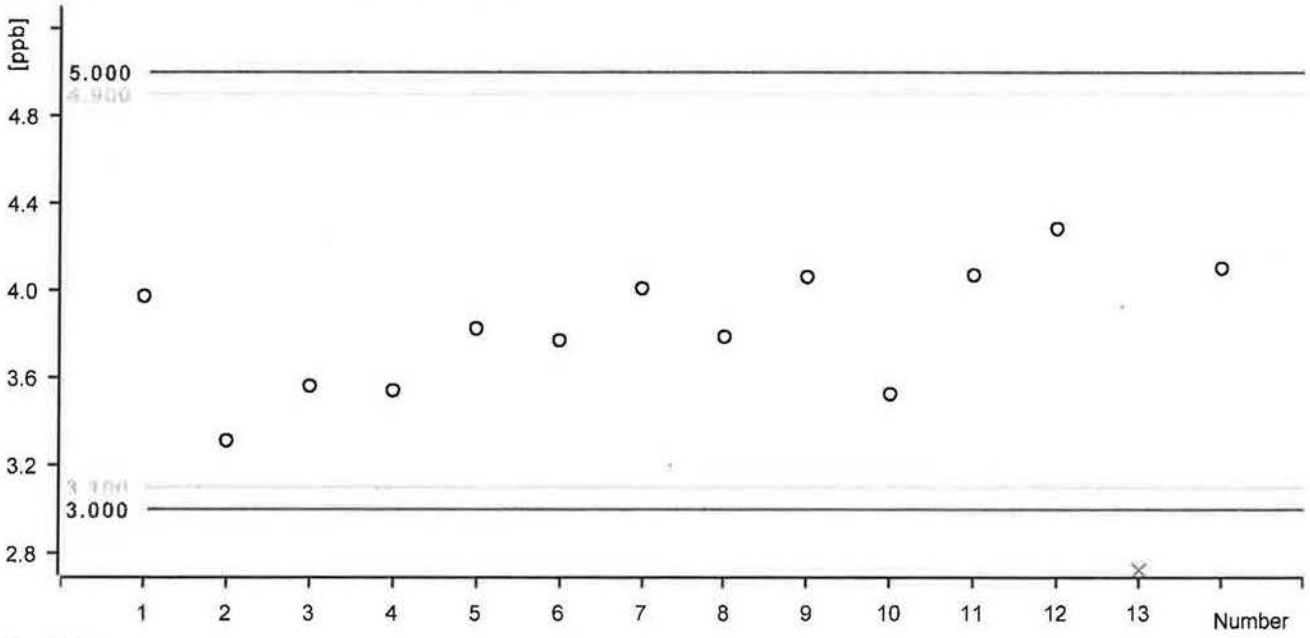
	Date	Number	Ident	Sample type	Method	ppb Bromate Concentration ICCS	Statistics
1	2013-01-03 17:07:44 UTC-5	1	ICCS/LFB STD2	Sample	12072012 300.1	0.943 ppb	on
2	2013-01-03 17:45:28 UTC-5	2	ICCS/LFB STD2	Sample	12072012 300.1	0.824 ppb	on
3	2013-01-30 09:11:55 UTC-5	3	ICCS/LFB	Sample	01082013 300.1	0.933 ppb	on
4	2013-02-01 10:21:09 UTC-5	4	ICCS/LFB	Sample	01082013 300.1	0.976 ppb	on

Control chart

SEOP 02-13-13

Comment

ECCS. CCCS Bromate std 4ppb



Statistics

Mean value:	3.833 ppb	Absolute standard deviation:	0.284 ppb
Minimum:	3.312 ppb	Relative standard deviation:	7.414 %
Maximum:	4.285 ppb	Number of determinations:	13

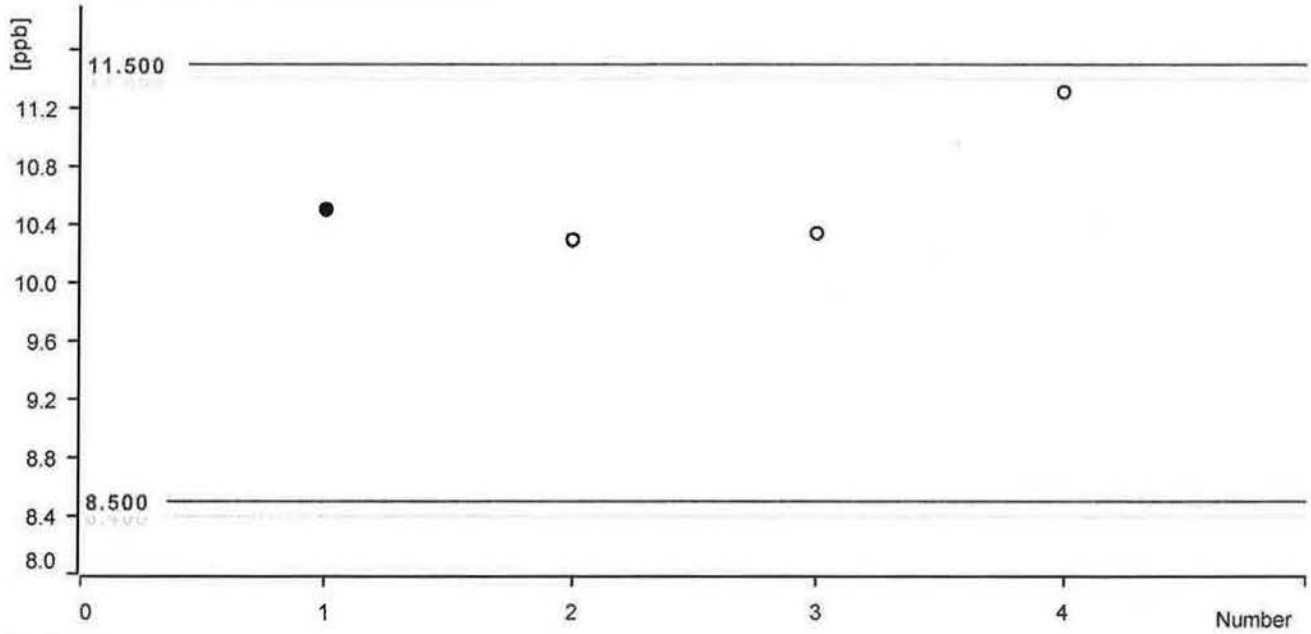
	Date	Number	Ident	Sample type	Method	ECCS. CCCS Bromate std 4ppb	Statistics
1	2012-10-24 09:48:02 UTC-4	1	ECCS/CCCS	Sample	10202012 300.1	3.973 ppb	on
2	2013-01-04 04:26:42 UTC-5	2	ECCS/CCCS	Sample	12072012 300.1	3.312 ppb	on
3	2013-01-04 10:43:55 UTC-5	3	ECCS/CCCS	Sample	12072012 300.1	3.562 ppb	on
4	2013-01-04 11:21:43 UTC-5	4	ECCS/CCCS	Sample	12072012 300.1	3.541 ppb	on
5	2013-01-04 21:25:57 UTC-5	5	ECCS/CCCS	Sample	12072012 300.1	3.825 ppb	on
6	2013-01-04 22:03:41 UTC-5	6	ECCS/CCCS	Sample	12072012 300.1	3.771 ppb	on
7	2013-01-22 01:33:21 UTC-5	7	ECCS/CCCS	Sample	01082013 300.1	4.010 ppb	on
8	2013-01-22 02:11:05 UTC-5	8	ECCS/CCCS	Sample	01082013 300.1	3.788 ppb	on
9	2013-01-22 12:52:39 UTC-5	9	ECCS/CCCS	Sample	01082013 300.1	4.062 ppb	on
10	2013-01-22 13:30:22 UTC-5	10	ECCS/CCCS	Sample	01082013 300.1	3.525 ppb	on
11	2013-01-26 08:15:53 UTC-5	11	ECCS/CCCS	Sample	01082013 300.1	4.072 ppb	on
12	2013-01-26 08:53:36 UTC-5	12	ECCS/CCCS	Sample	01082013 300.1	4.285 ppb	on
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	2013-01-29 19:20:51 UTC-5	14	ECCS/CCCS	Sample	01082013 300.1	4.104 ppb	on

Control chart

BEOP 02-13-13

Comment

Bromate 10PPB concentration



Statistics

Mean value:	10.612 ppb	Absolute standard deviation:	0.475 ppb
Minimum:	10.294 ppb	Relative standard deviation:	4.472 %
Maximum:	11.311 ppb	Number of determinations:	4

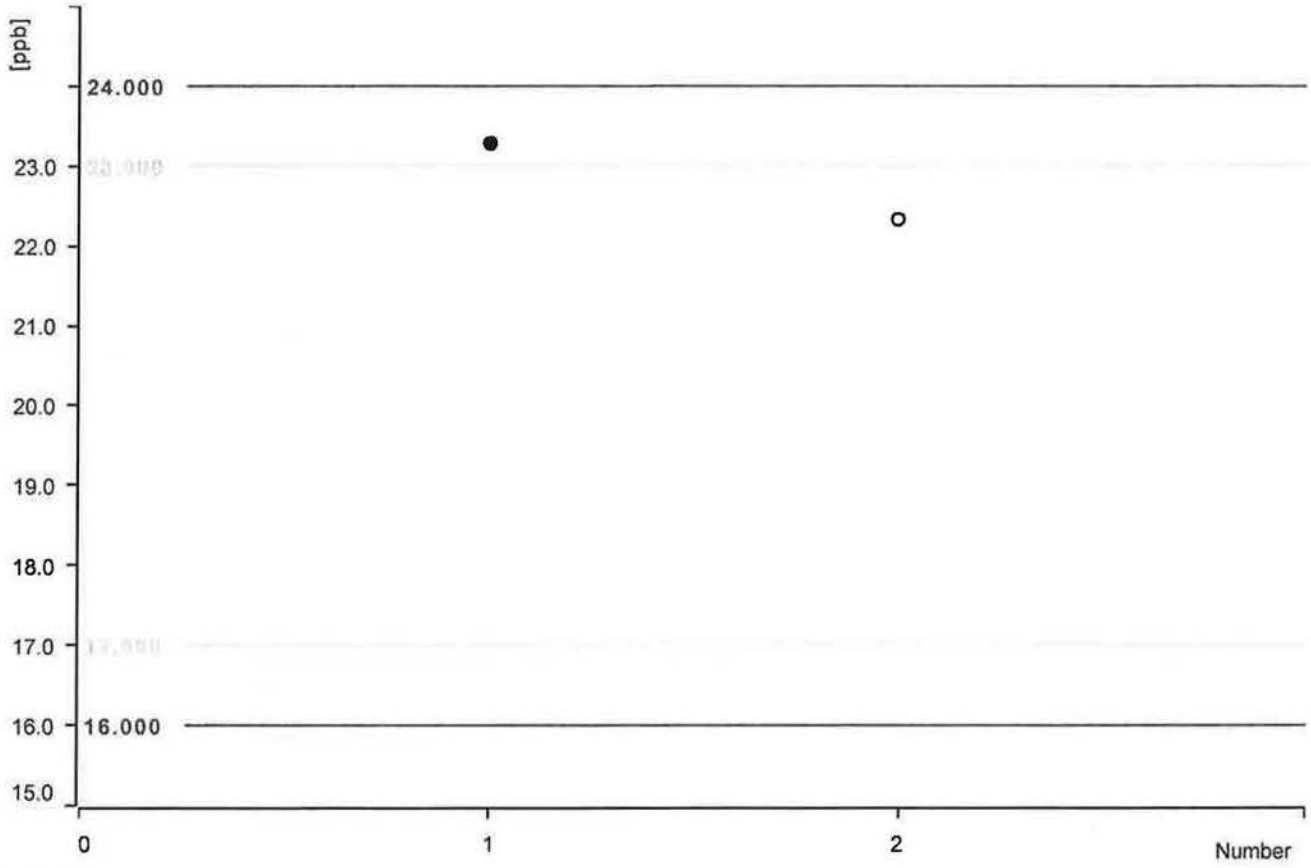
	Date	Number	Ident	Sample type	Method	Bromate 10PPB concentration	Statistics
1	2013-01-22 14:08:05 UTC-5	1	ECCS/CCCS	Sample	01082013 300.1	10.503 ppb	on
2	2013-01-22 14:45:49 UTC-5	2	ECCS/CCCS	Sample	01082013 300.1	10.294 ppb	on
3	2013-01-22 22:56:10 UTC-5	3	ECCS/CCCS	Sample	01082013 300.1	10.339 ppb	on
4	2013-01-22 23:33:54 UTC-5	4	ECCS/CCCS	Sample	01082013 300.1	11.311 ppb	on

Control chart

3EOP 02-13-13

Comment

20PPB BROMATE



Statistics

Mean value:	22.806 ppb	Absolute standard deviation:	0.675 ppb
Minimum:	22.329 ppb	Relative standard deviation:	2.958 %
Maximum:	23.283 ppb	Number of determinations:	2

	Date	Number	Ident	Sample type	Method	20PPB BROMATE	Statistics
1	2013-01-23 00:11:36 UTC-5	1	ECCS/CCCS	Sample	01082013 300.1	23.283 ppb	on
2	2013-01-23 00:49:20 UTC-5	2	ECCS/CCCS	Sample	01082013 300.1	22.329 ppb	on