



Pall Corporation

Sample Analysis Report

June, 2013

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Analyst Initials: SEUP
Date: 07-09-13

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)
Residential Wells								
D0								
5005 Jackson Rd-06-24-13-10:10-1	25	1.0						
D2								
3161 Dexter Rd-06-19-13-12:15-1	nd	1.0						
Extraction Wells								
C3								
DOLPH-06-10-13-09:30-1	83	1.0						
TW-20-06-10-13-09:54-1	970	100.0						D
D2								
LB-1-06-10-13-08:50-1	660	50.0						D
TW-21-06-10-13-09:00-1	150	5.0						D
TW-5-06-10-13-10:30-1	790	100.0						D
TW-9-06-10-13-09:50-1	780	50.0						D
E								
TW-11-06-10-13-10:32-1	190	5.0						D
TW-18-06-10-13-09:40-1	320	50.0						D
TW-19-06-10-13-08:51-1	770	100.0						D
Marshy								
PW-1-06-10-13-09:41-1	900	50.0						D

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)
SW								
TW-22-06-10-13-10:12-1	770	50.0						D
TW-8-06-10-13-10:10-1	560	10.0						D
Monitoring Wells								
C3								
MW-1 Replacement-06-04-13-13:50-1	1800	100.0						D
MW-105s-06-21-13-11:05-1	620	10.0						D
MW-127s-06-18-13-10:45-1	nd	1.0						
MW-20-06-18-13-10:00-1	nd	1.0						
MW-34s-06-19-13-09:30-1	nd	1.0						
MW-75-06-19-13-10:25-1	1100	25.0						D
D0								
A2 Cleaning Supply-06-17-13-09:20-1	82	1.0						
MW-53d-06-18-13-09:25-1	2	1.0						
MW-53s-06-18-13-08:50-1	nd	1.0						
D2								
175 Jackson Plaza-06-05-13-10:45-1	1100	100.0						D
2819 Dexter Rd-06-17-13-14:35-1	600	100.0						D
373 Pinewood Shallow-06-20-13-09:25-1	470	10.0						D
456 Clarendon-06-04-13-13:10-1	950	100.0						D
465 Dupont-06-04-13-11:20-1	1400	100.0						D
593 Allison-06-05-13-11:50-1	320	5.0						D
MW-117-06-17-13-10:00-1	nd	1.0						
MW-4d-06-04-13-14:15-1	2200	100.0						D
MW-54s-06-19-13-11:00-1	nd	1.0						
MW-55-06-19-13-13:00-1	30	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-77-06-04-13-12:20-1	1700	100.0						D
MW-94s-06-20-13-11:15-1	300	100.0						D
MW-BE-1d-06-19-13-14:05-1	150	1.0						
E								
MW-101-06-05-13-13:40-1	220	10.0						D
MW-103s-06-17-13-11:15-1	83	1.0						
MW-105d-06-21-13-10:45-1	470	10.0						D
MW-106s-06-20-13-14:35-1	280	5.0						D
MW-108d-06-21-13-14:30-1	2300	100						D
MW-108s-06-21-13-13:40-1	870	100.0						D
MW-112i-06-17-13-10:50-1	7	1.0						
MW-127d-06-18-13-11:40-1	nd	1.0						
MW-135-06-18-13-14:25-1	nd	1.0						
MW-30d-06-04-13-10:00-1	720	100						D
MW-71-06-21-13-12:10-1	2100	100.0						D
MW-76s-06-17-13-11:45-1	310	50.0						D
MW-84s-06-17-13-13:45-1	520	100.0						D
MW-94d-06-27-13-11:10-1	3	1.0						
MW-95-06-27-13-12:05-1	32	1.0						D
MW-96-06-20-13-12:20-1	180	5.0						D
Saginaw Forest Cabin #2-06-18-13-13:00-1	2	1.0						
SW								
MW-57-06-19-13-09:55-1	4	1.0						
Surface Water								
Not Applicable								
HC/HR-06-03-13-09:10-1				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-06-04-13-08:05-1			nd	2.0				
HC/HR-06-05-13-08:25-1			nd	2.0				
HC/HR-06-06-13-08:00-1			nd	2.0				
HC/HR-06-07-13-08:00-1			nd	2.0				
HC/HR-06-10-13-08:15-1			nd	2.0				
HC/HR-06-11-13-07:35-1			nd	2.0				
HC/HR-06-12-13-07:55-1			nd	2.0				
HC/HR-06-13-13-08:25-1			nd	2.0				
HC/HR-06-14-13-07:20-1			nd	2.0				
HC/HR-06-17-13-07:55-1			nd	2.0				
HC/HR-06-18-13-07:55-1			nd	2.0				
HC/HR-06-19-13-08:05-1			nd	2.0				
HC/HR-06-20-13-07:55-1			nd	2.0				
HC/HR-06-21-13-08:30-1			nd	2.0				
HC/HR-06-24-13-07:40-1			nd	2.0				
HC/HR-06-25-13-07:15-1			nd	2.0				
HC/HR-06-26-13-07:25-1			nd	2.0				
HC/HR-06-27-13-07:50-1			nd	2.0				
HC/HR-06-28-13-07:10-1			nd	2.0				
Treatment System								
OUTFALL-06-02-13-1	10	1.0						O, B
OUTFALL-06-02-13-3	4	1.0						O, R
OUTFALL-06-02-13-2			6	5.0				
OUTFALL-06-03-13-1	9	1.0						O, B
OUTFALL-06-03-13-2			nd	5.0				
OUTFALL-06-04-13-1	7	1.0						O, B
OUTFALL-06-04-13-3	3	1.0						O, R

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-06-04-13-2			7	5.0				
OUTFALL-06-05-13-1	7	1.0						O, B
OUTFALL-06-05-13-2			7	5.0				
OUTFALL-06-06-13-1	7	1.0						
OUTFALL-06-06-13-2			6	5.0				
OUTFALL-06-09-13-1	5	1.0						
OUTFALL-06-09-13-2			nd	5.0				
OUTFALL-06-10-13-1	8	1.0						
OUTFALL-06-10-13-2			7	5.0				
OUTFALL-06-14-13-18:30-1	9	1.0					grab sample	
OUTFALL-06-14-13-18:30-2			nd	5.0			grab sample	
OUTFALL-06-16-13-1	5	1.0						
OUTFALL-06-16-13-2			nd	5.0				
OUTFALL-06-17-13-1	5	1.0						
OUTFALL-06-17-13-2			8	5.0				
OUTFALL-06-18-13-1	5	1.0						
OUTFALL-06-18-13-2			nd	5.0				
OUTFALL-06-19-13-1	5	1.0						
OUTFALL-06-19-13-2			5	5.0				
OUTFALL-06-20-13-1	6	1.0						
OUTFALL-06-20-13-2			6	5.0				
OUTFALL-06-23-13-1	6	1.0						
OUTFALL-06-23-13-2			nd	5.0				
OUTFALL-06-24-13-1	6	1.0						
OUTFALL-06-24-13-2			nd	5.0				
OUTFALL-06-25-13-1	6	1.0						
OUTFALL-06-25-13-2			nd	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-06-26-13-1	5	1.0						
OUTFALL-06-26-13-2			nd	5.0				
OUTFALL-06-27-13-1	6	1.0						
OUTFALL-06-27-13-2			nd	5.0				
OUTFALL-06-30-13-1	7	1.0						
OUTFALL-06-30-13-2			5	5.0				
Red Pond-06-03-13-07:07-1	470	10.0						O, B, D
Red Pond-06-10-13-08:15-1	480	10.0						D
Red Pond-06-17-13-07:05-1	640	50.0						D
Red Pond-06-24-13-07:40-1	580	10.0						D

Qualifier Code:**Qualifier Description**

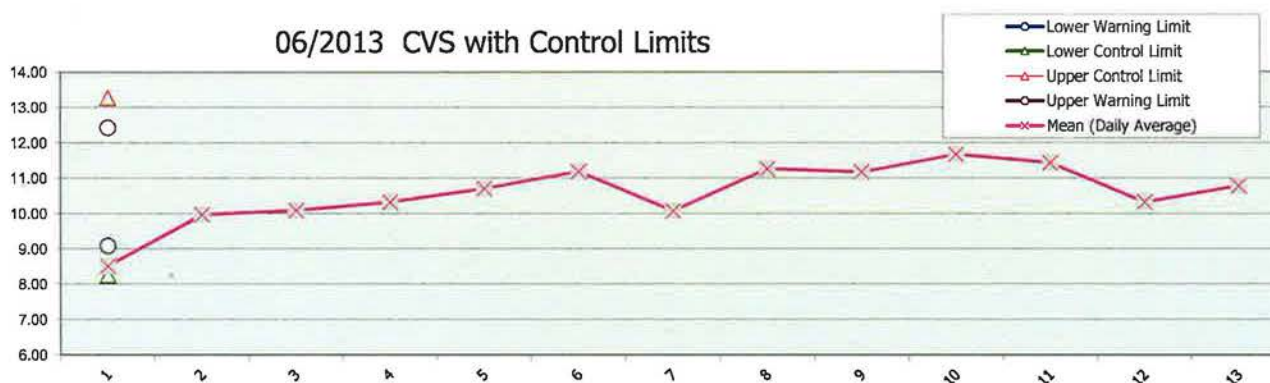
D	Analyte value quantified from a dilution, reporting limit is raised to reflect dilution
O	Samples were sent to outside laboratories due to an extended absence of the Pall Analytical Staff.
B	"Method Blanks" 2-3ppb levels for 1,4-dioxane, causing elevated levels in analyzed samples.
R	Replicate sample done from split samples, sent to Brighton Analytical Laboratories

Control Chart for 06/2013 CVS

Analyst: SEUP

GC/MS Data: #2
 Report Date: 7/9/2013
 Chemist: Susan E.O. Peters
 Dept: Environmental
 Analyte: 1,4-dioxane
 Start date: 6/1/2013
 End date: 6/30/2013
 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								
6/10/2013	8.52				8.52	10.76	na	0.84	8.25	13.28	9.09	12.44
6/11/2013	10.16	9.79			9.98	10.76	0.26					
6/12/2013	9.71	10.5			10.10	10.76	0.54					
6/13/2013	10.90	10.5	9.76	10.14	10.33	10.76	0.49					
6/17/2013	9.79	11.63			10.71	10.76	1.30					
6/18/2013	10.60	11.21	11.77	11.18	11.19	10.76	0.48					
6/19/2013	10.08				10.08	10.76	na					
6/20/2013	10.60	11.94			11.27	10.76	0.95					
6/25/2013	11.28	11.07			11.18	10.76	0.15					
6/26/2013	11.44	11.30	11.96	12.00	11.68	10.76	0.36					
6/27/2013	11.1	11.7			11.44	10.76	0.42					
6/28/2013	10.63	10.03			10.33	10.76	0.42					
7/1/2013	11.36	10.22			10.79	10.76	0.81					

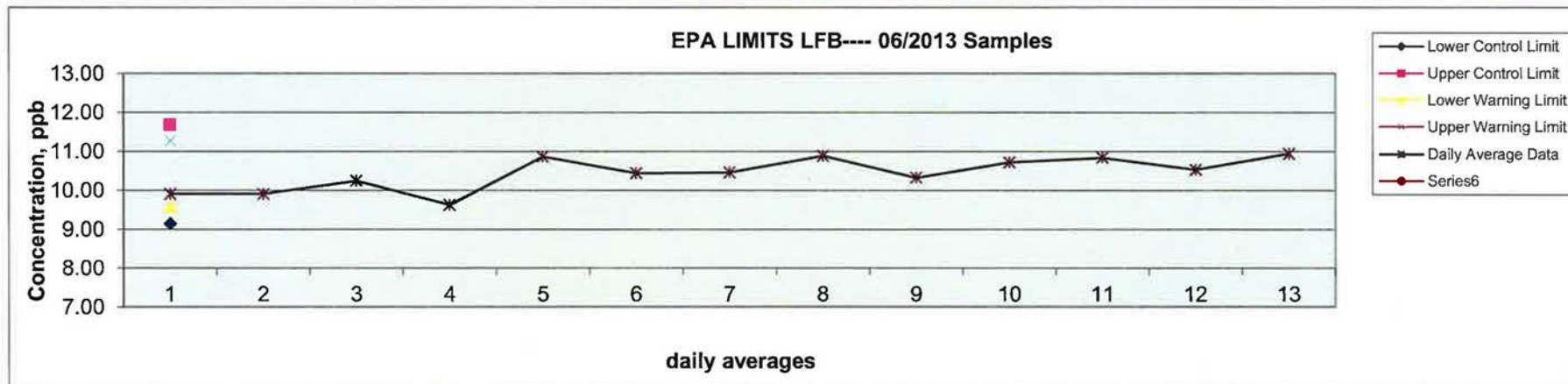


Control Chart for 6/2013 LFB

Analyst: SEUP

GC/MS Data: #2
 Report Date: 7/9/2013
 Chemist: Susan E.O. Peters
 Dept: Environmental
 Analyte: 1,4-dioxane
 Start date: 6/1/2013
 End date: 6/30/2013
 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								
6/10/2013	9.7	9.9	10.1				9.91	10.42	0.22	0.42	9.15	11.69	9.57	11.27
6/11/2013	9.69	10.1					9.91	10.42	0.31					
6/12/2013	10.8	10.1	9.9				10.25	10.42	0.45					
6/13/2013	10.1	11.2	9.64	8.44	9.07	9.25	9.63	10.42	0.97					
6/17/2013	10.4	11.3	10.9				10.87	10.42	0.49					
6/18/2013	9.9	10.7	10.5	10.7			10.44	10.42	0.39					
6/19/2013	11.1	9.84	10.4				10.47	10.42	0.65					
6/20/2013	11.1	10.27	10.5	11.4	11.2		10.89	10.42	0.49					
6/25/2013	9.86	11.3	9.8				10.33	10.42	0.84					
6/26/2013	10.0	10.2	12.0				10.72	10.42	1.11					
6/27/2013	9.7	11.0	11.83				10.84	10.42	1.06					
6/28/2013	10.49	11.96	9.15				10.53	10.42	1.41					
7/1/2013	10.53	11.68	10.63				10.95	10.42	0.64					



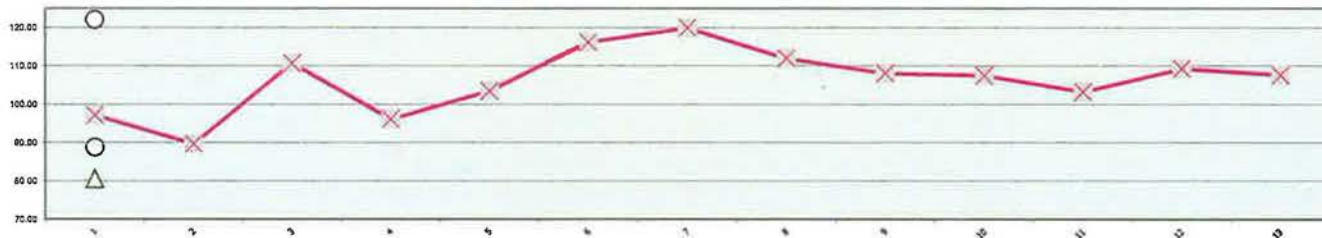
Control Chart for 06/2013 MS/MSD %Recoveries

Analyst: SEOP

GC/MS Data: #2
 Report Date: 7/9/2013
 Chemist: Susan E.O. Peters
 Dept: Environmental
 Analyte: 1,4-dioxane
 Start date: 6/1/2013
 End date: 6/30/2013
 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	MS 3	MSD 3									
6/10/2013	106	91	95	97			97.25	105.49	9.51	8.33	80.51	130.47	88.84	122.15	105.49
6/11/2013	85	95					89.70								
6/12/2013	108	114					110.75								
6/13/2013	92	100					96.20								
6/17/2013	105	102					103.50								
6/18/2013	113	115	121				116.30								
6/19/2013	120						120.00								
6/20/2013	110	114					112.00								
6/25/2013	104	112					108.10								
6/26/2013	110	105					107.50								
6/27/2013	107	100					103.25								
6/28/2013	115	104					109.30								
7/1/2013	120	95					107.65								

06/2013 MS/MSD with Control Limits

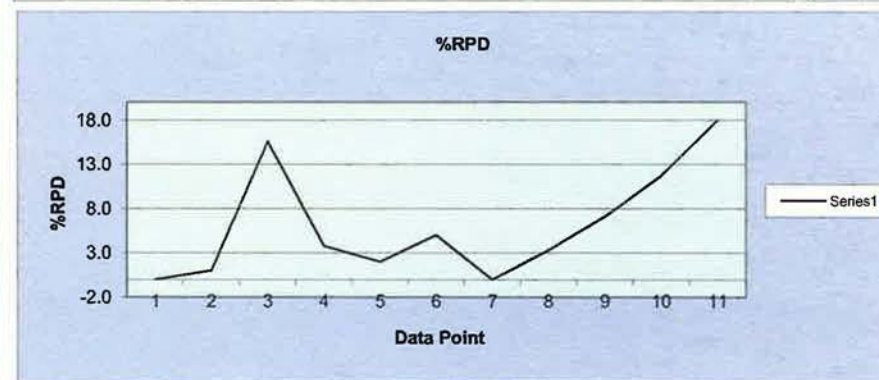
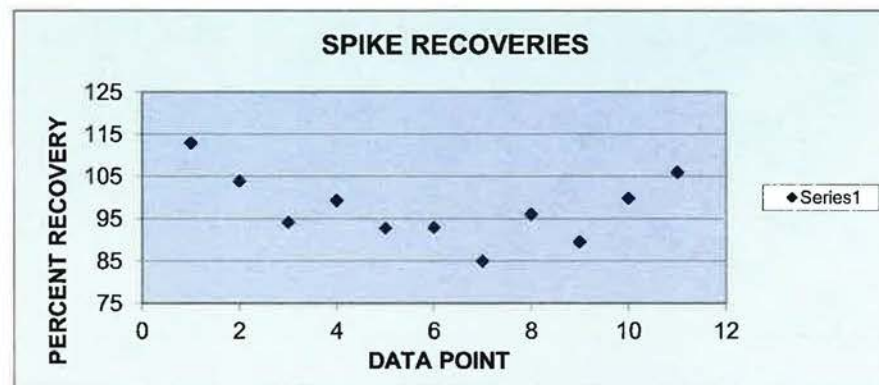


Control Chart for 06/2013 MS/MSD & Repeat %Recoveries

Analyst: SEOP

IC: Metrohm
Report Date: 7/9/2013
Chemist: Susan E.O. Peters
Dept: Environmental
Analyte: Bromate
Start date: 6/1/2013
End date: 6/31/2013
Desired level: 100%

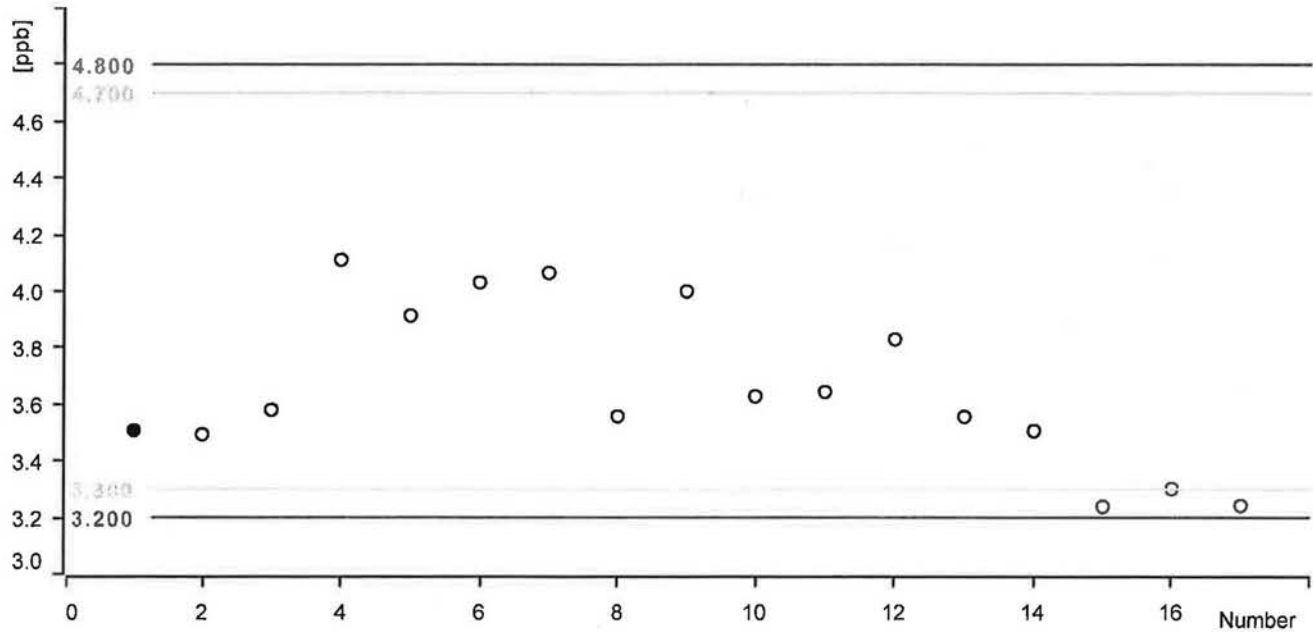
Analysis Date	MS Recoveries and Replicate Recoveries					Ave. Sample Replicates	Std. Dev. Sample Replicates	n =
	Spike 1 ----- % Rec	Spike 2 ----- % Rec	Ave. Spike Recovery (75-125%)	%RPD Spike Recovery (0-20%)	Std. Dev. Spikes			
6/12/2013	113	na	113	na	na	1.47	0.24	2
6/13/2013	104	103	104	1.0	0.7			
6/18/2013	85	103	94	15.6	12.5			
6/18/2013	101	97	99	3.8	3.0			
6/19/2013	91	94	93	2.0	1.9			
6/20/2013	89	97	93	5.0	5.7	5.42	0.04	2
6/21/2013	85	na	85	na	na	5.83	0.54	2
6/24/2013	94	98	96	3.3	3.2	3.01	0.30	2
6/25/2013	86	93	90	7.1	4.8	0.68	0.32	2
6/26/2013	93	107	99.8	11.7	10.2	2.50	0.02	2
6/28/2013	93	120	106	18.0	19.0	3.76	0.31	2



Control chart

Comment

Bromate 4 PPB concentration



Statistics

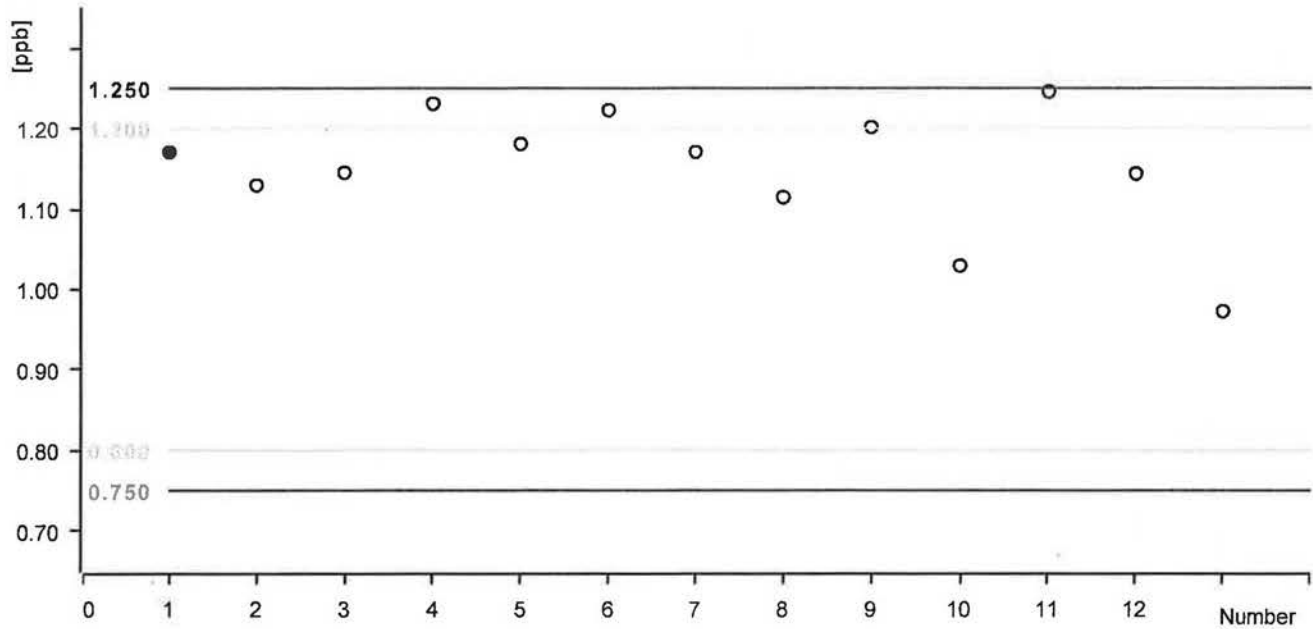
Mean value:	3.659 ppb	Absolute standard deviation:	0.285 ppb
Minimum:	3.239 ppb	Relative standard deviation:	7.780 %
Maximum:	4.111 ppb	Number of determinations:	17

Date	Number	Ident	Sample type	Method	Bromate 4 PPB concentration	Statistics
2013-06-10 22:52:17 UTC-4	1	ECCS/CCCS	Sample	04172013 300.1	3.508 ppb	on
2013-06-11 06:25:04 UTC-4	2	ECCS/CCCS	Sample	04172013 300.1	3.494 ppb	on
2013-06-11 13:58:05 UTC-4	3	ECCS/CCCS	Sample	04172013 300.1	3.579 ppb	on
2013-06-12 19:19:42 UTC-4	4	ECCS	Sample	04172013 300.1	4.111 ppb	on
2013-06-12 19:57:29 UTC-4	5	ECCS	Sample	04172013 300.1	3.913 ppb	on
2013-06-13 18:26:14 UTC-4	6	ECCS/CCCS	Sample	04172013 300.1	4.032 ppb	on
2013-06-18 20:49:06 UTC-4	7	ECCS/CCCS	Sample	04172013 300.1	4.065 ppb	on
2013-06-19 13:53:49 UTC-4	8	ECCS/CCCS	Sample	04172013 300.1	3.558 ppb	on
2013-06-19 15:58:28 UTC-4	9	ECCS/CCCS	Sample	04172013 300.1	3.999 ppb	on
2013-06-20 17:34:35 UTC-4	10	ECCS/CCCS	Sample	04172013 300.1	3.628 ppb	on
2013-06-21 14:04:25 UTC-4	11	ECCS/CCCS	Sample	04172013 300.1	3.643 ppb	on
2013-06-24 16:14:19 UTC-4	12	ECCS/CCCS	Sample	04172013 300.1	3.830 ppb	on
2013-06-25 13:10:30 UTC-4	13	ECCS/CCCS	Sample	04172013 300.1	3.556 ppb	on
2013-06-28 13:04:59 UTC-4	14	ECCS/CCCS	Sample	04172013 300.1	3.508 ppb	on
2013-06-27 20:20:32 UTC-4	15	ECCS	Sample	04172013 300.1	3.239 ppb	on
2013-06-28 15:06:58 UTC-4	16	ECCS/CCCS	Sample	04172013 300.1	3.302 ppb	on
2013-06-28 15:44:43 UTC-4	17	ECCS/CCCS	Sample	04172013 300.1	3.243 ppb	on

Control chart

Comment

ppb Bromate Concentration ICCS



Statistics

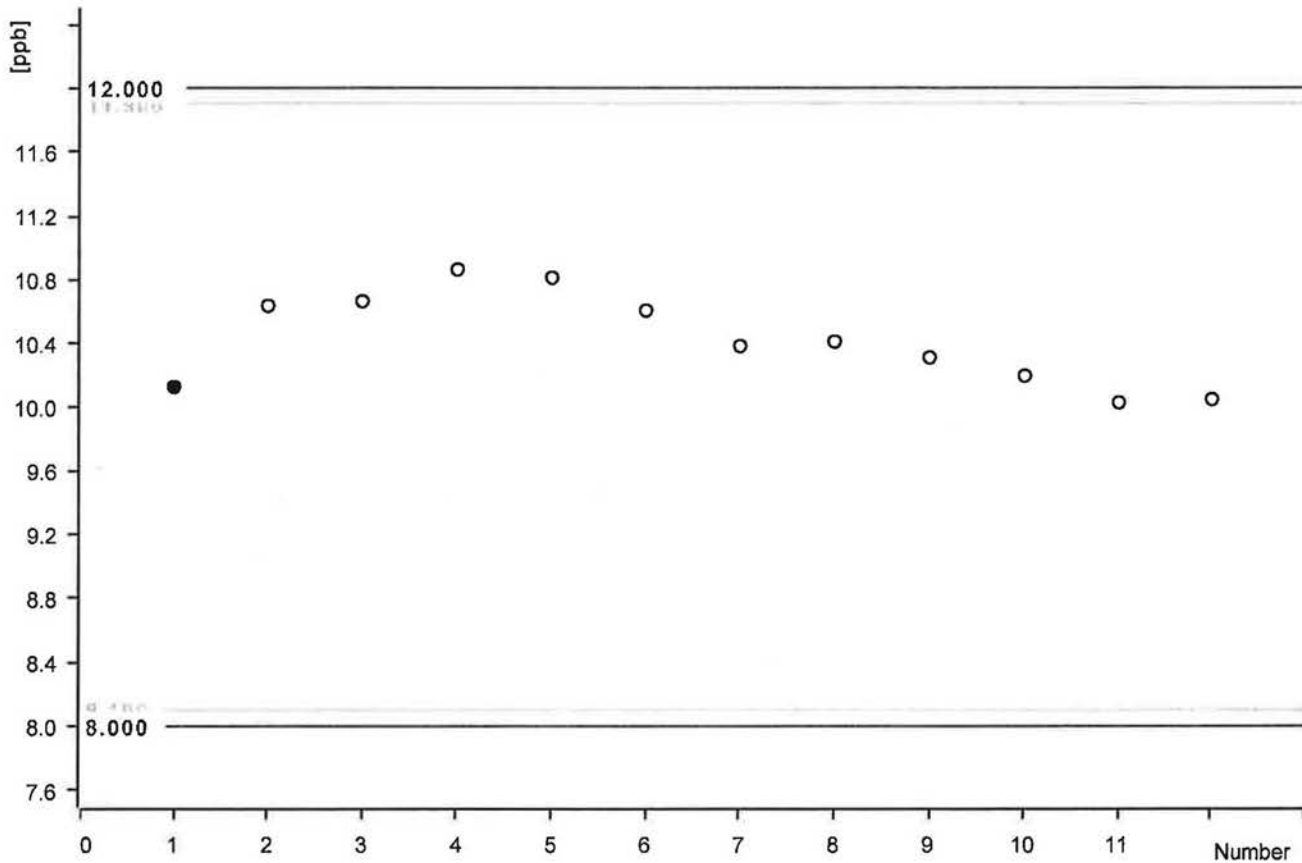
Mean value:	1.151 ppb	Absolute standard deviation:	0.078 ppb
Minimum:	0.973 ppb	Relative standard deviation:	6.799 %
Maximum:	1.246 ppb	Number of determinations:	13

Date	Number	Ident	Sample type	Method	ppb Bromate Concentration ICCS	Statistics
2013-06-10 11:49:58 UTC-4	1	ICCS/LFB	Sample	04172013 300.1	1.170 ppb	on
2013-06-10 15:19:26 UTC-4	2	ICCS/LFB	Sample	04172013 300.1	1.129 ppb	on
2013-06-12 09:27:32 UTC-4	3	ICCS/LFB	Sample	04172013 300.1	1.145 ppb	on
2013-06-13 14:39:49 UTC-4	4	ICCS/LFB	Sample	04172013 300.1	1.231 ppb	on
2013-06-18 10:45:32 UTC-4	5	ICCS/LFB	Sample	04172013 300.1	1.181 ppb	on
2013-06-19 09:29:44 UTC-4	6	ICCS/LFB	Sample	04172013 300.1	1.223 ppb	on
2013-06-20 13:09:24 UTC-4	7	ICCS/LFB	Sample	04172013 300.1	1.171 ppb	on
2013-06-21 09:40:24 UTC-4	8	ICCS/LFB	Sample	04172013 300.1	1.114 ppb	on
2013-06-24 11:50:16 UTC-4	9	ICCS/LFB	Sample	04172013 300.1	1.207 ppb	on
2013-06-25 08:46:26 UTC-4	10	ICCS/LFB	Sample	04172013 300.1	1.029 ppb	on
2013-06-26 08:26:43 UTC-4	11	ICCS/LFB	Sample	04172013 300.1	1.246 ppb	on
2013-06-27 15:58:18 UTC-4	12	ICCS/LFB	Sample	04172013 300.1	1.144 ppb	on
2013-06-28 08:49:32 UTC-4	13	ICCS/LFB	Sample	04172013 300.1	0.973 ppb	on

Control chart

Comment

10PPB BROMATE qcs



Statistics

Mean value:	10.423 ppb	Absolute standard deviation:	0.292 ppb
Minimum:	10.026 ppb	Relative standard deviation:	2.799 %
Maximum:	10.864 ppb	Number of determinations:	12

Date	Number	Ident	Sample type	Method	10PPB BROMATE qcs	Statistics
2013-06-11 15:13:33 UTC-4	1	QCS	Sample	04172013 300.1	10.126 ppb	on
2013-06-12 21:12:55 UTC-4	2	QCS	Sample	04172013 300.1	10.635 ppb	on
2013-06-13 19:41:43 UTC-4	3	QCS	Sample	04172013 300.1	10.664 ppb	on
2013-06-18 22:04:32 UTC-4	4	QCS	Sample	04172013 300.1	10.864 ppb	on
2013-06-19 17:31:06 UTC-4	5	QCS	Sample	04172013 300.1	10.810 ppb	on
2013-06-20 18:50:01 UTC-4	6	QCS	Sample	04172013 300.1	10.605 ppb	on
2013-06-21 15:19:51 UTC-4	7	QCS	Sample	04172013 300.1	10.381 ppb	on
2013-06-24 17:29:45 UTC-4	8	QCS	Sample	04172013 300.1	10.409 ppb	on
2013-06-25 16:29:23 UTC-4	9	QCS	Sample	04172013 300.1	10.310 ppb	on
2013-06-26 14:20:26 UTC-4	10	QCS	Sample	04172013 300.1	10.184 ppb	on
2013-06-27 21:36:01 UTC-4	11	QCS	Sample	04172013 300.1	10.026 ppb	on
2013-06-28 17:00:09 UTC-4	12	QCS	Sample	04172013 300.1	10.046 ppb	on