



Pall Corporation

# Sample Analysis Report

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December, 2013

Analyst Initials: SEOP  
Date: 01-03-14

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)
<b>Extraction Wells</b>								
<b>C3</b>								
DOLPH-12-02-13-11:29-1	87	5.0						D
TW-20-12-02-13-11:46-1	1100	50.0						D
<b>D2</b>								
LB-1-12-02-13-08:35-1	550	10.0						D
LB-4-12-11-13-13:40-1	860	10.0						D
TW-21-12-02-13-11:14-1	120	5.0						D
TW-5-12-02-13-11:21-1	690	25.0						D
TW-9-12-02-13-11:39-1	920	50.0						D
<b>E</b>								
TW-11-12-02-13-11:23-1	230	10.0						D
TW-18-12-02-13-11:28-1	430	50.0						D
TW-19-12-02-13-08:10-1	810	50.0						D
<b>Marshy</b>								
PW-1-12-02-13-11:29-1	1500	50.0						D
<b>SW</b>								
TW-22-12-02-13-12:01-1	890	50.0						D
TW-8-12-02-13-11:59-1	690	25.0						D
<b>Monitoring Wells</b>								

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)
<b>D0</b>								
A2 Cleaning Supply-12-04-13-11:15-1	75	1.0						
<b>E</b>								
MW-103s-12-03-13-11:35-1	79	1.0						
MW-112i-12-03-13-11:10-1	9	1.0						
MW-76s-12-03-13-12:05-1	350	10.0						D
MW-84s-12-03-13-13:50-1	500	10.0						D
<b>Surface Water</b>								
<b>Not Applicable</b>								
HC/HR-12-02-13-08:35-1				nd	2.0			
HC/HR-12-03-13-08:15-1				nd	2.0			
HC/HR-12-04-13-08:35-1				nd	2.0			
HC/HR-12-05-13-08:30-1				nd	2.0			
HC/HR-12-06-13-08:45-1				nd	2.0			
HC/HR-12-09-13-08:25-1				nd	2.0			
HC/HR-12-10-13-08:45-1				nd	2.0			
HC/HR-12-11-13-08:00-1				nd	2.0			
HC/HR-12-12-13-08:15-1				nd	2.0			
HC/HR-12-13-13-08:15-1				nd	2.0			
HC/HR-12-16-13-08:15-1				nd	2.0			
HC/HR-12-17-13-08:20-1				nd	2.0			
HC/HR-12-18-13-08:15-1				nd	2.0			
HC/HR-12-19-13-08:10-1				nd	2.0			
HC/HR-12-20-13-08:20-1				nd	2.0			
HC/HR-12-23-13-08:10-1				nd	2.0			
HC/HR-12-24-13-09:00-1				nd	2.0			

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)
HC/HR-12-26-13-08:45-1			nd	2.0				
HC/HR-12-27-13-08:15-1			nd	2.0				
HC/HR-12-30-13-08:15-1			nd	2.0				
HC/HR-12-31-13-07:00-1			nd	2.0				
<b>Treatment System</b>								
OUTFALL-12-01-13-1	6	1.0						
OUTFALL-12-01-13-2			6	5.0				
OUTFALL-12-02-13-1	6	1.0						
OUTFALL-12-02-13-2			7	5.0				
OUTFALL-12-03-13-1	6	1.0						
OUTFALL-12-03-13-2			7	5.0				
OUTFALL-12-04-13-1	6	1.0						
OUTFALL-12-04-13-2			6	5.0				
OUTFALL-12-05-13-1	7	1.0						
OUTFALL-12-05-13-2			8	5.0				
OUTFALL-12-08-13-1	6	1.0						
OUTFALL-12-08-13-2			8	5.0				
OUTFALL-12-09-13-1	7	1.0						
OUTFALL-12-09-13-2			6	5.0				
OUTFALL-12-10-13-1	5	1.0						
OUTFALL-12-10-13-2			5	5.0				
OUTFALL-12-11-13-1	4	1.0						
OUTFALL-12-11-13-2			7	5.0				
OUTFALL-12-12-13-1	5	1.0						
OUTFALL-12-12-13-2			7	5.0				
OUTFALL-12-15-13-1	4	1.0						
OUTFALL-12-15-13-2			7	5.0				

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-12-16-13-1	4	1.0						
OUTFALL-12-16-13-2			9	5.0				
OUTFALL-12-17-13-1	4	1.0						
OUTFALL-12-17-13-2			7	5.0				
OUTFALL-12-18-13-1	5	1.0						
OUTFALL-12-18-13-2			6	5.0				
OUTFALL-12-19-13-1	5	1.0						
OUTFALL-12-19-13-2			8	5.0				
OUTFALL-12-22-13-1	5	1.0						
OUTFALL-12-22-13-2			5	5.0				
OUTFALL-12-23-13-1	5	1.0						
OUTFALL-12-23-13-2			nd	5.0				
OUTFALL-12-24-13-1	5	1.0						
OUTFALL-12-24-13-2			6	5.0				
OUTFALL-12-26-13-1	5	1.0						
OUTFALL-12-26-13-2			nd	5.0				
OUTFALL-12-29-13-1	5	1.0						
OUTFALL-12-29-13-2			nd	5.0				
OUTFALL-12-30-13-1	5	1.0						
OUTFALL-12-30-13-2			5	5.0				
OUTFALL-12-31-13-1	5	1.0						
OUTFALL-12-31-13-2			5	5.0				
Red Pond-12-02-13-07:48-1	490	10.0						D
Red Pond-12-09-13-07:10-1	580	10.0						D
Red Pond-12-16-13-07:15-1	460	10.0						D
Red Pond-12-23-13-09:33-1	500	10.0						D
Red Pond-12-31-13-08:00-1	480	10.0						D

**Qualifier Code:**

**Qualifier Description**

D

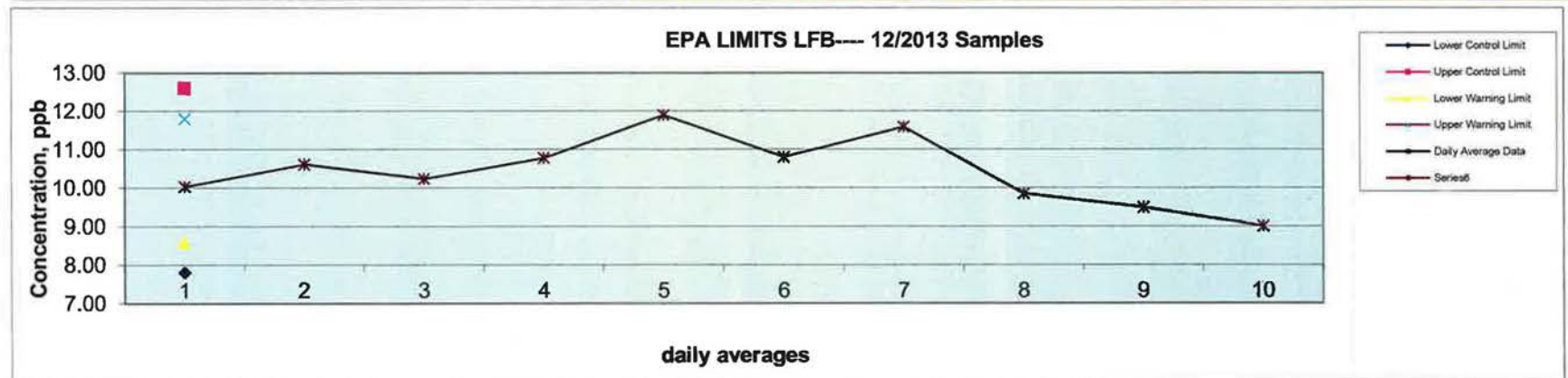
Analyte value quantified from a dilution, reporting limit is raised to reflect dilution

# Control Chart for 12/2013 LFB

Analyst: SEOP 01-03-14

GC/MS Data: #2  
 Report Date: 1/3/2014  
 Chemist: Susan E.O. Peters  
 Dept: Environmental  
 Analyte: 1,4-dioxane  
 Start date: 12/1/2013  
 End date: 12/30/2013  
 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								
12/2/2013	10.04	9.77	10.31				10.04	10.21	0.27	0.80	7.81	12.60	8.61	11.80
12/3/2013	10.56	10.48	10.81				10.62	10.21	0.17					
12/4/2013	9.79	10.26	9.55	11.37			10.24	10.21	0.81					
12/5/2013	10.83	11.90	9.61				10.78	10.21	1.15					
12/6/2013	11.92	11.87					11.90	10.21	0.04					
12/9/2013	11.88	9.73					10.81	10.21	1.52					
12/10/2013	11.83	11.34					11.59	10.21	0.35					
12/11/2013	9.85						9.85	10.21	na					
12/13/2013	10.10	9.73	8.76	9.4			9.49	10.21	0.57					
12/16/2013	8.76	9.3					9.02	10.21	0.37					
12/17/2013	10.15	10.15					10.15	10.21	0.00					
12/19/2013	9.95	9.98					9.97	10.21	0.02					
12/20/2013	9.18	9.83					9.51	10.21	0.46					
12/23/2013	9.94	9.23					9.59	10.21	0.50					
12/26/2013	10.59	8.69					9.64	10.21	1.34					



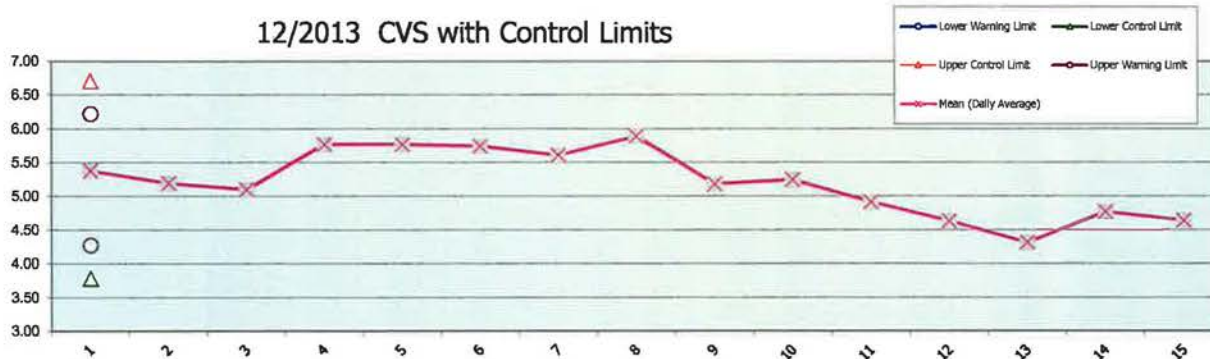


Control Chart for 12/2013 CVS

Analyst: DEP 01-03-14

GC/MS Data: #2  
 Report Date: 1/3/2014  
 Chemist: Susan E.O. Peters  
 Dept: Environmental  
 Analyte: 1,4-dioxane  
 Start date: 12/1/2013  
 End date: 12/31/2013  
 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								
12/2/2013	4.84	5.92			5.38	5.25	0.76	0.49	3.79	6.71	4.28	6.22
12/3/2013	5.31	5.08			5.20	5.25	0.16					
12/4/2013	4.97	4.97	4.89	5.57	5.10	5.25	0.32					
12/5/2013	5.77				5.77	5.25	na					
12/6/2013	5.77	5.76			5.76	5.25	na					
12/9/2013	5.99	5.49			5.74	5.25	0.35					
12/10/2013	5.47	5.74			5.61	5.25	0.19					
12/11/2013	5.89				5.89	5.25	na					
12/13/2013	5.50	4.86			5.18	5.25	na					
12/16/2013	5.91	4.58			5.25	5.25	0.94					
12/17/2013	4.44	5.39			4.92	5.25	0.67					
12/19/2013	4.63				4.63	5.25	na					
12/20/2013	4.31				4.31	5.25	na					
12/23/2013	4.77				4.77	5.25	na					
12/26/2013	4.64				4.64	5.25	na					



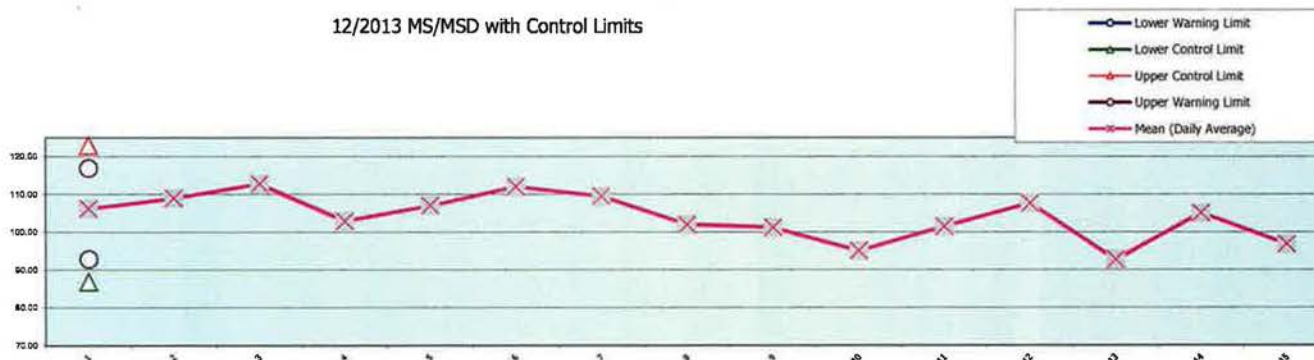
# Control Chart for 12/2013 MS/MSD %Recoveries

Analyst: SEOP 01-03-14

GC/MS Data: #2  
 Report Date: 1/3/2014  
 Chemist: Susan E.O. Peters  
 Dept: Environmental  
 Analyte: 1,4-dioxane  
 Start date: 12/1/2013  
 End date: 12/31/2013  
 Desired level: 100%

Date	Matrix Spike % Recovery 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	Mean RPD (Individual Data)
	MS 1	MSD 1	MS 2	MSD 2	Replicate Ave.	Std. Dev.	# data pts									
12/2/2013	114		109	96	7.19	1.06	2	106.20	104.92	7.88	6.01	86.88	122.95	92.90	116.94	104.92
12/3/2013	107	111			5.82	0.59	2	109.00								
12/4/2013	114	108	118	111	5.92	0.04	2	112.75								
12/5/2013	100	106			6.06	0.22	2	102.90								
12/6/2013	103	111			6.83	0.07	2	107.00								
12/9/2013	112	112			5.81	0.61	2	112.00								
12/10/2013	113	106			6.59	0.43	2	109.50								
12/11/2013	102				5.46	0.76	2	102.00								
12/13/2013	107	95			4.60	0.20	2	101.15								
12/16/2013	105	85			4.45	0.47	2	95.00								
12/17/2013	100	103			4.42	0.34	2	101.50								
12/19/2013	99	108	110	114	5.46	0.22	2	107.63								
12/20/2013	98	88			na	na	na	92.65								
12/23/2013	97	113			4.88	0.14	2	105.10								
12/26/2013	98	96			5.33	0.55	2	96.75								

12/2013 MS/MSD with Control Limits

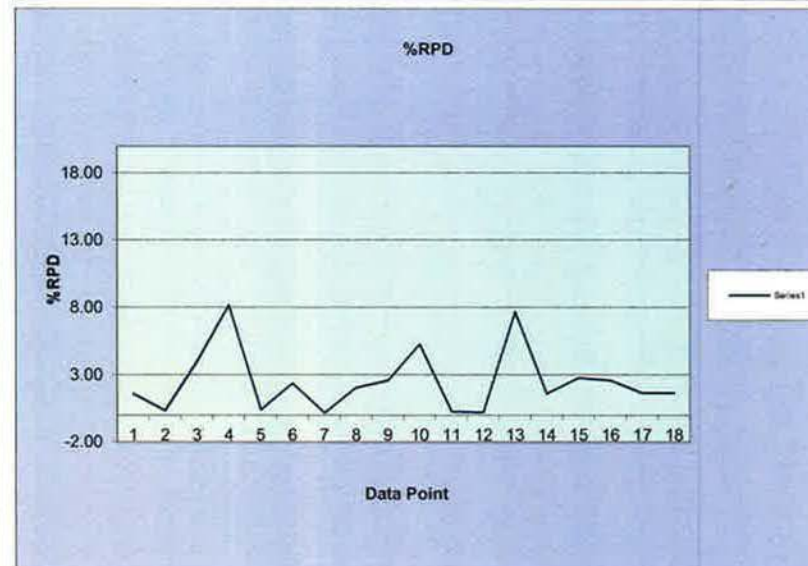
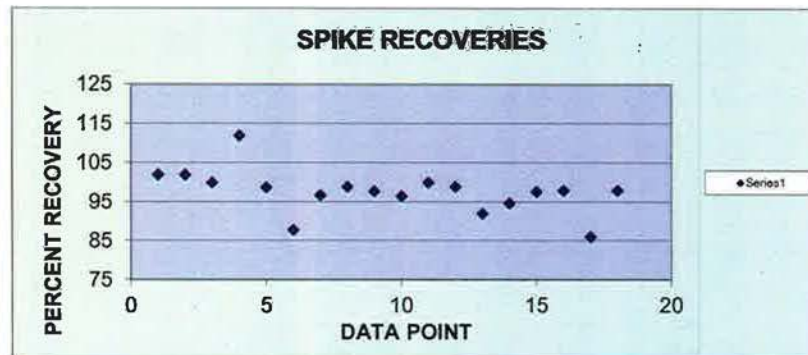


# Control Chart for 12/2013 MS/MSD & Repeat %Recoveries

Analyst: Susan E.O. Peters 01-3-14  
(SEOP)

IC: Metrohm  
 Report Date: 1/3/2014  
 Chemist: Susan E.O. Peters  
 Dept: Environmental  
 Analyte: Bromate  
 Start date: 12/1/2013  
 End date: 12/31/2013  
 Desired level: 100%

Analysis Date	MS Recoveries and Replicate Recoveries							
	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 =
12/5/2013	103	101	102	1.60	1.41	1.18	0.10	2
12/5/2013	102	102	102	0.37	0.48	1.59	0.16	2
12/9/2013	98	103	100	4.03	3.13			
12/10/2013	107	117	112	8.20	7.07	1.44	0.23	3
12/12/2013	99	99	99	0.44	0.35	1.10	0.06	2
12/12/2013	87	89	88	2.40	1.69	1.07	0.05	2
12/13/2013	97	97	97	0.21	0.18	1.44	0.02	2
12/13/2013	98	100	99	2.05	1.63	1.35	0.10	2
12/16/2013	97	99	98	2.60	1.48	1.38	0.24	2
12/17/2013	100	93	97	5.30	4.50	1.83	0.07	2
12/18/2013	101	100	100	0.30	0.71	1.44	0.05	2
12/19/2013	99	99	99	0.22	0.17	1.25	0.03	2
12/20/2013	88	97	92	7.70	5.90	1.53	0.04	2
12/23/2013	94	96	95	1.61	1.27	1.03	0.04	2
12/26/2013	96	99	98	2.80	2.10	1.22	0.02	2
12/26/2013	97	100	98	2.60	1.90	0.64	0.22	3
12/31/2013	85	86	86	1.66	1.27	0.83	0.11	2
12/31/2013	99	97	98	1.66	1.41	0.92	0.02	2



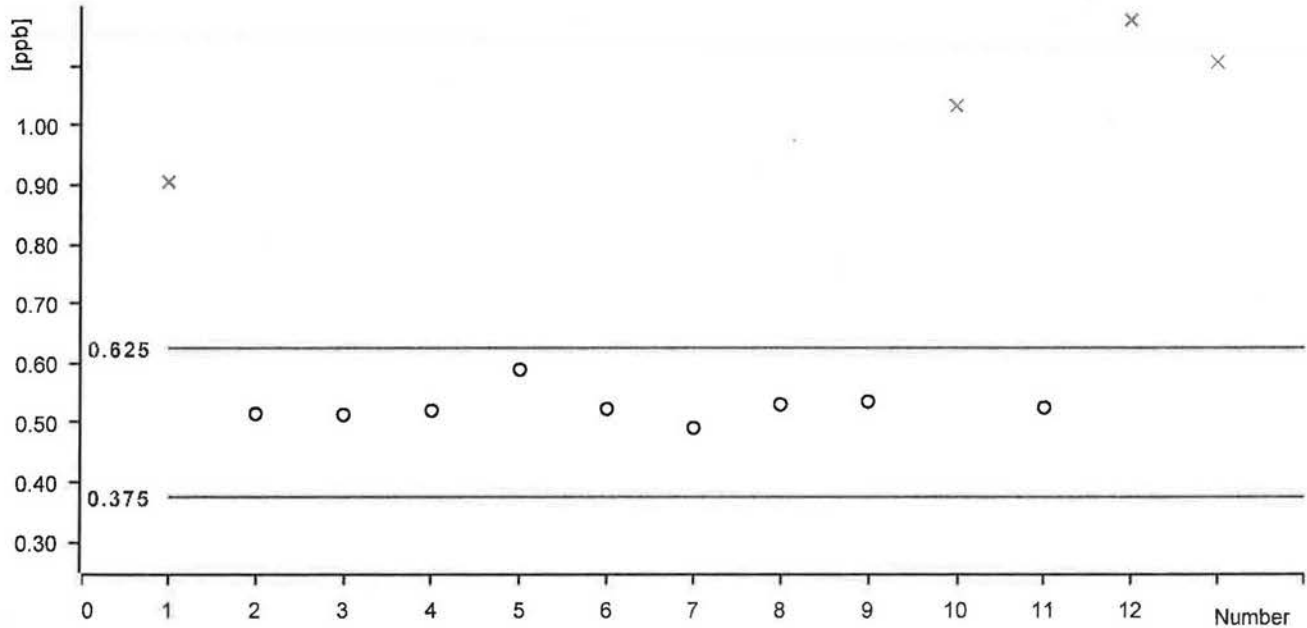


**Control chart**

3EUP 01-03-14

**Comment**

**ppb Bromate Concentration ICCS - 0.5 ppb**



**Statistics**

Mean value:	0.527 ppb	Absolute standard deviation:	0.027 ppb
Minimum:	0.491 ppb	Relative standard deviation:	5.038 %
Maximum:	0.589 ppb	Number of determinations:	9

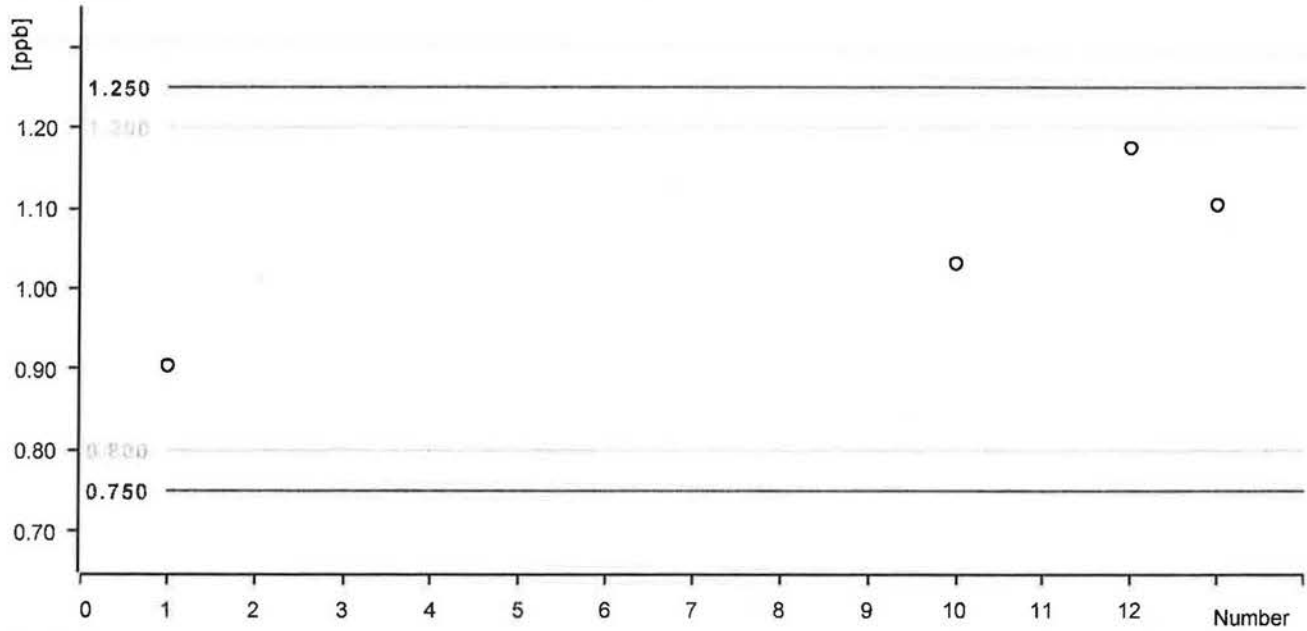
Date	Number	Ident	Sample type	Method	ppb Bromate Concentration ICCS	Statistics
2013-12-09 15:17:55 UTC-5	1	ICCS/LFB	Sample	11082013 300.1	0.901 ppb	90% Recovery
2013-12-09 12:16:49 UTC-5	2	ICCS/LFB	Sample	11082013 300.1	0.515 ppb	on
2013-12-10 08:50:29 UTC-5	3	ICCS/LFB	Sample	11082013 300.1	0.513 ppb	on
2013-12-12 09:22:03 UTC-5	4	ICCS/LFB	Sample	12112013 300.1	0.520 ppb	on
2013-12-13 09:40:25 UTC-5	5	ICCS/LFB	Sample	12112013 300.1	0.589 ppb	on
2013-12-16 08:36:42 UTC-5	6	ICCS/LFB	Sample	12112013 300.1	0.523 ppb	on
2013-12-17 08:36:02 UTC-5	7	ICCS/LFB	Sample	12112013 300.1	0.491 ppb	on
2013-12-18 08:21:51 UTC-5	8	ICCS/LFB	Sample	12112013 300.1	0.530 ppb	on
2013-12-19 10:36:24 UTC-5	9	ICCS/LFB	Sample	12112013 300.1	0.535 ppb	on
2013-12-20 08:17:20 UTC-5	10	ICCS/LFB	Sample	12112013 300.1	1.05 ppb	103% Recovery
2013-12-23 08:31:06 UTC-5	11	ICCS/LFB	Sample	12112013 300.1	0.525 ppb	on
2013-12-20 08:41:59 UTC-5	12	ICCS/LFB	Sample	12112013 300.1	1.15 ppb	118% Recovery
2013-12-21 08:11:01 UTC-5	13	ICCS/LFB	Sample	12112013 300.1	1.10 ppb	110% Recovery

**Control chart**

SEOP 01-03-14

**Comment**

**ppb Bromate Concentration ICCS -1.0ppb**



**Statistics**

Mean value:	1.054 ppb	Absolute standard deviation:	0.116 ppb
Minimum:	0.904 ppb	Relative standard deviation:	10.980 %
Maximum:	1.175 ppb	Number of determinations:	4

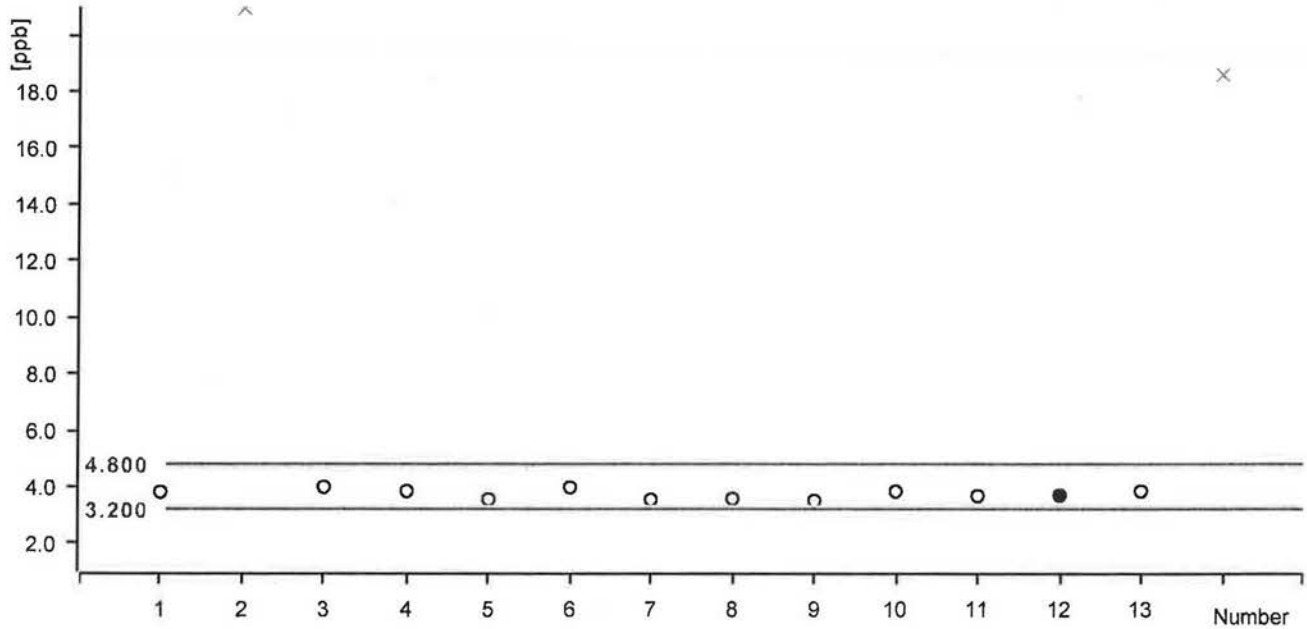
Date	Number	Ident	Sample type	Method	ppb Bromate Concentration ICCS	Statistics
2013-12-05 19:27:55 UTC-5	1	ICCS/LFB	Sample	11082013 300.1	0.904 ppb	on
2013-12-05 12:16:09 UTC-5	2	ICCS/LFB	Sample	11082013 300.1	1.035 ppb	off
2013-12-10 08:59:29 UTC-5	3	ICCS/LFB	Sample	12112013 300.1	0.812 ppb	off
2013-12-10 08:59:29 UTC-5	4	ICCS/LFB	Sample	12112013 300.1	0.825 ppb	off
2013-12-10 08:59:29 UTC-5	5	ICCS/LFB	Sample	12112013 300.1	0.815 ppb	off
2013-12-10 08:59:29 UTC-5	6	ICCS/LFB	Sample	12112013 300.1	0.815 ppb	off
2013-12-17 08:20:07 UTC-5	7	ICCS/LFB	Sample	12112013 300.1	0.815 ppb	off
2013-12-17 08:21:51 UTC-5	8	ICCS/LFB	Sample	12112013 300.1	0.815 ppb	off
2013-12-19 10:38:54 UTC-5	9	ICCS/LFB	Sample	12112013 300.1	0.815 ppb	off
2013-12-20 08:17:28 UTC-5	10	ICCS/LFB	Sample	12112013 300.1	1.032 ppb	on
2013-12-20 08:31:06 UTC-5	11	ICCS/LFB	Sample	12112013 300.1	0.815 ppb	off
2013-12-26 08:40:39 UTC-5	12	ICCS/LFB	Sample	12112013 300.1	1.175 ppb	on
2013-12-31 08:14:04 UTC-5	13	ICCS/LFB	Sample	12112013 300.1	1.104 ppb	on

# Control chart

SEP 01-03-14

## Comment

### Bromate 4 PPB concentration



## Statistics

Mean value:	3.725 ppb	Absolute standard deviation:	0.170 ppb
Minimum:	3.493 ppb	Relative standard deviation:	4.571 %
Maximum:	3.973 ppb	Number of determinations:	12

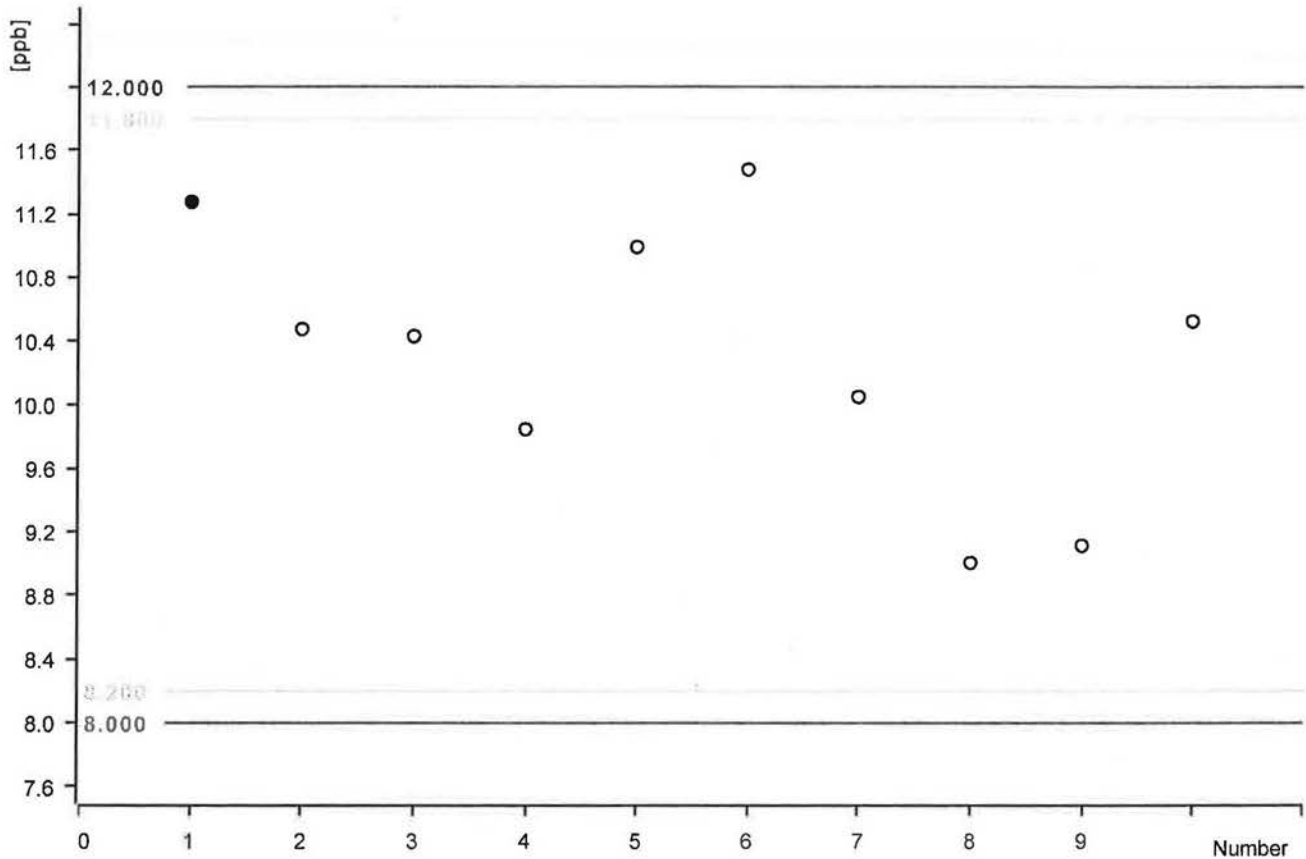
Date	Number	Ident	Sample type	Method	Bromate 4 PPB concentration	Statistics
2013-12-06 14:01:03 UTC-5	1	ECCS/CCCS	Sample	11082013 300.1	3.803 ppb	on
2013-12-06 19:58:44 UTC-5	2	ECCS/CCCS	Sample	11082013 300.1	3.973 ppb	100% Rec
2013-12-06 20:38:28 UTC-5	3	ECCS/CCCS	Sample	11082013 300.1	3.832 ppb	on
2013-12-09 21:38:14 UTC-5	4	ECCS/CCCS	Sample	11082013 300.1	3.545 ppb	on
2013-12-10 21:46:05 UTC-5	5	ECCS/CCCS	Sample	11082013 300.1	3.545 ppb	on
2013-12-12 21:58:23 UTC-5	6	ECCS/CCCS	Sample	12112013 300.1	3.870 ppb	on
2013-12-13 18:58:19 UTC-5	7	ECCS/CCCS	Sample	12112013 300.1	3.525 ppb	on
2013-12-16 14:34:01 UTC-5	8	ECCS/CCCS	Sample	12112013 300.1	3.583 ppb	on
2013-12-17 15:13:11 UTC-5	9	ECCS/CCCS	Sample	12112013 300.1	3.493 ppb	on
2013-12-18 15:38:48 UTC-5	10	ECCS/CCCS	Sample	12112013 300.1	3.819 ppb	on
2013-12-19 17:13:29 UTC-5	11	ECCS/CCCS	Sample	12112013 300.1	3.583 ppb	on
2013-12-20 15:34:17 UTC-5	12	ECCS/CCCS	Sample	12112013 300.1	3.881 ppb	on
2013-12-26 21:24:27 UTC-5	13	ECCS/CCCS	Sample	12112013 300.1	3.836 ppb	on
2013-12-31 17:35:51 UTC-5	14	ECCS/CCCS	Sample	12112013 300.1	3.836 ppb	93% Rec

**Control chart**

SEOP 01-03-14

**Comment**

**10PPB BROMATE qcs**



**Statistics**

Mean value:	10.318 ppb	Absolute standard deviation:	0.833 ppb
Minimum:	9.005 ppb	Relative standard deviation:	8.072 %
Maximum:	11.476 ppb	Number of determinations:	10

Date	Number	Ident	Sample type	Method	10PPB BROMATE qcs	Statistics
2013-12-10 23:05:31 UTC-5	1	QCS	Sample	11082013 300.1	11.272 ppb	on
2013-12-13 20:15:43 UTC-5	2	QCS	Sample	12112013 300.1	10.473 ppb	on
2013-12-16 15:53:26 UTC-5	3	QCS	Sample	12112013 300.1	10.430 ppb	on
2013-12-17 16:32:37 UTC-5	4	QCS	Sample	12112013 300.1	9.847 ppb	on
2013-12-18 16:58:12 UTC-5	5	QCS	Sample	12112013 300.1	10.988 ppb	on
2013-12-19 18:32:53 UTC-5	6	QCS	Sample	12112013 300.1	11.476 ppb	on
2013-12-20 16:53:40 UTC-5	7	QCS	Sample	12112013 300.1	10.051 ppb	on
2013-12-23 15:08:20 UTC-5	8	QCS	Sample	12112013 300.1	9.005 ppb	on
2013-12-26 22:04:09 UTC-5	9	QCS	Sample	12112013 300.1	9.115 ppb	on
2013-12-31 21:53:15 UTC-5	10	QCS	Sample	12112013 300.1	10.524 ppb	on